CONTENTS

Administrator’s Guide .................................................................................................................. 1

Contents ..................................................................................................................................... 3

Chapter 1 - Assets Concepts ..................................................................................................... 31

Assets, People and Organizations/Locations ............................................................................. 31
Asset Classes, Asset Types and Assets (Instances) .................................................................... 32
  Asset Classes ........................................................................................................................... 33
  Asset Types and Service Types ............................................................................................... 33
  Changing The Asset Type ........................................................................................................ 35
  Automatically Change Asset Type of Desktop to Laptop ....................................................... 35
Asset Fields ................................................................................................................................. 36
Attachments and Documentation of Assets .............................................................................. 38
Asset Linked to Other Assets ..................................................................................................... 38
Add New Assets Settings ........................................................................................................... 39
  Adding fields to the Add Assets Wizard ................................................................................ 41
Add New Assets .......................................................................................................................... 42
Importing Assets from an Excel file ............................................................................................ 43
Asset Change history .................................................................................................................. 45
Asset Containers ........................................................................................................................ 47
Digital Assets ............................................................................................................................... 47
Asset Baselines ............................................................................................................................ 50
Classifying and Prioritizing Assets ............................................................................................ 51
Personal Information and Confidentiality .................................................................................. 54
Preventing Unauthorized Changes to Assets ............................................................................. 55
Checklists .................................................................................................................................... 55
Relating Assets and Service Management ................................................................................ 57

Chapter 2 - Service Desk / HelpDesk ....................................................................................... 59

Terminology ................................................................................................................................. 59
Chapter 4 - People and Organizations ................................................................. 87

Users .................................................................................................................. 87
Managers of Employees ...................................................................................... 88
Importing Managers of Employees ................................................................ 88
Contacts ............................................................................................................ 88
Organizations or Companies ............................................................................ 89
User Groups ....................................................................................................... 89
Organizational Roles and Organizational Units ............................................ 92
Additional Fields ............................................................................................... 92
Additional Fields - Example .............................................................................. 93
Integration With Human Resources - HR Systems ......................................... 95
  What will the integration between VIZOR and the HR system do? .............. 95
Catalogs ............................................................................................................ 96
Employee/Personal Information ...................................................................... 96
Modifying the Integration ................................................................................ 97
Importing Users from an Excel file ................................................................. 99

Chapter 5 - Asset and Software Allocation .................................................. 102

What happens when an Asset is assigned to a person? ................................ 102
Confirm Acceptance ......................................................................................... 102
Allocations to Departments, Locations, Projects and Asset Containers ........ 105
  Allocating existing Assets to Departments, Locations or Projects .............. 105
Asset Containers - Pools of Assets ................................................................. 107
Asset Deallocation ........................................................................................... 107
Asset Quantities ............................................................................................... 107
Software Asset Allocations ............................................................................. 108
  Summary of Allocations ................................................................................. 108
  Allocation Type .............................................................................................. 109
  License Servers .............................................................................................. 111
Allocating Assets to Departments or Locations from the Purchase ............ 112
Allocating existing Assets to Departments, Locations or Projects ............... 112
Viewing Allocation per Department, Location or Project ........................... 114
Access Data for One Department or One Location Only ............................. 118
Importing Locations from an Excel file ................................................................. 120
Mapping Choice Values During Imports (Import Aliases) ........................................ 120
Assigning Software Assets ................................................................................... 122
  IT assigns a software asset to a person or computer ........................................... 123
  IT assigns software assets to multiple people or computers ............................. 123
Auto assign software asset to a person from a Request ....................................... 127
Auto assign software asset to a person from Onboarding .................................... 127
What happens if we need more licenses of a Software Asset Type? .................... 128
Automatic Allocation ............................................................................................ 128
  Auto-Allocation of Linked Assets ..................................................................... 128
  Auto-Allocation of Container Assets ................................................................ 129
  Automatic Asset Allocation from Recent Users .............................................. 129
Have Assets Follow The User’s Context ............................................................... 133
  Adding an OU Exception ................................................................................... 133

**Chapter 6 - Life Cycle of Assets and Services** ............................................... 134

Overview .............................................................................................................. 134
Asset Status ........................................................................................................ 135
  Asset Check-in/out ............................................................................................ 135
Request Status of an Asset .................................................................................. 138
Asset Acquired from Another Organization ....................................................... 140
Retiring Assets .................................................................................................... 141
Environmental Disposal and Compliance ............................................................. 143
  To be Scrapped Assets .................................................................................... 143
Detecting authorized software and hardware assets .......................................... 144
  For Hardware: ................................................................................................. 144
  For Software: ................................................................................................. 145
Automatic Removal of Software Installations ...................................................... 146
Querying Changes to Assets in a Period of Time ............................................... 147
Use of Barcode Readers ....................................................................................... 150
  Asset Inventory Audit with a Barcode Reader ................................................... 150
  Add Assets with a Barcode Reader .................................................................. 151

**Chapter 7 - Service & Asset Requests** ............................................................ 153
Delegates
Approval Exceptions
Dynamic Approvers
Measuring Demand for Services and Assets
Add/Remove Fields from a Survey
Creating a new Survey view
About Surveys
Measuring
Reporting Costs
Billing and Charge Backs
Advanced Notes on the Request
Fulfilling Requests
Approving Requests
Re-Cancelling Requests
Controlling Repeated Submissions for the same Request
Minimum Required Approvers
Fulfilling Requests
Advanced Notes on the Request-Fulfillment process
Billing and Charge Backs
Reporting Costs
Measuring Results
About Surveys
Creating a new Survey view
Add/Remove Fields from a Survey
Enabling Ratings UI For Choice List Fields
Measuring Demand for Services and Assets

Chapter 8 - Approvals

Dynamic Approvers
<Employee Manager>
<Employee Supervisor>
<Asset Responsible>
Approval Exceptions
Delegates
Chapter 9 - Asset Life-Cycle Automated Actions ........................................ 190

Events in the Life-Cycle of an Asset .................................................................. 190
Create Tickets In Parallel... or not ...................................................................... 191
Can I create more Types of Actions? .................................................................. 192
Enabling Auto_Provisioning ............................................................................... 192
Approval Action ................................................................................................. 192
Active Directory Actions ..................................................................................... 192
Set up the Connector for Active Directory Actions ............................................ 193
Create HelpDesk Ticket Action .......................................................................... 194
Execute Command Action .................................................................................. 194
Create Change Record Action (Change Management Ticket) ............................. 194
Send Email Action ............................................................................................. 194
VIZOR Action ..................................................................................................... 194
Example Testing Life-Cycle Automated Actions ................................................ 195

Chapter 10 - Onboarding and Automated User Provisioning................................. 196

Onboarding: person joins the organization .......................................................... 196
Start the onboarding of a new employee/account ............................................... 197
How VIZOR knows what Assets and Services to give to the person? ................. 199
How VIZOR Provisions these Assets and Services? ............................................ 201
Approvals .......................................................................................................... 201

Chapter 11 - Software Assets ............................................................................. 203

Software Assets ................................................................................................ 203
The Definitive Media Library .............................................................................. 204

Chapter 12 - Software Licenses .......................................................................... 206

Expirations and Renewals .................................................................................. 206
License Compliance State .................................................................................. 206
Licensing Calculations ....................................................................................... 208
License Compliance of Operating Systems ......................................................... 209
Documentation .................................................................................................. 212
License Purchase calculations ............................................................................. 214
Chapter 13 - Software Installations ................................................................. 219
  Allocations vs Installations ........................................................................ 219
  Reconciliation and Identification of Allocation vs Installations ................. 221
    In Software Assets: .................................................................................. 221
    In Installations: ...................................................................................... 222
  Software License Keys Discovery .................................................................. 222

Chapter 14 - Warranties .................................................................................. 226
  Automatically Obtaining the Warranty Information .................................... 226
  Vendor URLs used ..................................................................................... 227

Chapter 15 - Financial Information & Purchases .......................................... 228
  Asset Types Costs ..................................................................................... 228
    Import Costs from External Systems ....................................................... 228
  Costs of Asset Instances .......................................................................... 230
  Categorizing Asset Costs .......................................................................... 231
  Asset Purchase Information ....................................................................... 233
  Purchase Auto Renewal ............................................................................ 234
    How does the Auto Renewal Work? .......................................................... 234
  Depreciation Schemes ............................................................................. 235
  How Often is Depreciation Triggered? ......................................................... 237
  Asset Agreements and Purchases ............................................................... 238
    Setting up Alerts for Line Items and Purchases ...................................... 239

Chapter 16 - Audits ......................................................................................... 240
  Preventing Changes During Audits ............................................................. 241
  Physical Inventory Audit ............................................................................ 242
  When is the Last Audit Field Updated? ......................................................... 242

Chapter 17 - Integration Between Processes .................................................. 243
  From Assets .............................................................................................. 243
  Incidents .................................................................................................... 243
Change Records ........................................................................................................................................243
Release Records ......................................................................................................................................244
Alerts in incident management ..................................................................................................................244
From Service Requests ..............................................................................................................................245
Incidents ......................................................................................................................................................245
Change Records ........................................................................................................................................246
Release Records ........................................................................................................................................246
Asset and Configuration Records ..............................................................................................................247

**Chapter 18 - Administering VIZOR ................................................................. 248**

Creating Projects and Generating Web Views ..........................................................................................248
Administering Projects and Web Views ....................................................................................................249
Email Integration .........................................................................................................................................249
Email Integration .........................................................................................................................................249
VIZOR Admin ..............................................................................................................................................253
Vizor Web Admin .........................................................................................................................................254
To manually create the CensusAdminsGroup after VIZOR is installed: ..............................................256
Global Configuration Options or Settings .................................................................................................256
Application Setup and Maintenance Task .................................................................................................258

**Chapter 19 - Integration with Active Directory .......................................................... 259**

Overview ..................................................................................................................................................259
Integrating if VIZOR is in the Cloud ...........................................................................................................260
Importing Users and Authentication ...........................................................................................................261
How are user accounts Identified and synchronized? ............................................................................261
Fields Automatically Synchronized ...........................................................................................................263
How to Configure the Integration with AD (when it is not in Azure) ......................................................265
To import user accounts from an Active Directory or Windows domain: ............................................268
Updating Active Directory from VIZOR (via Actions) ............................................................................270
Automatic Provisioning of Software via AD Actions ....................................................................................271

**Chapter 20 - Integration with Azure ................................................................. 271**

Overview ..................................................................................................................................................271
For Importing Users and Authentication ....................................................................................................272
Chapter 21 - Integration with Google ......................................................... 278
  Import Chromebooks from Google .......................................................... 278
  Annotated User vs Recent Users ............................................................... 279
  Device Fields Mapped from Google .......................................................... 280
  Troubleshooting Google Authentication ................................................... 282
  Import Users from Google ....................................................................... 283
  User Fields Mapped from Google .............................................................. 283

Chapter 22 - Integration with PowerSchool ............................................... 285
  User Fields Mapped from PowerSchool (STUDENTS) .................................. 285
  User Fields Mapped from PowerSchool (Staff) ........................................... 287
  Increasing Grade Level for All Students in VIZOR ..................................... 288

Chapter 23 - Searching and Querying ....................................................... 289
  Summary List Query ............................................................................. 289
  Ad-hoc Filters ...................................................................................... 289
  Simple Search ...................................................................................... 292
    Searching within a query .................................................................... 295
  About Queries ..................................................................................... 296
    Notes ............................................................................................... 296
  The Base Query .................................................................................... 297
    How to set up a base query ................................................................ 298
  Searching by Dates ............................................................................... 300
  Searching for Unassigned Assets or Issues ............................................. 300
  Finding assets or Issues Owned by the Current User ............................... 301
  Finding New Assets or Issues .................................................................. 301
  Finding Parent Issues ........................................................................... 301
  Searching Choices Lists with Relational Operators .................................. 301
  Saving Queries ..................................................................................... 303
  Inserting Parentheses Around Search Conditions .................................... 303
Searching for Strings ........................................................................................................... 303
Searching for Null Values .................................................................................................. 304
Searching with Wildcards .................................................................................................. 305
Using Macros in queries ..................................................................................................... 306
  <Is Accessible Department> .............................................................................................. 306
  <Is Accessible Location> .................................................................................................... 307
Timeout Database Queries ................................................................................................. 308
The Auto – Status Queries .................................................................................................. 309
  Auto set status on custom conditions ................................................................................ 310

Chapter 24 - The Summary List ......................................................................................... 312

  About Sorts ....................................................................................................................... 312
  Sort Orders ....................................................................................................................... 313
  Saving Sorts ...................................................................................................................... 314
    Related Topics ................................................................................................................. 314
  About Summary List Layouts ............................................................................................ 315
  Saving Layouts .................................................................................................................. 315
    Summary List Layouts and Drill-Down ............................................................................. 316

Chapter 25 - Reporting ....................................................................................................... 317

  About Reports .................................................................................................................. 317
  Viewing Reports ............................................................................................................... 317
  Types of Reports .............................................................................................................. 318
  Standard Reports ............................................................................................................. 318
  Custom Reports ................................................................................................................ 320
    Creating new Custom Reports ......................................................................................... 321
  Large Reports with Large Data ......................................................................................... 323
  Viewing a Pre-generated Report in the VIZOR reports area ............................................ 323
  Types of Crystal Reports in VIZOR ................................................................................. 324
    How is the type of report indicated? ................................................................................ 325
      1. Dynamic Query Report ............................................................................................ 326
      2. Dynamic Connection Report .................................................................................. 328
      3. Stand-alone Report .................................................................................................. 329
  Customizing the Report Used by the Print Button ............................................................ 330
Chapter 26 - Computers and Discovery Tools .............................................. 334

Discovery of Computers - Bringing Computers Into VIZOR .......................... 334
Vector Discovery .................................................................................................. 334
  How does Vector Discovery collect information? ........................................... 335
  What Information is Synchronized/Imported from VECTOR Discovery? .......... 335
Integration with Microsoft Endpoint Configuration Manager - ECM (AKA SCCM) .................................................. 338
  Understanding How the Integration Works ...................................................... 338
  What Information is Synchronized/Imported from ECM/SCCM? .................... 339
  Configuring the Integration with ECM ............................................................. 343
SolarWinds .......................................................................................................... 352
LANSweeper ...................................................................................................... 352
Excel / Worksheet .............................................................................................. 352
In-house Inventory .............................................................................................. 352
Needs Attention - Not Seen Recently ................................................................. 353
Information specific to Mobile Devices and Phones .......................................... 353
Identifying the Source of an Asset Record and Documenting the Discovery Process .................................................. 355
Identifying Discrepancies vs Discovery .............................................................. 356

Chapter 27 - Managing Contacts, Users and Groups ....................................... 358

About Users and Contacts .................................................................................. 358
  Users .................................................................................................................. 359
  Groups ............................................................................................................... 359
  Contacts ............................................................................................................ 359
Importing Users and Contacts from Windows .................................................. 360
Administering Users and Contacts ................................................................. 360
User Security ...................................................................................................... 360
User Groups ...................................................................................................... 361
Notes ............................................................................................................... 361
Importing User Accounts ................................................................................ 363
Integration with Microsoft Dynamics ................................................................. 363
Needs Attention - Not Seen Recently .............................................................. 364
Defining Import Rules ...................................................................................... 364
Integrating with Active Directory ................................................................. 365
When VIZOR is in the Cloud .......................................................................... 366
  Real-Time Integration .................................................................................. 366
  Import ......................................................................................................... 366
Filtering Users ................................................................................................. 366
Import Settings ................................................................................................. 368
Creating User Accounts .................................................................................. 369
User Account Logon and Email ...................................................................... 369
  Example of email patterns ......................................................................... 371
Enabling and Disabling Projects ..................................................................... 372
Work Teams ..................................................................................................... 373
  Assigning Users to Work Teams ............................................................... 373
  Adding Work Team Support to Web Views .............................................. 374
  Building Work Team Queries .................................................................. 374
User Categories ................................................................................................. 375
  Assigning Users to Categories .................................................................. 375
  Hiding Users in Projects .......................................................................... 376
Creating VIZOR-only Users ........................................................................... 377
Disabling User or Employee Accounts ............................................................ 380
Deleting User or Employee Accounts .............................................................. 381
Removing Disabled Users from Choice Lists .................................................. 381
Adding a Choice List of Users or Contacts ....................................................... 382
Editing User Information ................................................................................ 383
Passwords ....................................................................................................... 383
Changing password for a VIZOR-native account .......................................... 384
Changing the Authentication Method ............................................................... 384
Defining User Groups ...................................................................................... 385
Groups: Adding and Removing Users .............................................................. 386
Users: Changing Group Membership ............................................................. 387
Chapter 28 - Fields..........................................................................................397

The Field Editor ..........................................................................................397
Editing Fields ...............................................................................................397
Destination Tab ............................................................................................397
Caption and Label .........................................................................................397
Data ...............................................................................................................398
Field Is ..........................................................................................................398
Default Values .............................................................................................399
Show in Choice Lists ..................................................................................402
Maintain Revision History ........................................................................402
About Adding Fields ...................................................................................402
Tracking Changes .......................................................................................404
Setting Field Labels ...................................................................................405
Choosing a Field Type ................................................................................406
Setting the Field Size ................................................................................408
About Removing Fields .............................................................................409
Deleting Fields ............................................................................................409
Hiding Fields in all Web Views .................................................................409
Notes ...........................................................................................................409
Removing Fields from Web Views ............................................................410

Controlling access and security of a field ..................................................410

Choice Lists.................................................................................................410
Editing Choice Tables ................................................................................411
Editing Choice Text .....................................................................................411
Renaming Choice List Tables ....................................................................412
Sorting Choice Lists ...................................................................................412
Chapter 29 - E-mail Integration

E-mail Integration .................................................................................................................. 416
Incoming E-mail Integration Process ...................................................................................... 416
  Specifying the E-mail Integration Parameters .................................................................. 417
  Incoming E-Mail Rules ....................................................................................................... 419
  Using Regular Expressions in the Email Rule Conditions .................................................. 421
Outgoing E-mail Settings ....................................................................................................... 423
  To configure the Mail Settings: ........................................................................................ 424
Mapping Message Fields to Issue Fields .............................................................................. 427
Setting Default Values for Records Submitted by E-mail ................................................... 429
Sending Automatic E-mails .................................................................................................. 431
  To send an automatic e-mail as an SLA Escalation Rule Action: .................................. 431
  To send an automatic e-mail as an E-mail Integration Rule Action: .............................. 431
Sending E-mails From the Web Views ................................................................................. 432
  Service Level Agreements (SLA) and E-mails: ............................................................... 432
Using the E-mail Editor ......................................................................................................... 433
Sending E-mails ................................................................................................................... 433
  Editing the To, CC, and From Fields .............................................................................. 433
  Notes .................................................................................................................................. 434
  Editing E-mail Content ...................................................................................................... 434
  Attaching Files .................................................................................................................. 435
E-mail Conversation and Queue .......................................................................................... 435
The E-mail Conversation ........................................................................................................ 435
The E-mail Queue ................................................................................................................ 436
Working with E-mails in the UI (Web View) ....................................................................... 436
Sending New E-mails .......................................................................................................... 436
Replying to E-mails .............................................................................................................. 437
Forwarding E-mails ............................................................................................................ 437
Linking an E-mail to an Existing Issue ............................................................................... 438
Chapter 30 - Business & Workflow Rules ........................................................................... 448

About Business & Workflow Rules ............................................................................... 448
What Can You Do with Business & Workflow Rules? ...................................................... 448
Automate Business & Workflow .................................................................................. 449

Examples....................................................................................................................... 451
Example 1: .................................................................................................................... 451
Example 2: .................................................................................................................... 452
Example 3: .................................................................................................................... 452
Example 4: .................................................................................................................... 453

Create Related Choice Lists ......................................................................................... 453

Examples....................................................................................................................... 453
update the Functional Area list Depending on the Type................................................. 454

Set Field Values............................................................................................................ 454

Examples....................................................................................................................... 455

What You Should Know about Business & Workflow Rules .......................................... 455

What is a Business & Workflow Rule? ........................................................................... 457

Creating Rule Templates .............................................................................................. 458
Defining Conditions ....................................................................................................... 461
Defining Conditions based on User Groups .................................................................... 461
Defining Conditions for New Issues ............................................................................. 461
Defining Rules .............................................................................................................. 462
Notes............................................................................................................................. 462
Chapter 31 - Defining Service Level Agreements ............................................ 469

About Service Level Agreements ........................................................................ 469
Setting Up Service Agreements .......................................................................... 470
Target Times ........................................................................................................ 471
Escalation Levels .................................................................................................. 472
About Escalation Rules .......................................................................................... 473
Order of Evaluation ................................................................................................. 474
Conditions .............................................................................................................. 475
  Target Time conditions .......................................................................................... 475
  <Field> = <Value> ............................................................................................... 475
  Meets the query <Value> ..................................................................................... 475
Sending E-mail Messages ........................................................................................ 476
Editing the To, CC, and From Fields ..................................................................... 476
  Notes ..................................................................................................................... 476
Editing E-mail Content ............................................................................................ 477
Attaching Files ......................................................................................................... 477
Running Programs .................................................................................................. 479
  Notes ..................................................................................................................... 479
Specifying Operational Hours .................................................................................. 480
Defining Service Levels ............................................................................................ 481
Creating Service Agreements .................................................................................... 482
  Global Service Level Agreements ...................................................................... 482
Applying Service Agreements to Issues .................................................................... 484
Chapter 32 - E-mail Notifications ................................................................. 488

About Notifications ....................................................................................... 488
What Can You Do With Notifications? ......................................................... 488
The Auto – Close Notification ....................................................................... 491
Editing Notifications ..................................................................................... 492
Specifying Notification Recipients ................................................................. 493
Defining When Conditions ............................................................................ 493
Sending Notifications of Field Updates ......................................................... 494
Basing Notifications on Users ....................................................................... 494
Specifying Notification Contents ................................................................. 494
  Pre-defined mail contents ............................................................................ 495
  Based on Email Templates ........................................................................ 496
  The Subject of the Email ........................................................................... 496
Managing Workflow with Notifications ........................................................ 497
Setting Up Notifications ................................................................................ 498
  To set up the notification service ............................................................... 499
Setting the Mail Server Options ................................................................... 499
  To set the mail server options in VIZOR Admin: ...................................... 499
Handling Notification Failures ..................................................................... 500
Examples ........................................................................................................ 501
  Sending a notification when a non-owner updates a HelpDesk issue .......... 501
  Sending a notification when VIP issues are updated ............................... 502
  Sending a notification Before the Expiration of a Purchase .................... 505
  (e.g. Subscription) .................................................................................... 505

Chapter 33 - Generating Web Views.............................................................. 508

What is a Web View? ...................................................................................... 508
About the Web View Editor .......................................................................... 510

ADDING/REMOVING FIELDS IN A WEB VIEW ......................................... 512
Creating Web Views ........................................................................................................ 514
  Notes .............................................................................................................................. 514
Generating Web Views ...................................................................................................... 515
  Notes .............................................................................................................................. 515
Copying Web Views .......................................................................................................... 515
Deleting Web Views .......................................................................................................... 516
  Should I delete a Default Web View? ........................................................................... 516
Renaming Web Views ........................................................................................................ 516
Types of Web Views ......................................................................................................... 517
  Normal Views ................................................................................................................ 517
  Read-only Views ............................................................................................................ 517
  Knowledge Base Views ................................................................................................. 517
  Frequently Asked Questions Views ............................................................................. 517
Submit-only Views .......................................................................................................... 518
Self-Service Views ........................................................................................................... 518
How licenses are used depending on the type of Web view ........................................... 518
Setting Web View Attributes .......................................................................................... 519
  Auto Refresh Summary List ......................................................................................... 519
  Contact Tab in Record Details ..................................................................................... 519
  Description .................................................................................................................. 520
  Display All Read-Only Fields As Text ......................................................................... 520
  Include VSS .................................................................................................................. 520
  Issues per Page ............................................................................................................ 520
  Timeout ........................................................................................................................ 520
  Load Issues Not In Query ............................................................................................ 521
  Web View Text ............................................................................................................. 521
  Web View Text CSS Class ............................................................................................ 521
  Web View Theme ........................................................................................................ 521
Setting Group Access Permissions .................................................................................. 521
How to hide certain buttons in Web views ....................................................................... 522
Knowledge Base Views .................................................................................................... 524
Using Knowledge Base Views .......................................................................................... 525
Creating and Updating a Knowledge Base View .............................................................. 525
The Add to Knowledge Base Field ................................................................. 526
Self-Service Views ......................................................................................... 527
Using Self-Service Views .............................................................................. 527
Creating and Updating a Self-Service View ................................................... 527
Exporting Fields ........................................................................................... 530
  Notes ........................................................................................................... 530
Exporting Queries .......................................................................................... 531
  Notes ........................................................................................................... 531
Adding the Child Issues Tab ........................................................................... 531
Editing Field Attributes .................................................................................. 533
Using Field Variables ..................................................................................... 534
Adding Pop-up Editors .................................................................................... 534
Aligning Fields ............................................................................................... 535
Automatically Updating Choice Lists .............................................................. 535
  Notes ........................................................................................................... 535
Changing Field Captions ................................................................................ 536
Spanning Columns .......................................................................................... 537
Fields .............................................................................................................. 537
Captions ......................................................................................................... 537
Applying CSS Styles ....................................................................................... 537
Displaying Read-Only Fields ......................................................................... 538
  Notes ........................................................................................................... 538
Width .............................................................................................................. 539
Inserting Custom HTML Code ....................................................................... 539
  Notes ........................................................................................................... 540
Adding URL Buttons ....................................................................................... 540
Text Boxes ...................................................................................................... 542
Multi-Choice Lists .......................................................................................... 542
Configuring Choice Lists ............................................................................... 542
Linking User Details ....................................................................................... 543
Hiding Fields ................................................................................................. 544
Pointing Users to Web Views ......................................................................... 544
Chapter 34 - Templates and the CustomizedFiles Folder .................................................. 551

How are the files in the CustomizedFiles folder template used? .................................. 551
Checking customizations before updating to a new version .................................................. 552
What Happens After an Upgrade of VIZOR? ................................................................. 552
Customizing Web View Files ......................................................................................... 553
Customizing Shared Web View Files ............................................................................. 554
Overriding Customizations ............................................................................................... 554
Customizing the Web View Interface ............................................................................. 555
  CensusMain.css ............................................................................................................. 555
  TmplCensusMain.htm .................................................................................................... 555
  TmplToolbar.htm ........................................................................................................ 555
  TmplSummaryList.htm ................................................................................................. 556
  TmplSQE.htm .............................................................................................................. 556
  Tabs.asp ....................................................................................................................... 556
  TmplCmdBar.htm ........................................................................................................ 556

Chapter 35 - Security Topics .......................................................................................... 557

Overview of Security Topics ........................................................................................... 557
User Groups ..................................................................................................................... 557
Security and access control to authorized data in VIZOR .................................................. 558
  Controlling access and security of a field ................................................................. 558
Security and access control to authorized features in VIZOR ........................................... 558
Authentication to log in to VIZOR .................................................................................. 562
Secured sessions while using the VIZOR application ....................................................... 563
Security and access control to external resources using VIZOR ...................................... 563
  Active Directory Actions ......................................................................................... 563
Security in Vector Discovery .......................................................................................... 564
Chapter 36 - Maintaining Your VIZOR System .......................................................... 567

Changing the Date and Time Formats for Web Views ............................................. 568
Setting up the currency ......................................................................................... 568
Administering VIZOR on the Web ........................................................................ 569
Logging On ............................................................................................................ 569
Generating VIZOR Web Admin ............................................................................. 570
Windows Permissions ............................................................................................ 570
Controlling the Frequency of Service Tasks ......................................................... 570
Execute Actions Interval (ID 14) .......................................................................... 571
Calculate Licences Interval (ID 15) ....................................................................... 571
Send Emails Interval (ID 214) ............................................................................. 571
Assets Verification Interval (ID 455) ..................................................................... 571
Evaluate Notifications Interval (ID 202) .............................................................. 571
Relocating Databases to SQL Server .................................................................... 572
Notes .................................................................................................................... 573
Troubleshooting Relocations ................................................................................ 573
Relocating Attachments ....................................................................................... 575
Notes .................................................................................................................... 576
Deleting Issues, Assets and Other Records ........................................................... 577
To delete Records from within the Web Views: ..................................................... 577
To delete Records using VIZOR Admin: .............................................................. 578
Deleting Many Records ....................................................................................... 578
Logons Editor ........................................................................................................ 579
Logging Off Users ............................................................................................... 580
Setting the Monitor Interval ................................................................................ 581
About the Integrity Editor ....................................................................................... 582
Remove Locks ....................................................................................................... 582
Locks on Project Definitions .................................................................................. 582
Locks on Users and Logon Sessions ..................................................................... 582
Chapter 38 - Integration with Other Systems ........................................... 610

Chapter 37 - Importing Data .................................................................... 592

About Importing Data ........................................................................... 593
What Can You Import? ........................................................................... 594
How Records are Created .................................................................... 597
Before You Import ................................................................................. 598
Add fields for imported data ................................................................. 599
Create a Number field to hold imported IDs or record numbers ....... 599
Create users and contacts ................................................................. 599
Customize VIZOR choice lists to match the imported data .......... 599
If you are importing text files ........................................................... 599
Back Up Projects ................................................................................. 600
Log off users ....................................................................................... 600
The Self Service Import Assistant ..................................................... 600
Importing Issues into a Source Table ................................................. 604
Combining Multiple Source Tables ................................................... 606
Importing Issues from Projects ......................................................... 606
Creating Queries to Merge Source Tables ..................................... 606
Mapping Import Fields ...................................................................... 608
Mapping Text Fields ......................................................................... 608
Mapping Memo Fields ..................................................................... 608
Importing Choice Lists .................................................................... 608
Importing Users, Submitters, and Contacts ................................. 609

Validating Integrity of Fields ................................................................ 583
Validating Relationships ................................................................... 584
Validating Integrity of Issues ............................................................ 585
Enabling Auto Repair ......................................................................... 585
Releasing Databases .......................................................................... 586
Uploading Large Attachments ............................................................ 586
Fixing 404 Errors ................................................................................ 587
Notes .................................................................................................... 588
Finding the current version ................................................................. 588
Chapter 39 - VIZOR License ................................................................................. 613

Viewing Your License Information ................................................................... 613
  Number of Licenses ....................................................................................... 613
  License Type .................................................................................................. 614
  Expiration Date ............................................................................................... 614

Entering License Keys ....................................................................................... 614

Reserving Licenses ........................................................................................... 615

Chapter 40 - VIZOR Projects ............................................................................. 617

What is a VIZOR Project? .................................................................................. 618
  Project Structure ............................................................................................ 618

Creating Projects ............................................................................................... 618

Copying Definitions and Styles ......................................................................... 619
  Why copy styles and notifications? ................................................................. 620

Building a Project Template .............................................................................. 620

Deleting Projects ............................................................................................... 621
  To delete a project: ......................................................................................... 621

Editing Project Properties .................................................................................. 621

Project Location ................................................................................................ 621

Definitions Database ......................................................................................... 621

Database Engine ................................................................................................ 621

Groups Allowed to Open Project ...................................................................... 622

Current Users .................................................................................................... 622

Chapter 41 - Planning and Deploying a Custom Project ................................. 624

Planning ........................................................................................................... 624

Implementation Roadmap .................................................................................. 626
  Step 1. Create a project .................................................................................... 626
  Step 2. Define user groups and create user accounts .................................... 626
  Step 3. Define and generate Web views ......................................................... 626
Step 4. Define field dependencies (optional) ................................................................. 626
Step 5. Define a workflow (optional) ............................................................................... 627
Step 6. Define Service Level Agreements .................................................................... 627
Step 7. Import existing data (optional) .......................................................................... 627
Step 8. Define and set up notifications ......................................................................... 628
Step 9. Go live ................................................................................................................ 628
Step 10. System maintenance (ongoing) ...................................................................... 628

Creating a Project ........................................................................................................... 629
How Many Projects Do You Need? ................................................................................ 629
Choosing a Base Project ............................................................................................... 629
Customizing Fields ....................................................................................................... 630
Notes ............................................................................................................................... 632
What Happens to Styles ............................................................................................... 632
Notes ............................................................................................................................... 632
When you rename a field ............................................................................................. 633
When you edit a choice list ........................................................................................... 633
When you delete a field ................................................................................................. 633

Creating Groups and Granting Permissions .................................................................. 634
The Built-in Groups ....................................................................................................... 635
Users ............................................................................................................................... 635
Admins ............................................................................................................................ 635
Features .......................................................................................................................... 635
Projects ........................................................................................................................... 636
Views ............................................................................................................................... 636
User Accounts ............................................................................................................... 636
Submit-only Views ........................................................................................................ 637
Importing User Accounts from Windows ...................................................................... 637
Predefined User Accounts ............................................................................................. 637
Generating Web Views ................................................................................................. 638
Parent-child relationships between issues? .................................................................... 638
Customized files from the base project? ....................................................................... 638
What if you don’t export a field? .................................................................................. 639
Queries ............................................................................................................................ 639
Chapter 42 - Customizing VIZOR .................................................. 645

Power Customizations ................................................................. 646
About the Databases ................................................................. 646
  Main Records Database ......................................................... 646
  Project definitions database ................................................. 646
  Users database ..................................................................... 646
Advanced Web View Settings ................................................... 647
Logon Page .............................................................................. 648
  Simplify the URL .................................................................. 648
  If Not using Integrated Authentication - SSO ......................... 648
  If mostly using Integrated Authentication ............................... 649
Total Effort Time ..................................................................... 649
  Displaying the Total Effort Time in another tab ..................... 650
Creating an Attachments Field ................................................. 652
To create an attachments field: ............................................... 652
Customizing URL Buttons ....................................................... 653
Customizing Standard HTML Reports .................................... 656
  Changing the CSS Styles ....................................................... 657
  PlaceHolders ..................................................................... 657
Optional behaviours In HelpDesk ............................................ 659
Timestamp Fields ..................................................................... 659
  Customizing Timestamping .................................................. 659
Enabling Timestamping in New Projects ................................................................. 661
Adding Timestamping to a New Field .................................................................... 663
Timestamping with One Memo Field .................................................................... 664
Changing the Format of Email Attachments in Automated Notifications ........... 666
  Format Type constants: ...................................................................................... 666
Attaching Information ............................................................................................ 668
Adding Custom Mail Contents .............................................................................. 669
Example Macros .................................................................................................... 671
  Function to return a string: .............................................................................. 671
  Function to return the contents of a text file: ................................................. 671
  Function that takes the revision history as an argument and extracts a field value: ...... 672
  Related Topics .................................................................................................. 673
Adding Notification Reports .................................................................................. 674
  To create an .rpt file for your notification report: ........................................ 675
Submit-only Views Without Persistent Cookies .................................................... 676
Replacing Logos .................................................................................................... 677
Summary List Toolbar .......................................................................................... 679
Summary List Header ............................................................................................ 680
Summary List ......................................................................................................... 681
Tabs ....................................................................................................................... 682
Form ....................................................................................................................... 683
Field Captions ...................................................................................................... 684
Form Elements ..................................................................................................... 685
Command Bar ....................................................................................................... 686
About Branding Dialogs ....................................................................................... 687
Common Styles for All Dialogs ......................................................................... 688
Attachments Dialog ............................................................................................ 689
Reports Dialog ..................................................................................................... 690
Revision History Dialog ....................................................................................... 691
Options Dialog ..................................................................................................... 692
Contacts Dialog .................................................................................................. 693
Password Dialog .................................................................................................. 694
Chapter 43 - Databases ................................................................. 703

Overview.................................................................................. 704
DAT Database............................................................................. 705
  Main Tables ............................................................................ 705
Definitions Database................................................................... 707
  Main Tables ............................................................................ 707
Users Database .......................................................................... 709
  Main Tables ............................................................................ 709
Global Databases ....................................................................... 710

Chapter 44 - Archives & Backups .................................................. 712

Archiving Data........................................................................... 713
  Determining what records to archive....................................... 714
Back Ups..................................................................................... 715
  What and When to BACK UP................................................ 715
  Backing up Records Data ...................................................... 715
  Backing up System Data ....................................................... 716
How to Back Up Vizor Databases (databases in SQL Server) ...... 716
  Back up a complete Vizor Server installation........................ 717
  How to Back Up Attachments ............................................... 719
Locating databases ..................................................................... 720
Locating Attachment Files .......................................................... 720
  Web views ............................................................................. 720
  Backing Up the Main Records ............................................... 721
  Backing Up Projects ............................................................. 723
  Backing Up the Users Database ............................................ 724
  Backing Up System Files ...................................................... 725
  Backing Up Web Views ........................................................ 726
Automatic Backups ............................................................................................................. 727
Performing Hot Backups ..................................................................................................... 728
Restoring Backups ............................................................................................................. 729

Chapter 45 - Relocating A VIZOR Installation .................................................................. 729

About the Relocation Wizard .............................................................................................. 730
Related Topics ........................................................................................................................ 730
Before You Relocate ............................................................................................................ 732
Check Permissions ................................................................................................................ 732
Close all copies of VIZOR Admin and the Web View Editor .................................................. 732
Relocate Projects .................................................................................................................. 732
Back Up ................................................................................................................................ 732
Log Off Users ........................................................................................................................ 732
Related Topics ........................................................................................................................ 733
Relocating VIZOR .................................................................................................................. 734
If Something Goes Wrong .................................................................................................... 735
Updating Client Programs ..................................................................................................... 736
Enabling VIZOR after Relocation ......................................................................................... 737

Index ................................................................................................................................... 738
ASSETS, PEOPLE AND ORGANIZATIONS/LOCATIONS

VIZOR is designed around the concepts of People, Assets and Organizations/Locations.

VIZOR helps you manage your assets and how they are used by people and the organization throughout time.

Organizations and locations are related concepts that are managed separately depending on your needs.

If you use VIZOR for managing your organization’s internal assets, you may have a single Organization with one or many locations.

Alternatively, if you use VIZOR for managing your customer’s assets, you may have multiple organizations each one with one or many locations.
ASSET CLASSES, ASSET TYPES AND ASSETS (INSTANCES)

In VIZOR, an asset represents any type of resource assigned to a person or organization. An asset can be an instance of an installation of a Software Application, a physical device such as a laptop or desktop, it can also be equipment like a projector, or even non-physical assets like a virtual machine or access to a Cloud Software Application.

Assets in VIZOR are often but not exclusively IT Assets. Due to being highly configurable, Organizations use VIZOR to track all types of assets that are valuable to them.

An Asset, also known as an instance of an asset, has a unique life-cycle that can be traced and managed with VIZOR. Each asset has a specific life cycle that often looks like the following:

- start with a **request** to get the asset
- follow with the workflows and **approvals** to purchase the specific asset
- the **purchase** process to obtain it
- the arrival of the asset to the organization
- the **allocation** of the asset to a person, location, department or project
- the **provisioning** of the asset to the intended user or location
- the **de-provisioning** of the asset after used or when **reallocated**
- some possible cycles of **configuration** or **repair** of the asset
- and usually finished with the **retirement** or **disposal** of the asset
ASSET CLASSES

Assets are first categorized into Asset Classes. Asset Classes define the top-level type of assets and allow your organization to manage asset types in a structured way, with general categories such as “software” and “computers”.

Typical examples of Asset Classes are:

- Software
- Computer
- Consumables
- Document
- Hardware
- Network Share
- Telecom

Can I customize the Asset Classes?

You can hide asset classes that are not in use by your organization.

You can rename the existing classes to align to the needs of your organization or industry, and you can also create your own asset classes.

Unlike Asset Types, Asset Classes do not have any specific life-cycle, behaviours or business rules and they serve more to categorize or group the Asset Types they contain.

ASSET TYPES AND SERVICE TYPES

The next level of categorization is the Asset Type or Service Type. An asset or a service is always created as an instance of an Asset or Service Type. Every Asset/Service must come from an Asset/Service Type.

The Asset/Service Type defines the exact kind of asset it is and establishes the main characteristics of the asset or service such as:

- The Life-Cycle of that asset, from procurement to retirement
- The Actions to execute when provisioning or de-provisioning the asset/service
- The Approvals and workflows required along the life-cycle of the asset/service
- Costs and other purchase information
- Depreciation calculations
An Asset Type is similar to a template of an asset/service, and in fact many attributes of an asset (instance) are inherited from the Asset Type.

Typical examples of Asset Types are:

- Microsoft Office Software
- Desktop computers
- Laptops
- USB Keys

An Asset/Service Type always belongs to an Asset Class. You cannot have an Asset Type that does not belong to an Asset Class. However, you can move an Asset Type from one class to another.

Examples of Asset Class -> Asset/Service Type -> Asset hierarchies:

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Asset/Service Type</th>
<th>Asset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td>Desktop</td>
<td>HP Envy 750 SN:4536-45645</td>
</tr>
<tr>
<td></td>
<td>Laptop</td>
<td>Dell Inspiron SN:RT36-43242</td>
</tr>
<tr>
<td>Hardware</td>
<td>Projector</td>
<td>Epson PowerLite SN:JHFY-4578</td>
</tr>
<tr>
<td></td>
<td>External Drive</td>
<td>Seagate Backup Plus SN:48-JHG-7856</td>
</tr>
<tr>
<td></td>
<td>Monitor</td>
<td>Dell 55 E5515H SN: OHH987IH</td>
</tr>
</tbody>
</table>
CHANGING THE ASSET TYPE

In some cases it is necessary to allow changing the asset type of an asset. For example, if you want to change a computer from being a “Desktop” to a “Laptop”.

In general, if you are changing the asset type of an asset you must consider that the old asset type may have different settings and life-cycle rules, defined in the record of the asset type.

- In the Web View Editor, select the Web view "Resources / Library".
- select the Fields area on the left and then the General tab.
- Export the field Asset Type Full to the Web view (move to the right).
- Generate the Web view.
- You should be able to edit the asset type in the view using that field.

*Note: We suggest to never delete asset types if they are not being used. Instead, change the visibility of the asset type to “Visible = No”

AUTOMATICALLY CHANGE ASSET TYPE OF DESKTOP TO LAPTOP

VIZOR will automatically change asset types of Desktop computers to Laptop based on existing computers with asset type set to "Laptop". ALL Desktops will be changed to Asset Type "Laptop" if there is at least one Laptop with a combination of Manufacturer and Model Number that Desktops match with.

The model is determined by checking both the manufacturer and the model. For this process, the manufacturer can be empty but the model is required. This process runs overnight in the app set up task and right after computers are imported.
In practice, a sample Laptop asset can be created so that subsequent imports are automatically changed to the Laptop Asset Type. This sample asset can then be deleted if needed.

ASSET FIELDS

The fields used to manage an asset can be determined by the Asset Class / Type. Webview Editor and Workflow tools detailed in this guide can used for this purpose.

By default Asset Fields are arranged by the following Tabs

**Generic Asset**
- Overview
- Details
- Actions
- Allocation
- Purchase Details
- Source

**Bulk Asset (Consumerable)**
- Overview
- Details
- Bulk Allocation
- Purchases

**Computer Asset default tabs**
- Overview
- Details
- Actions
- Computer Details (Hardware)
- Allocation
- Purchase Details
- Source
- Installations (Software Inventory)
ATTACHMENTS AND DOCUMENTATION OF ASSETS

Related documentation such as purchase orders, invoices and leasing documents can be uploaded against an asset (Overview tab) or against a Purchase (Details tab, as shown above). Files can be uploaded to VIZOR directly, or linked to a file storage system such as SharePoint.

Once the file is attached or linked, users can search for asset records that contain a specific name of file or link.

This may be used in checking compliance, as it is the case for the Certificate of Destruction.

CATEGORIZING ATTACHMENTS

You may also want to categorize specific types of attachment. For example, in the Software Licenses view, each License record has the following fields in the Documents tab:

- Contracts
- Invoices
- Instructions

This helps users to file the right documents in an organized manner as well as query, report or create notifications for when specific documents are not attached.

An example of this is the Certificate of Destruction in the Asset Disposal tab, used for a retired asset.

ASSET LINKED TO OTHER ASSETS
Assets can be linked or allocated to other assets. For example a Monitor and Keyboard could be allocated to a desktop computer.

This is controlled by the Asset field *Allocated to Device / Computer*.

**ADD NEW ASSETS SETTINGS**

A wizard will allow you to define which fields will be available when adding assets to VIZOR. If you don’t want to enter that field’s information for the assets you are entering, you can set it to No. You may find this wizard by clicking in the link directly at the top of the Add Asset window.

Based on the fields selected above, VIZOR will then allow you to define which fields should have unique values per asset (Serial Number and Asset Tag are always unique). For the fields that are set to No here, VIZOR will allow you to enter the same value for all the assets you are entering at once.
These settings will be saved for the next time assets are entered, but you will be able to change them as needed.
ADDING FIELDS TO THE ADD ASSETS WIZARD

In order to add additional fields to the add new assets:

- Use the Web View Editor to navigate to the Resources / AddGrp Web view.
- Export the additional fields that you need into the “Overview” tab.
- Set the Column Span field attribute to 2 and the CSS Class field attribute to MemoFieldWidth by clicking on the “Attributes” button.
- Regenerate the Web view.
ADD NEW ASSETS

Based on the settings in the previous wizard, the Add New Assets dialog will show the appropriate fields to enter.

For the fields that are not unique per asset that were selected on the first page of the previous wizard, but not on the second page, these will show at the top of the dialog.

For the fields that are unique per asset that were selected on the first page of the previous wizard, as well as on the second page, the entry field will show one at a time. Once it has been entered, click on the “next” button to move the entry to the box below to easily view and track the information that has already been entered, then the next field will appear. These fields can be entered manually or scanned in with a USB or Blueooth bar code scanner.
IMPORTING ASSETS FROM AN EXCEL FILE

1. On your Home Page, click on the “Assets” link to access the “Assets” web view:

2. Once in the “Assets” web view, click on the “Import” button in the right tool bar to open the Self-Service Import assistant
3. Once the import assistant opens, follow the instructions below:

a. Download the template from the link provided and fill in the user information to import.

b. The template contains a series of columns that can be filled in with your asset information. The columns in blue are required, all other are optional. Filling as much information will help you to better categorize your assets.

![Configuration settings for importing Assets from an Excel file into VIZOR.](image)

- **Asset type**: Defines the exact kind of asset it is and establishes the main characteristics of the asset or service.
  - For example – Computer, Desktop, Tablet, Cellphone
- **Unique ID**: This can be your organization's unique identifier for your asset, be it a model number or an arbitrary one you give to each one of them.

c. Click on the Import files button and upload the asset import template.

d. If the “Enabled” slider is set to No, set it to Yes

e. Once completed, if you aren’t planning to import additional assets soon, set Enabled to No

4. To update users or add additional information, simply repeat the process and fill in the template with the updated information. Upload the template to update the import.

5. Once the import is completed, the assistant will provide with a report of the asset import and the totals as follows:

- **Processed** – Indicates how many assets were read from the file.
- **Added** - New assets correctly added.
ASSET CHANGE HISTORY

VIZOR Tracks all changes which are made to data fields of an asset. This includes updates to Status, such as from In-Stock to Assigned. Purchase changes and inventory changes from network discovery. Change History of an asset can be seen by clicking on the History button in the asset tool bar.

Change History reports the date / time of the revision. The user, computer and IP address linked to the change. The value affected, the previous value and the current value.

See revision history, enabling/disabling and revision history, synchronizing sections of the document for more information on how to configure this functionality.
ASSET CONTAINERS

Asset Containers are a special type of assets that contain other assets. Most of the times, a Container represents a real, physical item that contains the included assets, like a box, a pallet or a bin. However, a container can also be virtual or immaterial, useful to create a set or logical group of the assets.

For example, you can organize assets of various types into a container, and then allocate the container to someone for transportation or for assigning the included assets to others.

Typical Usage:

1. Create a type of asset that is a container if needed. There are some default container asset types like the Chromebook Container.
2. Create one or more instances of these containers. You can use the button Add Assets in the Assets Web view.
3. Set the person responsible for the container by setting the person in the Allocate to Person field, just like any other asset.
4. Add assets to the container.
   - You can add one asset at a time by setting the Container field in the Allocation tab. You can also add multiple assets by running a query that includes all or more of the assets to add, selecting the assets using the last column of the Summary List and then clicking Mass Update to set the Container field to all the assets.
5. The person responsible of the container can view the assets inside by selecting the query “Assets in My Containers”.

Example scenario with Chromebooks.

A school is receiving Chromebooks for the students and the supplier is sending them in containers. A Chromebook Container is a type of Asset Container and it has all the Chromebook devices for the students of a given class (school class).

The Containers can be created manually or imported using the pre-created template for importing Chromebook Containers. An administrator can log into Assets and select the query “Containers” to see all the containers in VIZOR, regardless of who is responsible for each one. If not already done, the administrator can assign a Chromebook Container to a teacher.
Digital Asset are images, photos, patents, creative files, video, audio, presentations, documents, etc. that are valuable for the organization.

Tracking these assets in VIZOR may be important:

- For Accounting, to know the value of the collective and their existence
- For Purchasing, to know when licenses or copyrights would expire and be able to renew them.
- For users, for finding them and knowing where the secure repository is.

VIZOR includes an Asset Class for Digital Assets. You will also find several built-in Asset Types such as:

- Digital Currency / Cryptocurrency
- Logo
- Music
- Patent
- Photo
- Trademark
- Video

With VIZOR, you can track the purchase and the renewals of a Digital Asset, and configure alerts to remind you or stakeholders of the renewals.

Use the Asset Expires field if the asset cannot be used after a given date.

Set it to Yes and enter the Expiry Date in the field.

<table>
<thead>
<tr>
<th>Asset Expires?</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Will Expire On:</td>
<td>3/1/2025</td>
</tr>
<tr>
<td>Comments:</td>
<td>Protected Logo design</td>
</tr>
</tbody>
</table>

You may also want to use the following fields for Digital Assets:

- Confidentiality Level
  Many of them being documents, the content could need to be highly protected, like patents

- Backup Location:
  Where is a backup copy of it?

- Business Justification
Why does the business need it?

- Attachments
  Add the link to the actual file or folder.
  If your organization does not have a centralized Document Management system, you may want to use VIZOR as the repository, in which case, upload the files.
  If your organization has a centralized Document Management system, just link the document into VIZOR.
ASSET BASELINES

VIZOR allows you to compare changes made to an asset record against a baseline. VIZOR will track and compare all the changes of the current version of the asset record against the baseline.

To use the baseline, first set or enable the baseline in the asset record.

Go to the asset and to the **Baseline** tab.

It will be clearly indicated if no baseline has been set yet, as above.

Click on Set Baseline and save (OK or Apply).

The Baseline tab will show the baseline timestamp as well as the changes of the current record vs the baseline.

If there are no changes, you will see as below:

<table>
<thead>
<tr>
<th>Overview</th>
<th>Details</th>
<th>Audit</th>
<th>Baseline</th>
<th>Actions</th>
<th>Computer Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clear Baseline</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Baseline Date:** 2/11/2019  11:15:53AM

**Baseline Value**  
**Current Value**

No changes have been made to the baseline.

Otherwise changes will be displayed as below:
Click on Clear the Baseline to remove the current baseline.

CLASSIFYING AND PRIORITIZING ASSETS

You can classify Assets in VIZOR according to confidentiality, risk and how important is for the business.

Use the following fields to manage appropriately these assets as well as incidents associated to the assets:

**Confidentiality Level**: High, Low, Medium. You can modify the possible levels. How much should the information inside be protected against unauthorized access and use?

<table>
<thead>
<tr>
<th>Confidentiality Level</th>
<th>Current Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

**Security Risk**: High, Low, Medium. You can modify the possible levels.
Priority Business Continuity: from Highly Critical to Standard. How important is this asset for the continuity of the business? You can modify the possible levels.

Risk Priority Number or RPN: this is an integer number, representing numerically the assessment of risk assigned to the asset. Useful when there is a need to further prioritize among assets of the same levels in critical situations or DRPs.

Environment: it also helps your team to define priorities. If the asset is in Production, it may need attention earlier than another one in Test/QA. It also helps identify assets that are specifically for Disaster Recovery use, like a mirror server. The criticality of these assets will vary depending on the related system. Default values are:
Besides indicating if an asset is for Regulatory & Compliance purposes, an asset may need to comply with specific regulations or standard. Use the area for linking **Standards and Compliance** documents for this purpose.
PERSONAL INFORMATION AND CONFIDENTIALITY

VIZOR helps you manage assets that may be delicate for personal information, confidentiality or similar regulations and compliance.

Elements that help you manage this type of assets are:

Confidentiality Level: High, Low, Medium. You can modify the possible levels. How much should the information inside be protected against unauthorized access and use? For example, in hospitals, the asset may contain patient information.

Query Data Protection Non-Compliance: this built-in query identifies retired asset that have Confidentiality Level higher than low and for which the Data Destruction Certified has not be confirmed. For example, this could prevent important hard disks from being discarded and not ensuring data is wiped correctly.

Relevant to Data Protection: if yes, regulations such as GDPR apply to the asset and reviews must be executed by the organization.

Deprovisioning Actions.

For Assets of confidentiality or privacy level higher than low, for example, you should document and preferably automate the actions needed to destroy or wipe out the sensitive data.

For example, create a HelpDesk ticket or VIZOR action to make someone responsible of the Destruction of the Data.
PREVENTING UNAUTHORIZED CHANGES TO ASSETS

Some assets may require additional control so that no changes are made without having a supporting Incident record, Problem record, Change record or Release record.

If you want to enable this control in a specific asset, set the field Changes Require Process Record to Yes.

If a user attempts to modify the asset record in VIZOR, the system will prevent her and notify of the need to indicate what record is associated to the update.

VIZOR will only allow saving when the fields Update Required for Record and Update Required for Record Type point to a valid, open record that uses the asset in question.
You may want to standardize and document checklists for assets. For example, when preparing an asset for deployment, you may want to ensure certain steps are taken. There are several ways of implementing this in VIZOR, one of them by creating a Checklist tab and Custom Single-choice fields.

In this case, you can follow these steps for adding Checklist fields:

1. Create a new tab in the Web Admin. You may call it “Checklist”, for example.
2. Using the Field Editor, add a new field, like “Joined to Domain” for example. Set the tab to be “Checklist”. For this case, you often add fields of Data Type Single Choice that use the global Choice Table “tblYesNo” with values “Yes” and “No”.
3. Make other changes as desired and click OK to save.
4. Create other fields as needed, for example “Named”, to document the computer was given a unique name.
5. In the Web View Editor, select the Web view where the Checklist will be visible, “Resources / Library” in this example.
6. Select Fields on the left and then click on the tab “Checklist”. You will see a list of the new custom fields you created on the left. This means the fields are not exported or available in the Web view.
7. Move the fields to the right and position them in the desired order (top to bottom and left to right, over 2 columns).
8. Click on “Generate View” button. This will apply the changes.

Removing checklist fields

If you want to remove a field from your checklist, you can simply remove it from the Web view.

1. In the Web View Editor, select the Web view where the Checklist will be visible, “Resources / Library” in this example.
2. Select Fields on the left and then click on the tab “Checklist”. You will see a list with the custom field to remove on the right. This means the field is exported or available in the Web view.
3. Move the fields to the left.
4. Click on “Generate View” button. This will apply the changes.

We only recommend completely deleting the custom field if you are sure you won’t be using it in the future, otherwise it is a good idea to keep it in case you want to use it after.
RELATING ASSETS AND SERVICE MANAGEMENT

VIZOR is an integrated tool of IT Asset and Service Management. VIZOR is designed so that these two functions can operate together or separate based on the organization needs.

VIZOR integrates IT Asset and Service Management with the following functionality.

View Related Helpdesk Issues

This option provides a quick view from within an asset to see all related issues reported against it. The button as shown below is located on the Details tab of each Asset.

View Related Computer / Asset

Within an Helpdesk issue, users can link the Incident or Problem record to a computer or asset. You can also view the details of the computer or asset related to the current issue by clicking on the asset icon next to the name.

For more information on syncing your data, refer to the latest concerned documentation guides.

Requestable examples:
  VIZOR – Integrating with ECM
  VIZOR – Integrating with AD
Determining problem and defective

VIZOR can be configured to flag problem and defective assets as a Lemon after a threshold of issues have been related to it.

Asset requests

VIZOR manages the entire request process of an asset. See Chapter 7, Service Requests.

Asset Provisioning Actions

Once an instance of an Asset is specified to fulfill the Service Request, Actions defined in the Provisioning Actions area of the Service/Asset Type are executed. You can customize the Actions that VIZOR will create, assign and potentially execute for each Service or Asset in the event of Provisioning. See Chapter 9, Asset Life-Cycle automated actions.
Vizor ServiceDesk (also known as Vizor HelpDesk) is a flexible, Web-based system for centrally tracking and managing help desk issues and calls. Because it is Web-based, it enables users to access the issue database from any browser, anywhere, any time. It also minimizes deployment effort because there is nothing to install on the PCs it supports.

Vizor ServiceDesk works like a Windows application rather than a set of static HTML pages that must be constantly updated and reloaded. This enables you to easily customize HelpDesk to suit the way you want to work. When you run a query, view an issue, or submit a new issue, HelpDesk dynamically updates its interface. It uses pop-up dialogs for tasks like generating reports and attaching files to records.

TERMINOLOGY

Standardization of terminology is of crucial importance for maintaining your teams working at their best. From logging, to resolution and closure, your team will find that throughout VIZOR, ITIL 2011 Edition process terms are used. Your workflows and processes are thus made clearer and fully consistent to ITIL 2011’s guidelines and requirements.

Below are but the central terms you will find to be key. Feel free to contact us for more information or to obtain a copy of the English glossary. The following terms are used to refer to HelpDesk components:

Projects are databases or knowledge bases. All Projects share user accounts, user group privileges, and the administration utilities, but each Project has a separate database.

Web views are customized views of Project databases. Each Web view is designed to meet the needs of a class of users. For example, employees who do not belong to the support department only need to see the issues they submitted, not all the issues in the Project database or the notes added by the support staff. Conversely, support staff need access to all the issue information in the Project database.

Incidents are unplanned interruptions to or reduction in the quality of a service.

LOGGING ON
Vizor HelpDesk contains three different views of the default HelpDesk Project. Each view shows a different set of issues and fields. For example, the Employee view shows only the issues and information entered by the user.

When you log on, HelpDesk displays the views you have permission to access. Access to views is controlled by user permissions, which are set up by the Vizor administrator.

In the default example, the admin and demo user accounts have administrative-level permissions and can open any view. The other accounts are role-based, and have restricted permissions and access to views. Use the role-based accounts to see how permissions and workflow rules control the issue tracking process:

- **HelpDesk** shows all issues and issue information. It enforces workflow rules and defines an issue lifecycle, and is intended for use by help desk staff. Use the following accounts to access the view:
  
  Logon accounts:  
  - admin (Password = admin)  
  - demo (No password)  
  - analyst (No password)  
  - group leader (No password)

- **Employee** enables employees to submit new issues and to check the status of existing issues. It shows only the issues and information submitted to the help desk by an employee. Internal information added by help desk staff is hidden.
  
  Logon accounts:  
  - employee (No password)

- **Report Issue** is a submit-only view that enables users to submit new issues to the help desk. The Report Issue view does not require a logon account. You can access it directly through a URL.
THE LIFECYCLE OF THE INCIDENT OR PROBLEM

When an incident or problem is reported using HelpDesk, it is passed on to support staff. The investigation of the issue, and any work required, is then performed in accordance with the organization’s issue-handling process.

In VIZOR ServiceDesk, the steps in the issue-handling process are implemented as a Workflow. Each step in the process corresponds to a Workflow value shown in the issue’s Progress field or Status. Support staff advance an issue through the process by changing this value. Control of the work is maintained by assigning different permissions to change the Progress field to different types of user. One can thus set security controls to allow only authorized staff to close records based on their role. For example, in the default process included in the standard HelpDesk installation, only group leaders can assign an issue to the rest of the support staff.

This diagram summarizes the process required to solve a simple issue using the default HelpDesk installation:
STATUS AND STATE

The **Status** field is a special field that reflects the life-cycle of the incident or problem record. The **State** field is associated, and it is automatically controlled by VIZOR, it is set to **Open** or **Closed**.

To change the mapping of Status values to State values, use the same editor. The choice table for the **Status** list contains an extra column that maps **Status** choices to **State** choices. You must complete this column when you add or edit the choices in the **Status** list.

![Choice List]

When you edit the **State** choice table, remember that the **Closed** choice sets the **Closed Date** and **Time** fields. So, for example, changing the choice text from **Closed** may confuse users.

**Notes**

If you edit the **Status** choice list, check that workflow rules based on the **Status** field are still correct for your needs.

IMPACT, URGENCY AND PRIORITY

Aligned with ITIL, an Incident, Problem, Change or Service Request may have fields that help track the Impact, the Urgency and the Priority of the process in question. These fields’ changes are recorded, timestamped and sourced to either the system agent or the particular userID responsible for the change to the benefit of future historical verifications.
The Impact measures the business criticality of the record, the extent to which an Incident, a Problem or the absence of a Service or Asset (not provisioned) leads to the distortion of business service levels.

Urgency is a measure of how long it will be until it has significant business impact.

Priority is a category that identifies the relative importance of an incident, Problem, Service Request or Change. Priority is normally calculated based on Impact and Urgency but it can be overridden under special circumstances.

Priority is set automatically based on the Priority Matrix, which can be modified to your organization needs in the Business & Workflow Editor.

If a user needs to override the priority, and she is authorized to do so, the field Override Priority can be used.

When used, the user needs to select the justification for the action.

By default, VIZOR includes some common justifications, but your organization may want to review and define which ones are valid in your environment.

To ensure the field is used only by authorized users, control access to the field Override Priority just like with any other field (see controlling access and security of a field).
### Conditions & Actions for the Business Rule: Priority Matrix

Select a row and click on a cell to update the values used in the conditions and actions.

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Impact</th>
<th>Urgency</th>
<th>Override Priority</th>
<th>Actions</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>High</td>
<td>&lt;Empty&gt;</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>&lt;Empty&gt;</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>High</td>
<td>Medium</td>
<td>&lt;Empty&gt;</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
<td>&lt;Empty&gt;</td>
<td>Medium</td>
<td>Medium</td>
<td></td>
</tr>
</tbody>
</table>
# ASSIGNING ISSUES

When an employee submits a new issue through HelpDesk, it is recorded with a progress status of New indicating it is awaiting assignment. It can then be viewed by a group leader and assigned to an analyst based on the information supplied.

# CLAIMING ISSUES

While an issue is marked Assigned, it is waiting to be claimed by a help desk analyst. An analyst claims an issue by marking it In Progress, which indicates that the analyst is working on the problem.

# CREATING AND OPENING INCIDENTS OR OTHER ISSUES

**Manually via...**

- **Service Desk agent:**
  
  Certain submit-only views may be set out-of-the-box for letting contacts and other page viewers submit incidents or even access the knowledge base without requiring login credentials.

- **User authentication:**
  
  Using your user’s credentials and navigating to the Submit Helpdesk Ticket or the Helpdesk Incidents & Problems views.

**Automated via...**

- **Inbound Email:**
  
  See integration rules as per the Incoming Email Rules section in chapter 17.

- **System alert:**
  
  Choose the given notification alert you want and pair it with a “Create New ticket” integration rule. On checking for new alerts, set your integration rule’s condition to pick up only on those notifications with the use of tags for example to minimize false positives in that rule.

**Rapid capture**
1. The Copy Issue feature button on the summary list transforms any record displayed into a template for faster capture if you already know the seed issue has the information you need. The activity log, emails and other details by default do get removed so it really is template for a new incident or issue.

2. The Copy as Problem will create a copy of the issue but of the type Problem rather than incident. It is helpful to bring already set information while expanding on it.

3. The Copy as Child feature button will create a copy of the issue while at the same time setting the new issue as the child of the seed issue which then becomes a parent to the former.

WORKING WITH ISSUES

In its standard configuration Helpdesk gives analyst users direct access to the software and hardware information stored in the Vizor Assets database. This provides a quick and easy method of collecting the extra information analysts need to investigate an issue, even when the person who reported it is not available.

In addition, with the PC-Duo Remote Control application, analysts can view and take control of the PC where the problem occurs, so that they can help even the most inexperienced users.

When setting up the Help Desk categories and ticket customization, almost any configuration is possible in VIZOR.

It is likely that you will want to make changes to the values in the fields Service Type / Category / Subcategory. Refer to the section on updating Choice Lists / Choice Tables.

To distinguish from service requests in Helpdesk, VIZOR has a field called Ticket Type where such information is declared for any given record. Just as fundamental and essential to handling issues efficiently, VIZOR uses many fields to create a tiered categorization of issues to further differentiate issues based on a) the Service Type, b) the Category, c) the Subcategory, d) the Computer, and e) the Asset. Together with the fields Department, Location, Source and many more, VIZOR puts front and
center a very flexible yet powerful framework to track incidents and issues with a very high or a very low amount of resolution at will. In particular, As well, note that the field with the display name is “Source” for incident management and other tickets refers to the several ways the submission or the origin of the ticket is tied to (e.g. Email, Web, Telephone). It is an out-of-the-box field that can be edited to include more choices as per reference in the VIZOR administrator’s guide on the topic of editing *ChoiceLists*.

For the authorized support staff, they are by default entitled to the use of several more fields such as a) urgency, b) impact, c) priority. To calculate the latter, each of the former can be set to carry a certain weight, an associated factor. The default priority matrix can be modified by administrators through the Workflow Editor in VIZOR’s Web Admin. It is a crucial tool to enable a more objective, deterministic calculation of the importance tied to a particular issue.

**CLOSING ISSUES**

When a problem is fixed or work on an issue is complete, analysts change its *Progress* status to **Resolved** to indicate work is closed. On saving any change to these fields, an automatic timestamped entry is added to the revision history. The same is true for any save to the incident or issue category information fields like the *Resolution Code*. On closure a *Closure Timestamp* is produced.

**ABOUT RELATED INCIDENTS**
To better manage and maintain the relationships between incidents and problems, VIZOR makes use of the tab Related Incidents. Link, unlink or edit any of the listed tickets through the buttons on the right.

RELATED ISSUES AND CHILD ISSUES

Often, a single problem can give rise to several different issues. For example, a server going offline could produce issues on problems with e-mail, access to the Internet and users being unable to access their files. If you have multiple issues resulting from the same underlying cause, you can link and manage them using the Child Issues tab individually. You may also want to take advantage of the summary list’s feature buttons (when permissions are granted to oneself) to create a copy of any given issue. For more information, refer to the CREATING AND OPENING INCIDENTS OR OTHER ISSUES section above or the PARENT-CHILD RELATIONSHIPS BETWEEN ISSUES further down.

LINKING SERVICE TYPE AND CATEGORY

Service Type and Category in Help Desk can be associated to one another through Workflows. To do this:

1. Go to Web Admin following a link like this: “mycompany.vizor.cloud/connectadmin” and log in with an admin account.
   - Optional if adding a new Category choice:
     I. Navigate to the “Fields” tab and click on choice list button to the left of the screen.
     II. Select the Help Desk Project and the “Category” or “Problem Area” choice list.
     III. Add a new choice, name it and select and ID from the ID drop down.
     IV. make sure the choice list is updated by clicking the “update now” button at the right side of the choice list editor

2. Navigate to the “Workflow” tab and select “Help Desk” in the project dropdown.

3. In Business Rules, look for an out of the box “Possible values” rule named “Service Type - Problem Area"
4. Click on the rule and make sure the following values are set like this:
   - Condition Fields: Service Type
   - Action Fields: Category
   - “Enable in all Web views of the project” box: Checked.
- Evaluate when users change field values: Checked.

5. Select or add rows on the business rule and click on each cell to update the values used in the conditions and actions according to your project. Here are some examples:

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Type</td>
<td>Problem Area</td>
</tr>
<tr>
<td>E-mail</td>
<td>System - Email; System - Other</td>
</tr>
<tr>
<td>Hardware</td>
<td>HW - Disk; HW - Keyboard; HW - Memory; HW - Monitor; HW - Mouse; HW - Other</td>
</tr>
<tr>
<td>Network</td>
<td>System - Network; System - Other; Apps - MS Word</td>
</tr>
<tr>
<td>Software</td>
<td>Apps - Microsoft Dynamics CRM; Apps - MS Excel; Apps - MS Outlook; Apps - MS Word</td>
</tr>
</tbody>
</table>

6. Once you are done setting up business rules, click the “Apply” button next to the project dropdown.

8. Wait until the message “Changes to workflow were successfully applied” pops up and click ok.
9. Make sure to clear cache on your browser before logging in to see changes properly applied to VIZOR.

*Note: Category and Problem Area may be used interchangeably and will show as one or the other depending on the level of your VIZOR customization.*
Tasks pertaining to a given Incident or Problem record assist in establishing clear procedures or steps related to the issue. They help when the incident requires either more than one person to work on it or specific steps to be documented or followed.

Tasks can be edited, assigned, created and set to be performed in sequence or in parallel depending on what one needs as per the illustration. In a sequence, the dependencies are created so the next task to be marked as completed needs the ones that come before it to be just as so.

Your organization can also use Tasks for Checklists, to save time and standardize procedures.

**Hint:** add Tasks to template issues, so they are copied over and help you when you create a new issue based on the template.
By default the Tasks tab shows a grid of the tasks of the issue:

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Name</th>
<th>Assignee</th>
<th>Status</th>
<th>Due Date</th>
<th>Start Date</th>
<th>Time Spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triage</td>
<td>Help Desk Analyst</td>
<td>Not Started</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Level Diagnostic</td>
<td>Admin Their</td>
<td>Not Started</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To change the columns in this grid, modify the Tasks Summary List Layout in the Admin > Project > Layout Editor. The Summary List Layout Tasks doesn't have to be exported to the view, HelpDesk in this case, however, the fields for the columns need to be exported to the view.
INTEGRATING WITH CMDB’S

Visualize HR information, employee status, allocated assets and ongoing tickets and issues related to either. It will paint a much clearer picture for your team.

Bridging the gap by bringing in the information into fields like “Affected Computer” “Affected Asset” along side all the information that can be brought in from AD and many other sources will do the heavy lifting for your team when investigating and diagnosticating factors involved in incidents and problems.

For more information on syncing your data, refer to the latest concerned documentation guides. Requestable examples:

VIZOR – Integrating with ECM
VIZOR – Integrating with AD
VIZOR – Integrating with Vector Discovery
VIZOR – Integrating with Lansweeper
VIZOR – Integrating with RecoverKeys

RELATED SERVICE REQUESTS
The helpdesk uses the tab and fields for Related Service Requests to keep your team informed of any pending item, to grant the ability to submit from the very incident or ticket, a related service request as well as the ability to edit or even remove such requests. Merging the self-service with your helpdesk area this way encourages a sharing of information which will reflect in your team’s ability to monitor the progress of any given incident or issue. For more information on Service Requests, see the dedicated chapter on Service Requests further below.

RELATED CHANGE REQUESTS

To keep track of incidents stemming from Related changes, VIZOR makes use of the tab Related Changes. Not only does it keep your team aware of any requests but it also allows for keeping tabs on the tickets for
issues caused by a given related change. Your team will gain insight from the repercussions of implementing such changes and further clarify the picture of known interactions or known errors across the board.
INTEGRATION WITH THE KNOWLEDGE MANAGEMENT

Finding a quick diagnostic requires a fast search for information. With the Diagnostics tab, VIZOR will help leverage existing information in the ticket, and the knowledge base to quicken your team’s ability to pin-point relevant articles. To do this, VIZOR picks up on the current values captured in the field Category and Subcategory in the overview tab and in the Diagnostics tab’s fields Version and Web Browser.

Having captured these fields, click on the Search KB button. This will bring up the results into view which were found to contain the matching parameters. Along with the field Subcategory in the KB articles, the other fields are also all optional in looking for potential matches. However, just one match is enough.

MORE ABOUT WORKFLOW

The preceding exercises demonstrated how the workflow controls the steps an issue follows as it progresses through the help desk process. They also showed how each step in the process is represented by a status value in the Status field.

At each step in the process, an issue is also considered open or closed. Open issues are still active, or awaiting information. Closed issues have been resolved (fixed) or dropped (the problem can’t be fixed or reproduced). The read-only State field indicates whether an issue is open or closed.
The default workflow implemented in Vizor ServiceDesk is slightly more complicated than the simple process shown previously.
MONITORING HELPDESK ACTIVITIES

Vizor ServiceDesk automatically tracks the progress of issues through the issue lifecycle. VIZOR automatically creates a unique identifier for each incident. It is a fundamental tool for tracking and monitoring incidents and your team’s response. It is called the Issue number or Issue ID and is automatically generated by the system. This enables users to check on the progress of issues and also provides reporting capabilities that allow managers to track and monitor support activities.

Using the previously mentioned priority overriding, assignment to workteams, automatic escalation rules, the Round-Robin auto-assignment and the closure sequence features – along with manual assignment by authorized staff – means VIZOR has all you need to determine or change the order in which incidents or issues are acted and by whom.

REVISION HISTORY

VIZOR ServiceDesk maintains a Revision History for each issue. The Revision History is a list of all changes made to the issue after it was first submitted. Each time you save an issue, Helpdesk records the changes in the Revision History. Each revision comes with a timestamp of the time, date, origin of the change, the field changed and a specification of both the previous and new value for the given field automatically. At the core, this logging of incidents and other records is protected from alteration after-the fact as it is only modifiable by the system so as add entries and never produce any removal of remove entries.

DUE DATE

Your organization may want to use the optional Due Date field of a ticket, incident, or problem. The Due Date will help the team and the owner of the ticket to prioritize and adjust to specific deadlines and commitments.

To use it, simply export the Due Date field to the HelpDesk web view. You can also export this field to the Self-Service view if you want to allow users to specify this date.
MAXIMUM TICKETS PER DUE DATE

If you are using the Due Date, you may want to set a limit to the maximum number of tickets that are committed to the same date. Define the maximum based on the capacity of your team.

To configure the Maximum number of HelpDesk tickets per Due Date:

1. Go to the Configuration view.
2. Select Settings on the top right.
3. Identify the setting in the list or type "Maximum" in the search box.
4. Click to open the setting, confirm the project is HelpDesk and update the value to the desired limit.
5. Click OK.

The setting is active immediately and users will not be able to submit records or tickets for the same Due Date if the maximum is reached.
If a ticket with a given Due Date is resolved, users are allowed to submit again until the maximum is reached.
BLACKOUT DATES

If you are using the Due Date, you may also want to set blackout dates for the due date. You can use these to take into account holidays, special events, vacation periods, etc. When users submit requests via VIZOR and a due date is specified, if the user selects a blackout due date a message is displayed and the request cannot be submitted until a valid date is selected.

Administrators can define any number of blackout dates.

To configure the blackout dates for HelpDesk tickets:

1. Go to the Web Admin > Fields > Choice Lists.

2. Select HelpDesk in the project list and Blackout Dates in the Choice List.

3. Enter the blackout dates or date ranges as choice values in the Blackout Dates choice list.
The dates can be of two types: a single date or a date range.

- **date**
  
  single date entered using the format *yyyy/mm/dd*

- **start date -- end date**
  
  Enter the date range using the syntax:

  *Start date -- End date*

  Use two dashes to separate the dates and enter each date using *yyyy/mm/dd*.

---

### ENABLE BLACKOUT DATES

1. Go to the Configuration view.

2. Select Settings on the top right.

3. Identify the setting in the list or type “Blackout” in the search box.

4. Click to open the setting, confirm the project is HelpDesk and set 1 in the value to enable it.

5. Click OK.
The setting is active immediately and users will not be able to submit records or tickets with the Due Date being a blackout date. Records or tickets that have a Due Date already set are not affected.

TOTAL ACTIVE TIME USING STATUS REPORT

The "Total Active Time using Status" report calculates the total duration working hours per ticket by using the Status field known also as "Progress" or "Substate"). The process checks all tickets in State "Closed" and calculates the total time for each "Active" status change. The duration is set in working time (Hrs) and paused time (Hrs) in fields per ticket, after calculating the time the record has been historically in an active period or inactive period.

Whenever the record is in a Status that is considered "Active time", the working time elapsed in that status will be added to the field "Duration Working Hrs". If a ticket is closed and reopened or goes through cycles of inactive times and then re-enter active times, the time is accumulated for each cycle.

Whether a given Status is considered "Active time" or not can be defined in the "nActiveTime" in the "tblSubstate" table under the Help Desk def database. The values to set are: 1 = Yes, 2 = No.

<table>
<thead>
<tr>
<th>nID</th>
<th>tName</th>
<th>nDependentFields</th>
<th>nActiveTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>To Be Verified</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Canceled</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>In Progress</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Resolved</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Waiting</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Assigned</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>NULL</td>
<td>NULL</td>
<td>NULL</td>
<td>NULL</td>
</tr>
</tbody>
</table>

By default, statuses that map to a State "Open" are active and the statuses mapped to State "Closed" are not active.
HOW IS THE ACTIVE TIME CALCULATED?

The active time and the records are related through the predetermined SLA in the following way:

- If the record has an SLA, it uses the associated service level working hours for calculating the total time.
- If the record does not have an SLA, it uses the working hours of the global SLA for the ticket service type, or the first available global SLA if there is no global SLA for the service type of the ticket.

The fields “Duration working hours” and “Paused Working Hours” can be used to display the Total Active Time information. You can add the fields into the web view so they are visible in your records or access the information by selecting the out of box list layout called “Total Active Time”.

RUNNING THE TOTAL ACTIVE TIME REPORT

The process can automatically generate an Excel report if there is a list layout called “Total Active Time”. If not setup, this list layout can be created through VIZOR admin.

To trigger the process, navigate to … \Vector\ConnectTools\VNConfig and run “VNConfigUtils.exe” and launch the VNConfig task “Run Duration Working Hours Calculations using Status”.

![Vector Configuration Utility](image)
The VNConfig task will then take from this list layout to generate the report and save it to
...\Vector/connectserver/<project name>/reports/Total Active Time.xlsx

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Duration Working Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Employee User</td>
<td>Help Desk Analyst</td>
<td>Cannot print from my office PC</td>
<td>3.6406</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>Chris Hubbard</td>
<td>&lt;None&gt;</td>
<td>Calendar items and tasks disappeared in Outlook Today</td>
<td>6160.1039</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>Employee User</td>
<td>Help Desk Analyst</td>
<td>Cannot log on to system</td>
<td>1.0006</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Employee User</td>
<td>Help Desk Analyst</td>
<td>Cannot export a contact to CSV</td>
<td>6153.9606</td>
</tr>
<tr>
<td>5</td>
<td>10000</td>
<td>&lt;Assigned to Location&gt;</td>
<td>Demo User</td>
<td>My Disk stopped reading</td>
<td>3.3294</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>Chris Hubbard</td>
<td>Help Desk Analyst</td>
<td>Printing gives an “Access violation” error message</td>
<td>0.4278</td>
</tr>
</tbody>
</table>

ABOUT CONTACT FIELDS

The Help Desk project includes a selection of contact fields to better integrate your Help Desk workflows with your user & contact information. These fields directly pull information from the User & Contacts project. A list of available contact fields can be found below:

Contacts Alert Details
Contacts Full Name
Contact Address 1
Contact Address 2
Contact Address 3
Contact City
Contact Company Name
Contact Country
Contact E-mail
Contact E-mail 2
Contact E-mail 3
Contact E-mail 4
Contact E-mail 5
Contact Fax Number
<table>
<thead>
<tr>
<th>Contact Home Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Hours of Availability</td>
</tr>
<tr>
<td>Contact Is VIP</td>
</tr>
<tr>
<td>Contact Job Title</td>
</tr>
<tr>
<td>Contact Parent 2 Email</td>
</tr>
<tr>
<td>Contact Parent 2 Name</td>
</tr>
<tr>
<td>Contact Parent Email</td>
</tr>
<tr>
<td>Contact Parent Name</td>
</tr>
<tr>
<td>Contact Phone 1</td>
</tr>
<tr>
<td>Contact Phone 2</td>
</tr>
<tr>
<td>Contact Phone 3</td>
</tr>
<tr>
<td>Contact State/Province</td>
</tr>
<tr>
<td>Contact Title</td>
</tr>
<tr>
<td>Contact Zip</td>
</tr>
<tr>
<td>Contact Department</td>
</tr>
<tr>
<td>Contact Location</td>
</tr>
</tbody>
</table>
ARCHITECTURE DIAGRAM

VIZOR is a Web based product, the architecture is relatively simple. All of the components below could be located on one Server.

SINGLE TIER INSTALLATIONS

- **Web Server + Database Server**
- **Mail Server**
  - Vizor Server
  - Vizor Admin (*workstation or server*)
  - Vizor Web View Editor
  - SQL Database Server

**Workstations**

- Web Browser (*for accessing Vizor and Vizor Web Admin*)
- Vizor Admin (*workstation or server*)

---

**CHAPTER 3 - ARCHITECTURE**
MULTI-SERVER SETUP

The VIZOR architecture supports the following multi-server architecture.

To install this configuration several items need to be manually configured on each server.

- E-Mail Server
  (Exchange)
  - Exchange / Outlook

- Web Server
  - Vizor Server
  - Vizor Web View Editor
  - Vizor Admin (*workstation or servers*)

- Database Server
  - SQL Database Server

- Workstations
  - Web Browser (*for accessing Vizor and Vizor Web Admin*)
  - Vizor Admin (*workstation or servers*)
CHAPTER 4 - PEOPLE AND ORGANIZATIONS

Information about people and their accounts are important in VIZOR for:

1. Logon accounts, to log in to VIZOR.
2. Allocating assets to people.
3. Onboarding new hires.
5. Request approvals for actions, change requests, give assets to employees, etc.
6. Contacts of people who do not log into VIZOR but will receive email notifications.

In VIZOR, people accounts can be of two main security types: Users and Contacts. People accounts typically belong to an organization or company.

USERS

Users can log into VIZOR and to do so they have a logon account and credentials (user and password). The logon account may be native to VIZOR or it may be via a 3rd party such as Active Directory or LDAP.

Users have a logon account and they can log into VIZOR to use any Self-Service area that has been allowed by the administrators of the system.

**Employee** is a type of user that is commonly used when managing assets internal to an organization. Employees are often imported from or synchronized with Active Directory or an HR system.
MANAGERS OF EMPLOYEES

Occasionally, some workflows make use of the concept of the “manager of an employee”. For example, requested assets often need to be approved by the manager of the employee requesting the asset, in which case it is not practical to add a fixed name in the list of approvers.

For these scenarios, VIZOR has a special macro is dynamically resolved and that allows you to send the approval to the person that happens to be the manager of the employee at the time of the request.

WHO IS MY MANAGER?

The Manager of an employee is the person that is responsible for the Department, according to the employment information. Because the Manager is defined in the Department (Roles & Policies area), this means it is easy to make a change when the manager is changed.

To know the manager of an employee:

1. In the Employees area, select the person you want to know.
2. Click on the Employment tab and check what department the employee belongs to.
3. Go to the Roles & Policies area and select the Departments query.
4. Click the name of the department the employee belongs to from the list or search for it.
5. The name of the manager is displayed in the Responsible field.

IMPORTING MANAGERS OF EMPLOYEES

If you are importing the list of employees from an external source or synchronizing with a Human Resources (HR) system, it is possible to also import the manager of each employee. The actual mapping of fields depends on the type of source. Please contact support for more details on how to import this information.

CONTACTS
Contacts cannot log into the system but are referred to in processes, assets and tickets. They can receive emails and be used in fields of assets, licenses, purchases, tickets, etc. For example, a contact could be a person that sells software from a vendor and does not need to log on to VIZOR.

By default, incidents include a number of fields to capture the submitter of the incident, their contact information and also a way for them to declare their preferred method for receiving related notifications.

**ORGANIZATIONS OR COMPANIES**

Organizations are also referred to as Companies. You can have one or many Internal Organizations and one or many external organizations. Examples of External Organizations are: Customers, Vendors and Resellers.

Customers are Companies or External Organizations in VIZOR.

Each Company can have one or more associated people. A Company record can have both associated Contacts and Users.

**USER GROUPS**

User Groups in VIZOR are like roles in the VIZOR system, which allows easier administration of views, accesses, permissions and other rules to fit the needs of the organization.

Each roles is represented by a Security User Group, managed from the Web Admin.

These roles have a default combination of views and features that are typical for their use of the system.

The roles are very useful to profile the different functions of users in the VIZOR system depending on their function or focus of interest (software licenses, it hardware assets, hr-it, helpdesk, etc.).

You can create any number of User Groups to fit the requirements of your organization.

Default User Groups or VIZOR Roles:

<table>
<thead>
<tr>
<th>User Group</th>
<th>Demo user</th>
<th>Function</th>
<th>Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role</td>
<td>Name</td>
<td>Responsibilities</td>
<td>Areas</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td><strong>Software Managers</strong></td>
<td>Daniel Ambler</td>
<td>Manages Software and Software Licenses</td>
<td>Software Licenses</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Agreements &amp; Purchases</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Employees</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>My Actions</td>
</tr>
<tr>
<td><strong>IT Asset Managers</strong></td>
<td>Donald Nathan</td>
<td>Manages IT assets, primarily hardware assets</td>
<td>Assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Employees</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Locations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Agreements &amp; Purchases</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>My Actions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Roles &amp; Policies</td>
</tr>
<tr>
<td><strong>IT Managers</strong></td>
<td>Martin West</td>
<td>Manages general IT activities, budgets, assets, etc.</td>
<td>Assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manages policies for asset provisioning.</td>
<td>Software Licenses</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Employees</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Locations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Agreements &amp; Purchases</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>My Actions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Roles &amp; Policies</td>
</tr>
<tr>
<td>Role</td>
<td>User Level</td>
<td>Description</td>
<td>Features</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Employees</td>
<td>Employee User</td>
<td>Regular staff that uses services from IT and HR, such as submitting tickets to HelpDesk and requesting assets</td>
<td>Request Assets, Search KB, Submit a HelpDesk Ticket</td>
</tr>
<tr>
<td>Helpdesk Analyst</td>
<td>Help Desk Analyst</td>
<td>Manage helpdesk incidents and problems. Edit knowledge base and FAQ articles</td>
<td>Help Desk Incidents &amp; Problems, Change Requests, Search KB</td>
</tr>
<tr>
<td>HR Manager</td>
<td>Marianne Rosen</td>
<td>Monitor employee hires, terminations and turnover across the organization. Initiate employee Onboarding and termination processes.</td>
<td>New Employee Onboard, Batch Onboard, Terminate Employees, Employees, Locations, Roles &amp; Policies</td>
</tr>
<tr>
<td>Release Manager</td>
<td>Chris Hubbard</td>
<td>Uses the release manager project only. For select demos at the moment.</td>
<td>Release Management</td>
</tr>
</tbody>
</table>
ORGANIZATIONAL ROLES AND ORGANIZATIONAL UNITS

In order to manage better your assets and automate the provisioning or de-provisioning, VIZOR allows you to define and organize roles within your organization, map users to roles, and map assets to roles.

For the assignment and organization of roles, VIZOR uses the following types of entities:

- Organizational Units
- People/Employees
- Roles
- Assets

ADDITIONAL FIELDS

Organizations may need additional fields for their User, Contact, Customer and Company accounts. If you need an additional field, chances are VIZOR already has it as a built-in field but it may not be visible in the user interface.

You can view the list of all fields regardless of whether they are published in a Web view or user interface by going to the Web Admin > Fields > Fields. Some example fields are:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Last Name</td>
<td>Some countries use a Second Last Name or Surname. This is the case for most Spanish-speaking countries, for example.</td>
</tr>
</tbody>
</table>
ADDITIONAL FIELDS - EXAMPLE

In the following example we will walk through the process of adding a new field: Middle name.

- Open the Web View Editor on the VIZOR server.
- Select the Web view called “Users&Contacts / Security view” from the list.
- Once loaded, go to the Fields area on the left.
- The field Middle Name is in the Info tab. Locate the field in the left or right list to determine if it’s already in the Web view (on the right side) or not in the Web view (on the left side).

Once it is ‘exported’ to the Web view, on the right side, double click on it to see the field attributes. Check the field is Visible: Yes.
Close and click on the top bottom "Generate View", right from the "Save" button.
INTEGRATION WITH HUMAN RESOURCES - HR SYSTEMS

VIZOR can integrate with a Human Resources (HR) management system via connectors or via export/imports. Please contact Vector Networks to know if a connector for your system already exists.

WHAT WILL THE INTEGRATION BETWEEN VIZOR AND THE HR SYSTEM DO?

1. Import additional employee information.
   Import information that may not available in Active Directory.

2. Synchronize Departments and Job Titles catalogs.

3. Automatically provision assets for a new employee
   VIZOR can be configured to detect new employees and, based on their roles, start the provisioning process of all the assets the employee needs.

4. Automatically deprovision assets for an employee leaving the organization
   VIZOR can be configured to detect when employees will be leaving the organization and start recovering the assets assigned to the employee (de-provision all the assets of the employee).

5. Automatically provision or deprovision assets for an employee changing job/role
   VIZOR can be configured to detect when an employee changes job and adjust the assets assigned to her accordingly.
CATALOGS

VIZOR can import and keep synchronized the following entities either through a connector specific to the HR system or via export/import:

- List of Departments
- List of Organization Units
- List of Job Titles
- List of Job Positions

EMPLOYEE/PERSONAL INFORMATION

Examples of typical information that can be synchronized between VIZOR and the HR system are:

- Type of user (Employee, Staff, Volunteer, etc.)
- Manager of employee
- Supervisor of employee
- Department of employee
- Job Title of employee
- Job Position of employee
- Status of Employment
- Employment Start Date
- Employment End Date
- Employee ID
- Full Name or parts of it, like Middle Name, Second Last Name, etc.
- Title (different from the Job Title)
- Nickname
- Email address (usually also in Active Directory)
- Organization or Company the person belongs to
- Address
- City
- State / Province
- Country
- Phone numbers (multiple)
- Hours of Availability
- Location Room or Sub-room
MODIFYING THE INTEGRATION

You can modify integration via the VIZOR Import Manager. You can create new rules or modify existing ones of the types: People from (source), as in the screenshot below.

You can specify when to synchronize and how to synchronize in the Import Settings step:
Use the Global Mappings to set the default values, the order of precedence and the mapping of fields between the external source and VIZOR:

VIZOR has a native connector for a few systems like Infor and SmartStream, however, it uses a common interface and can integrate with others. Please contact Vector Networks for more information.
IMPORTING USERS FROM AN EXCEL FILE

- On your Home Page, click on the “Users” link to access the “Users” web view:

- Once in the “Users” web view, click on the “Import” button to open the Self-Service Import assistant
• The Import assistance will open, follow the instructions:
  
a. Download the template from the link provided and fill in the user information to import.

• The template will look like this. Update it with your user’s information

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
<td>Last Name</td>
<td>Unique ID</td>
<td>Company Name</td>
<td>Category</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• As seen on the image before, you will be asked to fill in your user’s information in the following fields:

1. **User’s First and Last name**
2. **Unique ID:** This is the ID of the person in the external source from where they were imported. For example, if the user was imported from an HR system, this would be the employee number
3. **Company name:** The user’s company of origin
4. **Category:** This includes several values as
   - Contractor
   - Consultant
   - Employee
   - Intern
   - Etc.
5. **Email:** The user’s email address.
6. **Fields highlighted in blue are mandatory, fields in black are optional.**

• Click on Import files and then upload the file you want to import.
• If the "Enabled" slider is set to No, set it to Yes
• Once completed, if you aren’t planning to import additional users again soon, set Enabled to No
• Once the import is completed, the assistant will give you a rundown of the users imported.

In this example, 424 users were processed, 423 were synchronized and 1 of them was a brand new addition.

<table>
<thead>
<tr>
<th>Total Processed:</th>
<th>424</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Added:</td>
<td>1</td>
</tr>
<tr>
<td>Total Synchronized:</td>
<td>423</td>
</tr>
<tr>
<td>Total Errors:</td>
<td>0</td>
</tr>
</tbody>
</table>

Log: Importing from UserImportTemplate -DEMO315rev1_run3.xlsx Wednesday, March 17, 2021 11:19:50 AM

• Your users have now been imported.
• To update users or add additional information, simply repeat the process and fill in the template with the updated information. Upload the template to update the import.

To consider for the import file:

• The file name does not matter, VIZOR will recognize it as long as:
• The following file formats are supported:
  o For v2.5.2.319: .xlsx
  o For v2.5.2.320: .xlsx, .xls or .csv
• The Import Users from Excel File task will check for a file ever minute as long as it is enabled and the Vector Integrations service is running.
You often need to track the allocation of Software Assets. Assets are typically assigned to a person, like an employee, but they can also be allocated to other entities like departments. Assets can be allocated to the following:

- Person (Employee or User)
- Location (room, building, etc.)
- Department
- Project
- Unit or Division
- Computer (in the case of Software)

VIZOR keeps track of how many licenses you have and identifies any surplus inventory. It decrements your available licenses every time a license is allocated and increases it when the license is de-allocated. Hence your inventory stays current and accurate.

Tracking allocation with VIZOR helps you manage costs and budgets, it helps you know if and when all your surplus licenses get redeployed. VIZOR allows you to start the request for purchasing new software or stop taking orders depending on your organization’s preference.

WHAT HAPPENS WHEN AN ASSET IS ASSIGNED TO A PERSON?

When an asset is assigned to a person, the Status changes to Assigned and the Assigned Date and Assigned Time fields are automatically set to that date and time. The assigned person is also known as the Owner of the asset.
After the asset is assigned, you may want the user the asset was allocated to to confirm the acceptance of said asset. In order to confirm the receipt of the asset, navigate to the "My Items" web view. In this view, you will be able to view all equipment allocated to you and electronically confirm acceptance of equipment receipt.

It is possible for the administrator to configure VIZOR to send an email with a link for the user to accept receipt automatically after an asset is assigned.

While in the "My Items" view, click on one or more assets to acknowledge reception for and click on the "Confirm Acceptance" button in the right tool bar.
Clicking on this button will prompt a message of confirmation of acceptance. By doing this the user confirms that the selected asset has been received and terms and conditions are accepted. You can access the terms and conditions PDF by clicking in the link within the message. This link can be modified by the organization and will be the same for all assets.

**Confirmation of Acceptance**

By clicking on 'I confirm', I am electronically signing and confirming that I have received the selected equipment and I accept the terms and conditions.

I Confirm    Cancel

Administrators have the capability of checking the timestamp of the reception acknowledgment by going into the “Details tab” in the Assets view.
It is also possible to create a query that shows a specific type of asset that are “assigned” and have not been accepted (For which the “User Confirmation On” field is empty).

ALLOCATIONS TO DEPARTMENTS, LOCATIONS, PROJECTS AND ASSET CONTAINERS

In addition to assigning an asset to a person, it is often needed to allocate a number of assets to a Department, to a Location, to a Project or to an arbitrary pool of assets for which a person is responsible for (an asset container).

ALLOCATING EXISTING ASSETS TO DEPARTMENTS, LOCATIONS OR PROJECTS

To allocate one or more existing assets to a specific department, set the field “Department” in the details of the asset. Do the same for Location or Project with the field “Location” and “Project” in the Allocation tab of the asset instance.

If you want to allocate/reserve some assets to a Department, Location or Project:

1. Go to the Assets area
2. Use the search or drill down to see the assets you intend to allocate.
3. Select all the assets you want to allocate by clicking on the row.
4. Click on Mass Update
5. In the form that opens, go to the Allocation tab and set the field Department, or Location or Project as desired.

6. Click OK to apply the changes.

When an asset is allocated to a department it can still be assigned to a person, at any time. This allows departments to receive pools of assets and assign them to people at a time when is needed.
ASSET CONTAINERS - POOLS OF ASSETS

In some cases, the pool of assets is not based on a department, project or division. VIZOR allows you to create a type of asset called Container and add arbitrary assets to it. You can then designate a person responsible for the pool of assets, regardless of the person’s position, department or location.

For example, a team leader is given 10 licenses of software ABC, which she will later assign to the team members. In a similar way to allocating assets to a department, simply create a pool and add the 10 assets using the Mass Updates function (software in this example).

A person can view what assets she is responsible for by selecting “My Containers” in the query list of the Assets view.

ASSET DEALLOCATION

VIZOR is a great tool to optimize the usage of your Software and other assets as people join the organization, leave the organization or change roles, thus having different needs with regards to assets.

The following are typical scenarios where VIZOR deallocation is used:

- Employee changes position
- Employee terminates job
- Employee requests a new or different asset to replace an existing one
- Employee returns asset from a temporary loan
- One asset needs to be allocated to a different location
- IT person finds an asset that should no longer be allocated

ASSET QUANTITIES
You can easily know the total number of assets of a certain type by opening the Asset Type record and going to the Allocation tab. You can also query these fields, which are valid only in a record of type Asset Type:

- **Total_Assets**
  Total number of Active assets of that type. Retired assets are not counted.

- **“Assets_in_Use”**
  Total number of assigned assets.

- **“Assets_Remaining”**
  Total number of assets in Stock or Storage.

Please note that the field Total_Allocated is only valid in the context of bulk container assets.

---

**SOFTWARE ASSET ALLOCATIONS**

Software is a special case of assets. For each license entitlement entered in the Software License area from a purchase, VIZOR automatically creates one Software Asset instance, which can then be allocated to a person (user) or a computer (device).

---

**SUMMARY OF ALLOCATIONS**

In the Software Licenses area, you can view the overall status of the allocation of software licenses for a given Software Asset Type by opening the Software License record. Click on the **Allocation** tab.
The Software may be allocated in the following ways:

- Allocate to people or users
- Allocate to computers or devices
- Allocate to a License Server

VIZOR calculates and displays the information in the Allocation tab differently depending on the type of allocation.

ALLOCATION TYPE

The Software may be allocated in the following ways:

- Allocate to people or users
- Allocate to computers or devices
- Allocate to a License Server

The Allocation Type of a Software License record is displayed in the Compliance tab. The value is controlled by the Licensing Calculation field.
An administrator can change the setting in the Web Admin > Workflow > License Manager:

<table>
<thead>
<tr>
<th>Licensing Calculation:</th>
<th>One License = One Named User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation Type:</td>
<td>Users</td>
</tr>
<tr>
<td>Compliance State:</td>
<td>Compliant - Over Licensed</td>
</tr>
<tr>
<td>Last Licensing Calculation:</td>
<td>4/11/2019 7:17:16 AM</td>
</tr>
<tr>
<td>Over Licensed Threshold (%)</td>
<td>10</td>
</tr>
<tr>
<td>Over Compliance %:</td>
<td>48</td>
</tr>
</tbody>
</table>

Conditions & Actions for the Business Rule Set Allocation Type
Select a row and click on a cell to update the values used in the conditions and actions.
LICENSE SERVERS

A software license server is a centralized computer which provides or allocates the license instances to the client computers or users in order to enable licensed software to run on them. Each allocation or instance of a license is also known as an access token or a key.

The license server is responsible of controlling the number of running instances of a program based on the license entitlements allocated or registered in the license server.

It is up to the License Server to determine how the licenses available are assigned to the client computers or users. Many use floating licenses, in which one access token or license is taken by each instance running on a client computer.

However, the final allocation of these licenses can be on reserved named-users or specific computers.

Use the Allocate button in the Allocation tab to allocate tokens to a specific License Server:

Allocate Software Assets

Allocate software assets to license servers to track use of software license entitlements and access to applications. VIZOR will take the software assets from those that are in stock.

Depending on the licensing associated to these software assets, allocating a software asset to a license server usually takes up a license from the entitlements.

If there are software assets reserved for the license server’s department and/or location, VIZOR will allocate to those assets first. Otherwise, when the software asset is allocated to the license server, the department and location of the asset will be set to those of the license server.

Number to Allocate: 
License Server: 
Show Advanced: No Yes

OK Close
ALLOCATING ASSETS TO DEPARTMENTS OR LOCATIONS FROM THE PURCHASE

The best way to allocate or reserve the software assets / licenses to a Department, Project or Cost Center is directly from the Purchase.
Each Purchase Line Item contains information that allows VIZOR to automatically create the specified number of assets (asset instances) that will be assigned to users afterwards.
When a Department, Project or Cost Center is specified directly in the Purchase Line Item, all software asset instances that are automatically will be reserved or allocated to the specified Department, Project or Cost Center.

ALLOCATING EXISTING ASSETS TO DEPARTMENTS, LOCATIONS OR PROJECTS

To allocate one or more existing assets to a specific department, set the field “Department” in the details of the asset. Do the same for Location or Project with the field “Location” and “Project” in the Allocation tab of the asset instance.

If you want to allocate/reserve existing software assets to a Department, Location or Project:

1. Go to the Software Assets area
2. Use the search or drill down to see the software assets you intend to allocate.
3. Select all the assets you want to allocate by clicking on the row.
4. Click on Mass Update

5. In the form that opens, go to the Allocation tab and set the field Department, or Location or Project as desired.
6. Click OK to apply the changes.

When an asset is allocated to a department it can still be assigned to a person, at any time. This allows departments to receive pools of assets and assign them to people at a time when is needed.

**VIEWING ALLOCATION PER DEPARTMENT, LOCATION OR PROJECT**

There are several ways to view how software is allocated per Department, Location or Project.

- View the summary in the Allocation tab.
15 Reserved Licenses

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>Department</td>
<td>1</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Department</td>
<td>2</td>
</tr>
<tr>
<td>IT Infrastructure</td>
<td>Department</td>
<td>3</td>
</tr>
<tr>
<td>Marketing</td>
<td>Department</td>
<td>5</td>
</tr>
<tr>
<td>Security</td>
<td>Department</td>
<td>4</td>
</tr>
</tbody>
</table>

Showing 5 reservations

20 Unreserved Licenses

35 Total Licenses

- View the report Allocated by Department or by Location.

### Allocated Assets by Department

![Bar chart showing allocated assets by department](image)

<table>
<thead>
<tr>
<th>Departments</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>10</td>
</tr>
<tr>
<td>Infrastructure Management</td>
<td>10</td>
</tr>
<tr>
<td>IT Infrastructure</td>
<td>10</td>
</tr>
<tr>
<td>Facilities Management</td>
<td>8</td>
</tr>
<tr>
<td>Administration</td>
<td>6</td>
</tr>
<tr>
<td>Security</td>
<td>4</td>
</tr>
<tr>
<td>HR</td>
<td>3</td>
</tr>
<tr>
<td>Finance</td>
<td>3</td>
</tr>
</tbody>
</table>

### Microsoft Visio 2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Software</th>
<th>Status</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
<tr>
<td>Name</td>
<td>Microsoft Visio 2016</td>
<td>In Stock / Storage</td>
<td>10</td>
</tr>
</tbody>
</table>
• Go to the Locations area, and click on the desired Location. Click on the Assets tab to view assets allocated to that location.

• Create an ad-hoc custom report or summary list directly from the Web view.
### Settings

Set the options for how you view and sort the information in the summary list.

#### Filters:
- **Department (Allocation Tab)**: IT Infrastructure

#### Sort By:
- Default

#### Columns Layout:
- Allocation

### Assigned

**Department (Allocation Tab) = IT Infrastructure**

<table>
<thead>
<tr>
<th>Name</th>
<th>Asset Tag</th>
<th>Serial Number</th>
<th>Status</th>
<th>Allocated to Person</th>
<th>Allocated to Device / Computer</th>
<th>Location</th>
<th>Unit/Division</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe Creative Cloud</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Martin West</td>
<td>--</td>
<td>USA \ New York</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Adobe Creative Cloud</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Martin West</td>
<td>--</td>
<td>USA \ New York</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Microsoft Office 201</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Chris Hubbard</td>
<td>--</td>
<td>USA \ New York</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Microsoft Office 201</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Daniel Antwerp</td>
<td>--</td>
<td>Belgium \ Bruxelles</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Microsoft Office 201</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Donald Nata</td>
<td>--</td>
<td>Belgium \ Bruxelles</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Microsoft Office 201</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Help Desk An</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Microsoft Office 365</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Martin West</td>
<td>--</td>
<td>USA \ New York</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Microsoft Office 365</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Martin West</td>
<td>--</td>
<td>USA \ New York</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Vector Issue Tracker</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Daniel Antwerp</td>
<td>--</td>
<td>Belgium \ Bruxelles</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Vector Issue Tracker</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Help Desk An</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>Vector Issue Tracker</td>
<td>--</td>
<td>--</td>
<td>Assigned</td>
<td>Help Desk An</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>IT Infrastructure</td>
</tr>
</tbody>
</table>
ACCESS DATA FOR ONE DEPARTMENT OR ONE LOCATION ONLY

You organization can also limit users to only view the Software Assets allocated to their own Department or Location but not any others. This also limits the user to view only Purchases and Software License records that are for their own Department or Location.

To control this:

1. Go to the Web Admin > Security > Groups
2. Select the Group from the list where you want to limit the accessible data to users.
3. Click on Features and add or remove the features that control Access to All Departments, Access to All Locations and Access to All Organizations.
4. Click OK to apply the changes.
IMPORTING LOCATIONS FROM AN EXCEL FILE

To import the list of locations from an Excel file:

1. Access VIZOR with an admin account.
2. Open the "configurations" web view.
3. Search for "lists" in the top right search box.
4. Open the "Import location" link and follow the instructions:

Import Locations from an Excel file.
1. Download the Locations-ImportTemplate.xlsx file and fill in the data to import.
2. Click on Import Files and browse to the file you have filled in.
3. Click On Upload File. Your data will be imported at that time. Close the upload files dialog.

MAPPING CHOICE VALUES DURING IMPORTS (IMPORT ALIASES)

When importing Users, Assets, Tickets and other records, the source may have fields (or columns) to import into single-choice fields in VIZOR, like Location, Department, Job Title, and many others. Normally the value to import needs to match one of the valid existing choices for that field in VIZOR, otherwise the value is automatically created as a valid choice, adding an option to the list. The automatic creation of new choices can be turned off.

In some cases, the source data may have a value that does not match a choice in VIZOR but that should be mapped to an existing one.

For example, in a user import:

If the Location field has the value "LA" from the source and the corresponding valid location in VIZOR is "USA>Los Angeles", it is not desirable or convenient to create a new location named "LA" as this would be
redundant. Instead, the administrator can resolve this by giving an alias to the "USA > Los Angeles" location.

The alias "LA" can be entered in the "USA > Los Angeles" location in a field called:

- **Alias_1**
- **Import_Alias_1**

Both naming conventions are supported and, as the number "1" suggests, multiple aliases can be set for the same choice value (a location in this case).

To enter the value from the user interface, the administrator may need to export the alias field to the appropriate Web view.

In this example, the field **Alias_1** already exists in the VIZOR project "Roles", where Locations are stored, and it would be probably needed to export the **Alias_1** field to the Web view "Roles/Manage" using the Web View Editor tool.

![Web View Editor](image)

Once exported, you can enter the alias "LA" for the "USA > Los Angeles" location, and any other aliases needed.

![Edit Location Information](image)
You can add multiple aliases for the same location / choice value. VIZOR will match the first value starting with Alias_1, Alias_2, Alias_3, etc. or Import_Alias_1, Import_Alias_2, Import_Alias_3, etc.

You do not have to enter an alias for each location if one location has an alias. Aliases are optional per location / choice value.

Avoid duplicate names in the aliases; only the first match will be used.

Specifically for locations: the value in the alias does not have to follow the location hierarchy. That is, "LA" will match the complete "USA > Los Angeles" if the alias is "LA". The alias does not have to be "USA > LA".

ASSIGNING SOFTWARE ASSETS

Software Assets are assigned to a person or to a computer. This depends on the Allocation Type of the Software License record.

Once assigned or allocated to a person, the Status of the asset changes from In Stock to Assigned.

You can always know the complete status of a Software Asset via the Status and the Provisioning Status. As described in the Software Licenses, the Status indicates the life-cycle of the individual software license, account or record, while the Provisioning Status indicated the temporary status while it’s being deployed, provisioned or deprovisioned to the user.

All the licenses that can be distributed to users or computers are in Status In Stock.

Licenses distributed and consumed have a Status: Assigned and a Provisioning Status of Provisioned.

Licenses that have reached End-of-license and should be removed have a Status: Retired-Expired and a Provisioning Status of Provisioned. This should be a temporary situation.

Licenses that were harvested and can be reused have a Status of: In Stock and a Provisioning Status of Deprovisioned.

Software Assets, where each one may represent a license, can be assigned in the following ways:

1. IT assigns a software asset to a person or computer
2. IT assigns software assets to multiple people or computers
3. Auto assign software asset to a person from a Request
4. Auto assign software asset to a person from Onboarding
IT ASSIGN A SOFTWARE ASSET TO A PERSON OR COMPUTER

In this scenario, an IT person assigns one software asset to a person or to a computer.

To do this:

1. Go to the Software Assets area.
2. Use the search or drill down to see the software asset you intend to allocate.
3. Click on the row to open the details of the asset.
4. In the form that opens, go to the **Allocation** tab and set the field **Allocated to Person** as desired. Note you can also set the **Computer / Device**.

<table>
<thead>
<tr>
<th>Allocated to Person:</th>
<th>Chris Hubbard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Belgium \ Brussels \ North Campus</td>
</tr>
<tr>
<td>Minimum Quantity:</td>
<td></td>
</tr>
<tr>
<td>Department:</td>
<td>General Administration</td>
</tr>
<tr>
<td>Project:</td>
<td></td>
</tr>
<tr>
<td>Allocated to Device / Computer:</td>
<td>CGSH243</td>
</tr>
<tr>
<td>Container:</td>
<td></td>
</tr>
<tr>
<td>Key:</td>
<td></td>
</tr>
</tbody>
</table>

5. Click OK to apply the changes.

When an asset is assigned to a person, the automatic provisioning actions are triggered.
In this scenario, an IT person assigns software assets of the same Software Asset Type (e.g. Adobe Photoshop) to multiple people or computers at once.

To do this:

1. Go to the Software Licenses area.
2. Use the search or drill down to see the Software License record you will allocate.
3. Click on the row to open the details of the Software License record and go to the Allocation tab.
4. Click on the Allocate button

5. Depending on the type of allocation of the software (per user or per computer), a dialog to select the users or computer will open.
Allocate Software Assets

Allocate software assets to users to track use of software license entitlements and access to applications. VIZOR will take the software assets from those that are in stock.

Depending on the licensing associated to these software assets, allocating a software asset to a user usually takes up a license from the entitlements.

If there are software assets reserved for the user’s department and/or location, VIZOR will allocate to those assets first. Otherwise, when the software asset is allocated to the user, the department and location of the asset will be set to those of the user.

Allocate to Users: Click to select

6. Click on the list to select multiple users or computers to allocate the software to.
Allocate Software Assets

Allocate software assets to users to track use of software license entitlements and access to applications. VIZOR will take the software assets from those that are in stock.

Depending on the licensing associated to these software assets, allocating a software asset to a user usually takes up a license from the entitlements.

If there are software assets reserved for the user's department and/or location, VIZOR will allocate to those assets first. Otherwise, when the software asset is allocated to the user, the department and location of the asset will be set to those of the user.

Allocate to Users:

Daniel Ambler
Donald Nathan
Help Desk Analyst
Jane Rose Daren
John Davis
Martin West
Perseus Lowa Jackson
Robert Green
Rose Arrington

7. Click OK to complete the allocation.

Important considerations:

- VIZOR automatically allocates a software asset to each person if there are available (Status = In Stock).
- VIZOR automatically check if there are software assets in stock and reserved or allocated to the Department or Location of the specified person.
- If there is a software asset available and allocated to both the Department and the Location of the specified person, that asset is assigned.
- If not, VIZOR checks if there is a software asset available and allocated to either the Department or the Location of the specified person. If there is one, that asset is assigned.
- If not, VIZOR checks if there is a software asset available and not allocated to any Department or Location, and assigns that asset.
- Once assigned, the Department and the Location of the Software Asset will be automatically set to the Department and the Location of the person it's allocated to.
AUTO ASSIGN SOFTWARE ASSET TO A PERSON FROM A REQUEST

When the process starts from a Request, the software can be automatically assigned after the request is approved (if that Software Asset Type requires approval). The Request may initiate from the self-service Request Portal or from a manager requesting an asset for an employee. In both cases the process is the same.
To learn more about the Request process, go to Service & Asset Requests and to learn more about the automatic assignment or fulfillment of the request go to Fulfilling Requests.

AUTO ASSIGN SOFTWARE ASSET TO A PERSON FROM ONBOARDING

The Software Asset may be assigned and then provisioned to a person as the result of the person joining the organization (new hire) or starting a new role or job. The process of the automated onboarding and user provisioning requires that the organization defines first what software should be automatically given to what type of user.
The rules or policies that control this are defined per Asset Type, in the Software Asset Type area.
To learn more about the onboarding and automated user provisioning, go to Onboarding and Automated User Provisioning.
WHAT HAPPENS IF WE NEED MORE LICENSES OF A SOFTWARE ASSET TYPE?

As described in this guide, VIZOR helps you keep track of software allocation, and installations. By monitoring the Asset Quantities you can reorder licenses automatically from the vendor or start the purchasing process.

Using the Notification editor, create a notification like:

\[
\text{Assets\_Remaining} < \text{Minimum Quantity} \\
\text{Asset Type} = \text{MySoftware}
\]

Where MySoftware is the software to order more licenses for.

Send the email notification to purchasing or to the Vendor for ordering.

AUTOMATIC ALLOCATION

VIZOR can automatically allocate assets to users in several scenarios. You can turn on the specific auto-allocations that your organization needs in the Configurations area.

AUTO-ALLOCATION OF LINKED ASSETS

VIZOR automatically allocates all the assets linked to a computer when the computer is allocated to a person. For example, if a computer has a linked keyboard, mouse, monitor, printer and computer case, when allocating the computer to a person, all the linked assets will automatically be allocated too, and the location and department set for these dependent assets in the same manner and under the same rules as the parent device.

Likewise, when that device is returned, all the dependent assets will be automatically returned.
AUTO-ALLOCATION OF CONTAINER ASSETS

VIZOR can automatically allocate all the assets in a container when the container is allocated to a person. For example, if a Chromebook Cart has multiple devices, you can allocate all of them at once when allocating the container to a person.

Likewise, when that container asset is returned to storage, the dependent assets should be automatically deallocated.

Example: create a Chromebook Cart of type Container and add a few computers to it. In VIZOR, the link is indicated via the field "Container", which points to the container asset.

When allocating the cart to a person, if the auto-allocation of containers is ON, all the contained assets will be automatically allocated to this person, and the location and department set for these dependent assets in the same manner and under the same rules as the parent device.

AUTOMATIC ASSET ALLOCATION FROM RECENT USERS

One of the main functions of VIZOR is to keep track of what asset is allocated to what person. For this purpose, each asset has the field "Allocated to Person". This field is set to either "None" or to a valid user/person in VIZOR.

The auto-allocation from recent users is only available to computers and server computers are always excluded (they are never auto-assigned in this way).

MOST RECENT USER

How is the most recent user obtained?

The most recent user is usually found by a discovery tool like Microsoft ECM/SCCM, Vector Discovery (VAM) or Google Admin.

VIZOR checks the values of these fields, in this order, to find the most recent user:

1. Primary Owner
2. Top Console User
3. Recent Users
The order of this fields also indicates the order of priority in VIZOR. If VIZOR finds a user in Primary Owner, it will not use the other two fields.

The fields Primary Owner and Top Console User are usually for computers found by Microsoft ECM and Vector Discovery (VAM), while Recent Users is typically used by G Suite / Google Admin.

---

**WHEN?**

How often the validation and auto-allocation happens? Can I trigger it to be executed on demand?

The validation process occurs after any import or synchronization with a discovery source (Microsoft ECM, Google Admin, LanSweeper, Vector Discovery) and daily by default as part of the Application Setup Maintenance Task. You can trigger it on demand via the “Run Now” in the corresponding configuration item.

---

**CASES IN WHICH THE ASSET IS AUTOMATICALLY ALLOCATED**

In what cases is the asset allocated to the most recent user?

In the table below, we use ATP for the field Allocated to Person.

<table>
<thead>
<tr>
<th>If Status is...</th>
<th>And...</th>
<th>Then auto-allocate</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Requested</td>
<td>-</td>
<td>Yes</td>
<td>This is a way for IT to force the automatic allocation. This will process the recent user and assign to a user regardless of the current value of the ATP.</td>
</tr>
<tr>
<td>Assigned</td>
<td>The ATP is None or empty</td>
<td>Yes</td>
<td>This scenario is not very common because the ATP is enforced to be not empty when the status is changed to assigned. It happens in some cases after an import.</td>
</tr>
<tr>
<td><strong>In Stock</strong></td>
<td>The Status has not been changed after the initial value at the creation or first import of the asset</td>
<td>Yes</td>
<td>The most typical scenario is after an import. After the asset is first created from the SCCM connector, for example, the Status may be set to “In Stock”. If VIZOR users do not modify the Status, and a Recent User is found, it will automatically be allocated to that person and the Status changed to “Assigned”.</td>
</tr>
<tr>
<td><strong>Retired, In Repair, and others</strong></td>
<td>-</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Servers are excluded from auto allocation.

**HOW TO TURN OFF AUTO-ALLOCATION FOR RECENT USERS**

1. Log in as administrator into VIZOR

![Login Page]

2. Go to the configuration’s area
3. Search for the setting auto-allocate for discovery recent users and open the record.

4. Ensure the Enable switch is set to no (if set to YES, switch to NO).
5. Click OK

You can log out now the change is complete

HAVE ASSETS FOLLOW THE USER’S CONTEXT

VIZOR can automatically have the asset follow the user’s context upon allocation. This context involves the Department, Location, Organization and Organizational Unit. This is setup in the “Asset Location and Department follows the assigned person” configuration task. Setting the “Value” field to 1 enables this feature.

ADDING AN OU EXCEPTION

If you want to keep devices in a specific OU, no matter the user it is assigned to:

In VIZOR admin, navigate to the Resources project and open the query editor. Select the built in “Follow the user’s context” query.

This query defines the conditions for when assets will be set the Organization, Location, Department and OU of the assigned user. If there are no conditions, which is the default case, the query would return all assets, so all assets have that behavior as long as the Configuration for the “Asset Location and Department follows the assigned person” is enabled.

To add an exception, we need to set the conditions like so:

Organizational Unit <> /Example OU 1 AND
Organizational Unit <> /Example OU 2
You can add as many exceptions here, the important thing to remember is that we want to add conditions where a is different than b, so when the condition is not met (the OU is not different from the exception) the asset will not follow the user’s context.

CHAPTER 6 - LIFE CYCLE OF ASSETS AND SERVICES

OVERVIEW

Assets and Services have a life cycle. VIZOR helps organizations track these life cycles and make the associated processes efficient, optimized and collaborative.

The default life cycle of an asset or service follows this general sequence:

- Request
- Approval
- Fulfillment or Allocation
- Provisioning
- Use
- Deprovisioning

During the Use stage, the asset is assigned, typically to a person, and it is considered active, in production.

For configuring the Request stage, see the section Service Request Records in this guide.
Automating Actions based on Lifecycle

See Section “Asset Life-cycle & provisioning actions” for information on how to Automated actions based on an Assets lifecycle.

ASSET STATUS

VIZOR permits tracking of the complete lifecycle of assets, from employee request, through approval, procurement, provisioning and eventual retirement.

VIZOR supports multiple EOF (end-of-life) statuses such as Sold, Lost, Donated.

VIZOR Administrators can configure actions and notifications based on each lifecycle status. See notifications and provisioning actions sections of this document.

Asset Statuses can created, deleted and updated using the Web Admin.

ASSET CHECK-IN/OUT

The Check In / Check Out view is used for assigning or allocating assets rapidly to users, and for returning them to storage after use.

You can click inside the Search bar and use the barcode reader to search for the Asset. From there, you will be able to individually check-in or check-out the asset.

To select the person to assign the asset to you have two options:

- Input entering a unique code
Use the flexible input search that you can use to quickly find the user you want by entering the employee number, the student id, the lunch number or any other unique identifier like the email address. Use this box with a bar code reader to scan the employee or student card to check out the equipment fast and simple.

- Selecting a person from a list
  This is a regular single choice field with a list of users to select.

Once a valid person is selected, you will see the details of the person such as email, location, employee number, school grade, etc.

After that you can simply click on Check Out or press the enter key and the asset will be checked out. The location and department of the asset will be also set to the location and department of the person it is allocated to.

For returning or checkin in equipment, simply scan the bar code of the asset to return while the cursor is in the search box, or manually select an asset from the list.

The asset will automatically offer a different button, this time for check in. You only need to click the button and the asset will be returned to storage.

Using Storage Locations

When checking in asset you may have more than one location for storage. If this is the case, you may want to allow your users to select a valid storage location from a list.

When the user selects one of the options in the Return to Storage Location, the asset new location will be set to that location after checking in.

Valid Storage Locations are created in the Locations area and are always of type sub-room location.

To show the storage location list:

- In the Web View Editor, open the Check In Out View and export the field "Return to Storage Location".
- Set the field html template to “fld_NoField.htmpl”
- If not already enabled, enable the feature “Show Return to Storage Location” to the the user groups who will use this option.
If you want to check out more than one asset for an employee, you can do the following. Click on the "Check Out Multiple Assets" button.

In the presented dialog, you can use a barcode scanner to scan multiple items to be checked out. Please note that the barcode must match the Serial Number or Asset Tag of an existing Asset in Vizor. Click the “OK” button once you are done scanning Assets. Select an Employee to assign the Assets to and then click the “OK” button. Those assets will now be marked as checked-out for that employee.
REQUEST STATUS OF AN ASSET

On occasion, you may find that the status of an asset in VIZOR may not be correct.

For example, let’s say an employee has multiple assets assigned and then one day the employee leaves the organization without returning the assets. Someone goes to the work place of the person to verify or collect the assets and it results on one of the assets not being found. It is possible the asset was lent or taken by someone else and not registered in VIZOR. In this case the status of the asset may be incorrect and it is needed to verify whether the asset is lost, moved, discarded or maybe back in stock.

<table>
<thead>
<tr>
<th>Scan Assets to Check Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scan the Serial Numbers or Asset Tags of Assets to check out</td>
</tr>
<tr>
<td>S4NL111</td>
</tr>
<tr>
<td>S4KT113</td>
</tr>
<tr>
<td>SENL2Z0</td>
</tr>
</tbody>
</table>
In these cases, a user can flag the asset in VIZOR in order to request the status is verified.

The way the asset is “flagged” is via the status “Status Requested”, which is a special value of status similar to “Repair”, “Lost”, “Assigned”, etc.

The usage of this status is for when the value of the existing status may be incorrect or in question.

Other examples:

- If the status of a given asset is “In Repair” but then a person finds the asset being used by someone, so ostensibly not “In Repair” but “Assigned”.
- If the status of an asset is “Assigned” but when IT calls the person it was assigned to the person says she/he does not have the asset and never received.

The asset manager user can request the status is verified for one or multiple assets at the same time:

![Request Status](image)

This causes the status of the asset to be changed to “Status Requested”. Other fields like “Allocated to person”, Location, Department, etc are not changed. When this option is selected, an email is sent to the designated person to be verified and ultimately re-set the status.

One common good practice is to define a well-known email address specific for this purpose, like VerifyAssets@myorg, and it could be used in coordination with Lost and Found.
ASSET ACQUIRED FROM ANOTHER ORGANIZATION

In cases of Mergers & Acquisitions or when purchasing assets from another organization, VIZOR helps you manage and document the source of the assets.

Import or Purchase creation. The process should start either when importing the asset or when creating a purchase record of the asset in VIZOR. Use the Import Manager to import assets from any external source, including an Excel file. Set the Organization field to the name of the source organization. In the Purchase, enter the Organization from the UI.

Once imported, run an ad-hoc query for these assets and click on Mass Update Assets.

Then set the organization to the current organization receiving the assets.

Organization: ACME

After applying, the information will now be recorded in the Historical data for all those assets. Users will be able to check and run reports about the source of the assets.

For some assets, it may be needed to use the Status Merged, where a new record of the asset is created, manually or automatically and the old record of the asset from the previous organization is set to Merged.
RETIRING ASSETS

When it is time to Retire an asset, VIZOR helps you in multiple ways.

You can set the Status of the Asset to one of the Retiring statuses. The default values are:

- Retired - Scrapped / Destroyed
- Retired - Sold
- Retired - Donated
- Retired - Expired
- Retired - Lost/Stolen

VIZOR will automatically trigger the deprovisioning actions and change the State to inactive.

Also, the **Disposal** tab will appear.

Enter the following fields:

- **Disposal Date**
  Date in which the asset was disposed or destroyed. This may be different from Inactive from Date field which is automatically set to the time when the status is changed in VIZOR.

- **Disposal Destruction Method**. This field will also be used for comparison against any regulation that affects the asset, for compliance.
  Default values are:
- **Disposal Percentage**
  In some cases, if not all the material was recycled, what percentage was. Typically this information is optional.

- **Disposal Provider**
  If a 3rd party, enter the name of the company providing the service. You add the record as a Supplier, which can also be managed in the Vendors and Suppliers view.

- **Data Destruction Certified**
  For some assets, regulation indicates that an explicit certificate of destruction must be kept. Click on Yes if this is the case and attach the document to VIZOR.

  ![Data Destruction Certified](image)

- **Salvage Value**
  Enter the salvage value in the field Salvage Value, Purchase Details tab. It will be used in the calculation of the Depreciation.
ENVIRONMENTAL DISPOSAL AND COMPLIANCE

Some assets require a specific disposal. This should be indicated in the field Requires Environmental Disposal.

You typically set the method in this Requires Environmental Disposal for the asset type, in order for all the asset instances to inherit it. The value can be overridden at the asset instance level.

VIZOR has a built-in query and notification called Disposal Waste Non-Compliance.

This query lists any retired asset for which the method of disposal is different from the one specified by regulation.

You may also want to use a query to find any asset of specific type that is retired and for which a Certificate of Destruction is not attached.

TO BE SCRAPPED ASSETS

To be scrapped assets in VIZOR is a special case. Users can only mark assets to be requested for scrapping. This status forces VIZOR to not retire but delete the asset record. This always triggers an email to the person with the role of financial director, indicating that the record of the asset will be completely destroyed. Only administrators can use this feature but you can remove it from all or enable it to a select group.
DETECTING AUTHORIZED SOFTWARE AND HARDWARE ASSETS

VIZOR helps you detect unauthorized software and hardware assets installed on the network.

FOR HARDWARE:

Run the Unauthorized Hardware query. The query includes and asset of a type that has been flagged as unauthorized and it may include specific attributes such as Manufacturer and Model. Modify this query for specific cases as needed.

The previous query is also used by the Unauthorized Hardware report and report subscription, which will automatically send the list of these devices to the appropriate members of the team and notify you when one is discovered in the network.

This report should be combined with the Computer Discovery and SNMP Network Discovery for most effectiveness.

To control this at the asset type level, set the field Unauthorized in Organization in the Asset Type record.

Unauthorized In Organization: Yes
FOR SOFTWARE:

Run the Unauthorized Software query in the Software Asset view. The query includes an asset of a type that has been flagged as unauthorized.

![Unauthorized Software query](image)

Similar to Hardware, use this query in the Unauthorized Software report and report subscription to will automatically send the list of this software if discovered in the network.

This report should be combined with the Computer Discovery with Software Installations for most effectiveness.

**Installations Catalog:** VIZOR automatically send you an email New Software Found in Network when a new title is found by discovery. You can then decide whether to Authorize it, Import it and map it to a Software Asset Type or not. Use the query Found This Week or click on the link from the email notification to see the list of new software found.

![Software Installations Catalog](image)
Installations: in a similar way, Installations has an email notification to alert you: New Software Installation Found in a Computer. Use this email notification to know if a new software installation has been found in a computer, even if the software title is already elsewhere in the network.

To control Unauthorized Software at the asset type level, set the field Unauthorized in Organization in the Asset Type record.

Unauthorized In Organization:  Yes

AUTOMATIC REMOVAL OF SOFTWARE INSTALLATIONS

If you have the Vector Discovery module, you can combine it with VIZOR to automate the removal of unauthorized software.

By default, any software installation found in the Unauthorized Software, will send an instruction to the the Vector Discovery module and the computer added to the special group Unauthorized Global.

In the Vector Discovery module, create an uninstall package or packages for each software to be uninstalled, using the proper command line (like msiexec). The command are executed automatically and silently on the computers members of this Unauthorized Global group.

If you do not have the Vector Discovery module, you can still automate this process via a VIZOR Action of type Execute Command and control the system that you are using to install or remove software, like ECM.
QUERYING CHANGES TO ASSETS IN A PERIOD OF TIME

You can look for changes that occurred to assets in a given period of time by using the report Asset Changes. This report allows you to find any assets for which one or more of the following fields changed:

a. Allocated to Person,
b. Allocated to computer
c. Location
d. Department
e. Unit
f. Project
g. Status

The complete, detailed information of all the changes per asset is available from the asset record in the History area.

Example of the report:

![Image of an example report showing changes in asset details]
If there are multiple changes to the asset in the specified time period, you will see a chronology of the changes as below:
You can specify multiple parameters such as time period, the asset Tag or Serial Number, or the person the asset was assigned to, or unassigned from.

<table>
<thead>
<tr>
<th></th>
<th>Report Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Show only changes in allocation to this person (enter complete name or part of it):</td>
</tr>
<tr>
<td>2</td>
<td>Show changes made from date (leave blank for any dates):</td>
</tr>
<tr>
<td>3</td>
<td>And until the date (leave blank for any dates):</td>
</tr>
<tr>
<td>4</td>
<td>Show only changes for the asset with the following Serial Number:</td>
</tr>
<tr>
<td>5</td>
<td>Show only changes for the asset with ID:</td>
</tr>
<tr>
<td>6</td>
<td>Show only changes for the asset with the following Asset Tag:</td>
</tr>
</tbody>
</table>
USE OF BARCODE READERS

Loading up the right user or inventorying resources’ locations at your organization can be a tedious task. Fortunately barcode scanning is up and ready to fill the gap.

The main areas where bar code scanning is used in VIZOR are as follows:

- Asset checking-in and asset checking-out
- Asset Inventory
- Add Asset

ASSET INVENTORY AUDIT WITH A BARCODE READER

Login to the “Location” view. Drill-down to a location that has Assets allocated to it and click the “View Assets” button for that location. Click on the “Inventory Audit” button. In the presented dialog, you can use a barcode scanner to scan multiple items to be audited for this location. Please note that the barcode must match the Serial Number or Asset Tag of an existing Asset in Vizor. That Asset must also be allocated to the Location you have selected. The “Last Audit” column in the list of Allocated Assets will be updated for all the Assets that were scanned.

Scan Assets

Scan with a barcode reader or enter the Serial Number or Asset Tag of the assets to audit.

- HHA-880A-312
- YYUS-2312
- YSBUUS-2311

Enter one asset per line and click Audit to start. Scanned assets registered in a different location will not be moved nor time-stamped.

Audit  Close
ADD ASSETS WITH A BARCODE READER

Login to the “Assets” view. Click on the “Add Assets” button. After selecting the Asset Type, go to the “Assets” tab. Select the “Add assets with the following additional information” option and then select the checkbox for “Serial Number” and “Asset Tag” (Vizor focuses on using these fields to search for specific Assets in certain areas. Its recommended that the barcode is entered into either of these fields). Select the text field for either Serial Number or Asset Tag, and then use your barcode reader to enter the value into the field. You can do this multiple times if you’re adding multiples of the same asset type into Vizor. Click the “Finish” button to finish adding the Assets into Vizor.
Add New Assets

<table>
<thead>
<tr>
<th>Owner</th>
<th>Serial Number</th>
<th>Asset Tag</th>
<th>Service Tag</th>
<th>License Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane Rose Dohan</td>
<td>0S-2202-K31</td>
<td>0S-2222</td>
<td></td>
<td></td>
</tr>
<tr>
<td>John Davis</td>
<td>YU-15-2312</td>
<td>0S-2223</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donald Nathan</td>
<td>HU-0804-4310</td>
<td>0S-2234</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The process Request Fulfillment deals with Service and Asset Requests. In VIZOR, Service Requests are part of the Actions VIZOR project and are sometimes referred to as Service and Asset Requests.

Service Requests are Action records of Action Type = Service Request.

Designing and preparing your Service Catalog, that is, the menu of services and assets that IT offers, is an important step.

The Service Catalog is located in the main menu, at the bottom.

Please note that users using the Service Catalog can open a Service Request directly from it by clicking on the Open Service Request button.
To designate an asset or service part of your service catalog, go to Manage Service/Asset Types and select the asset or service that you want to make part of the Service Catalog.

By default the list shows the Asset Classes, the first level that groups Asset and Service Types. You can create a new Service/Asset Class if you need to. It is a good idea to keep the list of classes short, for easier management and navigation.

You then see the list of Service/Asset Types. Select the Service/Asset Type that you want to add to the Service Catalog. If the Service you want to add is not in the list, it may be that it is hidden or that it doesn’t exist. Click on Add Service/Asset Type to add a new type.

In the details form, set “Can be Requested” to Yes.

You can also designate if only users that are members of some groups have access to this asset or service by setting the field “Accessible to Groups” If you do not specify any group, it is accessible to all groups. Set any other necessary fields and save.

Once your service can be requested, users will be able to open service requests via the Request Portal.

The Request Portal lists the Services and Assets that can be requested by users. Besides the name of the item to request, you can also add a description, a custom icon and other information you may want users
to know. In addition, it is easy to search in the Request Portal by just typing a partial name of the service, asset or part of the description.

Users can request a particular service by clicking on “Request” and filling out some extra information about the specific request.

Each user will only see the assets and services that are available to her depending on the groups she belongs to and the permissions set in “Accessible to Groups”.

![AutoCAD Logo](image-url)
SERVICE REQUEST RECORDS

By default, the Self-Service Request Portal creates a Service Request for the Service/Asset type chosen and to be allocated to the logged in person. This is designated by the field “Requested For” in the Service Request record.

Each Service Request Record has a unique identifier, the field called **ID**. This ID is an integer number and it is sequential by default.

**ADVANCED**

If you want the next ID to be a higher number, you can set the ‘base’ number in the table tblNextDefect in the DAT database of the project.

You can also add multiple records in this table if you want the ID to follow a specific sequence, or a random sequence.

STATUS AND STATE

The **Status** field is a special field that reflects the life-cycle of the Service Request record. The **State** field is associated and it is automatically controlled by VIZOR, it is set to **Open** or **Closed**.

To change the mapping of Status values to State values, use the same editor. The choice table for the **Status** list contains an extra column that maps Status choices to State choices. You must complete this column when you add or edit the choices in the **Status** list.
When you edit the **State** choice table, remember that the **Closed** choice sets the **Closed Date** and **Time** fields. So, for example, changing the choice text from **Closed** may confuse users.

**Notes**

If you edit the **Status** choice list, check that workflow rules based on the **Status** field are still correct for your needs.

**AUTOMATED TIMESTAMPS**

Like for other VIZOR records, VIZOR automatically keeps track of important timestamps associated to the life-cycle of the Service Request. For example:

- The Submitted Date and Submitted Time indicate when the Request was created or submitted.
- The Assigned Date and Assigned Time indicate when the Request was assigned to an Owner to be attended.
- The Closed Date and Closed Time indicate when the Request is closed, that is, when the State becomes Closed.
- The Last Updated Date and Updated Time indicate the last update to the record.
- Every change is also automatically timestamped and accessible in the History area from the toolbar of a record.
ASSIGNMENT TO A PERSON AND ROUTING TO A TEAM

The person responsible of fulfilling the Service Request record will be the Owner. You can designate the default owner of a Service Record depending on the Service/Asset Type in the Service/Asset Type Record, in the Life-Cycle > Request > Action Owner field. This can be set to a specific person or to a macro that resolves dynamically to a person based on her job title, role, etc.

In order to automate the routing of Service Requests to a designated support team (Work Team), specify the default Assigned Work Team for the Service Request per type in this form. You can also specify the Priority. If you need the routing rules to a Work Team to be based on other conditions, use the Workflow editor and create a business rule that sets the Assigned Work Team based on the conditions you need (see Business & Workflow Rules).

CATEGORIZATION OF THE REQUEST

Because a Service Request is created automatically from the Request Portal, it is automatically categorized in terms of the Service/Asset Type and Asset Class. In addition to this, you can use built-in fields such as Category, Location, Department, Organization, or custom fields for further categorization. You can let the end user set the categorization by making the field part of the Request, or you can also automate it via Business Workflow Rules, of the type Dependent Values or Possible Values (see chapter in this guide).
In addition to these methods, you can also set Default Values per User/Group (see Setting Default Values for a Web View Based on Users or Groups) or, if the logic is unique or too complex for the editors, you can create a macro (see Macros) and call it in the Default Value per field (Field Editor).

**IMPACT, URGENCY AND PRIORITY**

Aligned with ITIL, an Incident, Problem, Change or Service Request may have fields that help track the Impact, the Urgency and the Priority of the process in question.

The Impact measures the business criticality of the record, the extent to which an Incident, a Problem or the absence of a Service or Asset (not provisioned) leads to the distortion of business service levels.

**Urgency** is a measure of how long it will be until it has significant business impact.

**Priority** is a category that identifies the relative importance of an incident, Problem, Service Request or Change. Priority is normally calculated based on Impact and Urgency but it can be overridden under special circumstances.

Priority is set automatically based on the Priority Matrix, which can be modified to your organization needs in the Business & Workflow Editor.
ADDITIONAL DETAILS

As for Incidents, Problems and Assets, you can track details of the Service Request record in fields. By default, the Service Requests view contains a useful set:

- Submitter or request initiator
- Type of service requested
- Priority, Impact and Urgency
- Description
- Activity Log, with timestamp.
- Resolution description

*Note:* The activity log field listed above serves for entering with a timestamp of the date and time for any comment, investigation text, diagnosis details etc. It even identifies the submitter for a given text input.

More fields are available in the Field Editor for the Actions VIZOR Project. You can also create your own custom fields and export them to specific web views.

Also, like for Incidents and Problems, Service Levels can be specified and monitored for compliance (see SLAs and Escalation in this guide).
SERVICE REQUEST RECORDS AND REQUEST PORTAL

The process usually starts with the Request of the asset by someone. Employees and users can request assets and services via the Request Portal.

The Request Portal is accessible to all employees by default. You can change this by modifying the groups that can access the Web View “Request Portal” in the Web View Editor.

By default, the Request Portal allows users to request assets and services for themselves.

It is also possible to allow users to request assets for someone else via the Request Portal. Please contact our support team if you need this configuration.

The administrator of VIZOR can specify what Service or Asset Types are visible or not in the Request Portal. This is defined per Services/Asset Type. If you want a specific Services/Asset type to be visible in the Request Portal, open the definition of the asset type in question and set the field “Can be Requested” to Yes.
CUSTOMIZING THE REQUEST

The request of an asset presents the user with a form used to provide additional information needed to provision the asset. For example, VIZOR can ask the user the date when the asset is required for, or the number of assets to provide.

Some asset types may require additional information, for example, if your organization has two types of models for computers and you want the requestor to decide, you can add a custom field to the form for that particular asset type.

VIZOR comes with a number of commonly-used fields to choose from and you can decide if the field should be requested or not for that particular asset type.

To define the fields to include in the request, go to Assets > Manage Asset Types and select the asset type you want to change the request form for. Click on the Life Cycle tab and click on Request.

Add and remove fields from the list as you need.

Click OK to apply the changes and include the new fields in new request of that asset type.

DO YOU NEED A FIELD THAT IS NOT IN THE LIST?
If you need a field that is not in the list, you can create your own customized field using the Field Editor.

Go to Web Admin > Fields and select the Resources project. Click on Add to create a new field.

In order for this field to be used in the Request Portal, you need to:

- Create it in the **Request Details** tab
- Set **Is Visible** to No (clear the checkbox). This is so that the field is not visible for all asset types in general, but only the ones you explicitly define it to be.

See Chapter 28 - Fields for more information on customizing fields.

**CONTROLLING REPEATED SUBMISSIONS FOR THE SAME REQUEST**

It is possible that users try to submit a Service Request multiple times even though it is for the same need, that is for the same Service or Asset they have already requested.

In order to prevent this, VIZOR automatically tries to determine if there is already a Service Request for the same type and for the benefit of the same person already open and in progress.

This validation happens in the Request Portal just before a new Service Request is about to be submitted. By default, a message is displayed and guides the user to check the Pending Service Requests area, but still allows the submission.

It is possible in VIZOR to prevent the submission instead of just offering a warning. This configuration is more advanced and needs to be specified in the file CustomCode.bas. Once the CustomCode.bas is customized, it needs to be places in the CustomizedFiles folder, as explained later in this guide.
PENDING REQUESTS

Users can also check their pending requests inside the Request Portal by clicking on the button Pending Service Requests.

From this area, users can also modify an existing request after submission. The user can select the specific request and, if configured, change information like the required date or even **cancelling** the request.
As with other Web views, your organization can decide the level of detail the user is allowed to view about the Status of the Request record and the rest of the fulfillment process. For example, you can export Priority or any additional fields you want the user to see by using the Web View Editor. You can also determine if the end user should be able to change it to, or just view it (read-only).

CANCELLING REQUESTS

Allowing users to cancel a submitted request is useful in the following situations:

- The user realizes shortly after that the submission was a mistake or that the service/asset type was incorrect.
- The user realizes the submission is unnecessary for reasons like business changes, cancelled projects, etc.
- The user realizes there is an existing submission for the same need.
To handle these cases, by default in VIZOR, user can go to Pending Service Requests area and Cancel the request by changing the Status.

Note that the request can be cancelled only if it is in certain statuses that are cancellable, such as when it's "Awaiting Approvals". After these, the Request is in a status where there is no return.

Since your organization can change the Status of the life-cycle of the Service Request, you can also determine which Status are cancellable. You can remove the ability to cancel in WebAdmin > Workflow > Actions > Status Life-Cycle.

Once cancelled, An email notification is sent to the owner of the SRR, which you can customize via the Email Templates and the Notifications Editor.

### RE-OPENING REQUESTS

In some cases, you may want to allow re-opening service requests. There are usually two approaches:

- **[Default]** The special Status “Re-opened” is available for Service Requests. Users may reopen a request if it’s less than 3 days old. The way this works is via the flag “Can be re-opened” is Yes. By default this flag is set to 3 days and it can be modified. Administrators can always re-open a Service Request. You can modify this behavior or add more user groups to have this privilege by configuring the Business Rules in WebAdmin > Workflow > Actions > Status Life-Cycle.

- Designate a status by which the support team indicates completion but it is still open and to be validated by the person receiving the service. VIZOR includes the built-in status To be Verified for this case. If you implement this approach, you may want to have Requests automatically closed after X time of being in To be Verified.

End users can re-open the Request by going to “Pending Service Requests” and selecting the query “My Closed Requests”. The Status can then be changed to Re-opened and a text field “Reason for Re-opening” is displayed to explain the change.
Once re-opened, the request will then be displayed in the query “Re-opened Service Requests” of the support team and an email notification will be sent to the owner of the SRR. As usual, you can customize via the Email Templates and the Notifications Editor.

APPROVING REQUESTS

Once a Request for an asset is submitted, you may want to have it approved before fulfilling it.
To define if a particular asset type requires an approval and to configure the type of approval, go to Assets > Manage Asset Types and select the asset type you want to configure the approvals for. Click on the Life Cycle tab and click on Approval.

In this area you can define up to 3 levels of approvals, exceptions to the approvals and the minimum number of approvers.

VIZOR supports an unlimited number of levels of approval. Please contact support if you need more than the default 3 levels.

**MINIMUM REQUIRED APPROVERS**

When defining approvals, either for asset requests, change requests or any approvals in helpdesk tickets, you can define a minimum number of approvers.

Normally, an approval moves to the next status only when all the approvers have accepted. If there are five people in the approvers list, and only four have approved, the request stays until all five approvers approve or reject the request.
By using the Minimum Approvers field, the administrator can allow requests or tickets to continue to the next status as soon as a given threshold is met. If the “Minimum Approvers” field is set to 3, as soon as 3 approvers “approve”, the request will continue to the next status, whichever has been defined.

For asset requests, the minimum number of approvers is defined per asset type, and it applies to each one of the approvals. That is, if the minimum approvers is 3, approval level 1 will pass when 3 approve and then move to level 2, which will pass when 3 approve and move to approval level 3, which will again pass when 3 approvers pass it.

To modify the minimum approvers number, go to the “Asset type” view and follow the instructions as shown below:

1. Go to “Assets” in the quick links panel in your home page.

2. In the “Assets” view, click on the “Manage Asset Types” button in the right side tool bar to access the Asset Types view. Once in, click on the asset type that is going to be modified.
3. Once the asset type is selected, we can access the approval configurations by clicking on the "Life Cycle" tab and by clicking "approval" after in the life cycle graph.

4. The “Minimum Approvers required” field is located in the bottom part of the “Approval” window. This field will allow to set up a minimum of required approvers as well as specific approvers for each level for the asset type.
If you need the minimum number of approvers to be different per request, based on custom rules, this can be configured for asset requests, Change Management and Helpdesk tickets too. If you need this configuration, please feel free to consult with our technical support for more information.

In case the existing number of approvers for a request is less than the required number of approvers, the approval of all the current approvers will be needed for a status change.

For example, if there are only 2 approvers for a specific request and the number of minimum required approvers is 3, all the current approvers (in this case, 2) will need to approve to go into the next status, as if there was no minimum number of approvers.

FULFILLING REQUESTS

Once a Request for an asset is approved, or if no approval is required, the request goes to Fulfillment. During the fulfillment stage an action to fulfill the request is created and assigned to a person or to a team.

The assigned person will get an email notification with a link to view the request.

Once the assigned person logs into VIZOR, she will be able to see the request for asset fulfillment action inside My Actions area.

You can control how the fulfillment of the asset occurs in the Life Cycle tab of an asset type definition.
Configure the fulfillment by selecting how VIZOR should choose the asset to assign to the person requesting the asset:

- **Take one from stock**
  VIZOR will take a random asset instance of the requested type from the pool of available assets in stock (storage) and assign it to the person the request is for.
  Typical examples are software licenses, in which all instances in stock are essentially the same.
  This method does not require a person to fulfill the asset and therefore the process moves directly to the provisioning stage.

- **Create a new asset**
  VIZOR will create a new asset instance of the requested type and assign it to the person the request is for.
  Typical examples are Active Directory accounts, access to network shares, unlimited enterprise agreement licenses, etc.
  This method does not require a person to fulfill the asset and therefore the process moves directly to the provisioning stage.

- **Wait for manual allocation**
  VIZOR will wait for a person to select what asset instance of the requested type to assign to the person the request is for.
  Typical examples are computers and special hardware for which it is desirable to decide the specific item.
With this method, VIZOR puts the request action in the status “Approved – Pending Fulfillment”. It then requires the person assigned with the fulfillment action to go to My Actions, click on Fulfill an Asset and select the asset from the list before moving to the next provisioning stage.

When the fulfilling is manual, fulfilling the Asset from the request action is more efficient than allocating it in a different way because:

- You do not need to assign it to a person, it is automatically set to the person indicated in the request.
- You do not have to specify the return date if there is one, it is automatically set from the request.
- It automatically copies other requirements of the asset from the request into the actual provisioned asset.
- It automatically set the status of the selected asset to “Assigned”.
- It only displays assets that are available and of the requested asset type.
- It changes the status of the request action to “Completed”.

ADVANCED NOTES ON THE REQUEST-FULFILLMENT PROCESS

Requesting an Asset or Service from the Request Portal creates:

1. An **Asset/Service Request Specification** (Asset with UsageType = "Request Specification"
   a. Submitted Date & Time are set to the request time.
   b. The Contact (originator) and Submitter fields default to the logged in user, unless requesting for someone else, in which case Contact (originator) will be different.
   c. State=Open
   d. Asset_Status is set to Requested
   e. Asset_Sub_status is set to Requested
   f. The Request Specification is an instance copied from the asset type template, e.g. Laptop.

2. An **Action** for requesting, approving and fulfilling the asset
   a. Submitted Date & Time are set to the request time.
   b. Contact (originator) and Submitter default to the logged in user
   c. “Requested By” defaults to the logged in user
d. State=Open

e. Substate is set to Awaiting Approval 1

f. Action Type= Request Asset
g. Event Type= Request

h. UsageType= Employee

The action is used for the process of requesting, approving and fulfilling the asset.

The **Asset/Service Request Specification** contains the needs of the requester, which if approved will eventually be fulfilled with an asset instance.

Once Approved, the Action is passed to the Action Owner for fulfillment.

The owner of the action sees the fulfillment action in "My Actions" and the Fulfillment tab is visible.

After the fulfiller selects an available asset:

- The following fields are copied from the Request Specification to the selected Asset/Service Instance:
  - Owner
  - All the fields from the Visible Request Fields list for that asset type

- The following fields are set on the allocated asset instance
  - The status is set to “Assigned”
  - The Allocated to Person (Owner) is set with the value of Requested For or Contact
BILLING AND CHARGE BACKS

Your organization may want to keep track of all or some charges incurred by servicing the Service Requests for internal costs calculations or for actual billing and charge backs to other departments. VIZOR includes builtin functionality to facilitate this. Use the Amount field, a currency field, to keep track of the actual charges per Service Request record.

If the Amount field is entered, once the Request is Complete, two email notifications are sent:

1. Email sent to the contact indicating the charge

   ![Email notification](image)

   Hello Jane Rose Daren,
   The request has been fulfilled. A charge of $30 will be added to your cost center.
   Thank you for using the Vizor Request Portal.
   Sincerely,
   VIZOR Team

2. Email sent to Accounting in order to record the charge in the books.
You can modify these using the Email templates editor and the Notifications Editor.

You can also have the financial team subscribe to the monthly report with all the charges.

**ADVANCED**

Many accounting systems can integrate with external systems via email. A specified email address and format needs to be created to match the parsed fields required on the accounting system.
In VIZOR, you can create the email template using wild cards like `<F: (name of field)>`. You can also create a custom macro if you need additional integration capabilities.

REPORTING COSTS

In addition to creating your custom reports, VIZOR includes a built report that facilitates the reporting of costs, whether you use it for billing or for internal analysis. The **Ongoing Costs** report allows you to specify the period of time and whether to report the costs or charges by Cost Center, by Department or by Location.

The top area displays the Total Costs for the specified Period and the lower the costs broken down per Cost Center, Department or Location, e.g. per Cost Center in this example.
MEASURING RESULTS

Measuring the success of the operations providing the IT services is very important. Three techniques can help you in this process:
- **Resolution Codes**
  Categorize how the Service Request was completed or resolved. This will identify how close to satisfying the original request you were. Run a report on the different Resolution Code after and follow those over time.

- **Service Levels, time to resolution**
  As described in the SLA chapter, monitor real closure times against target times.

- **End User Surveys**
  Collect feedback from end users using surveys.

---

**ABOUT SURVEYS**

VIZOR includes default surveys that can be easily sent for end users to fill in after the request is closed. You can customize the questions you ask, any number, any type. Customized who gets the survey: Everybody? One in every 3? Only requestors of a new service or provider? Only for a special project, like upgrades of Windows?

---

**CREATING A NEW SURVEY VIEW**

Survey views are similar in functionality to a Submit-Only view. Access to the Survey view is usually done through a custom URL instead of through a Quicklink and no credentials are required on the user side in order to view it.

In order to create a new Survey view, open up the Web View Editor. Click the “New View” button, enter a View name to be used for the Survey, and then select the project the Survey will belong to. Click OK to create the view.

With the view created and selected in the Web View Editor, go to the “Web View” section from the list on the left side. Change the “View Type” to be “Survey View”.

Click on the “Attributes” button and find the attribute called “Web View Text”. Update the value here if you wish to show a message at the top of the Survey view. Click OK to close the Attributes dialog and then generate the web view. A message will show up asking for valid user credentials. This user will be used when submitting the surveys. Enter user credentials and continue with generating the view. You now have the base for your new Survey view. You can now start adding fields to it.

ADD/REMOVE FIELDS FROM A SURVEY

In order to add or remove fields from a Survey, open up the Web View Editor and load the Survey view (example: HelpDesk / Survey).

Select the “Fields” section from the list on the left side. In the “Tab” list, select the “Survey” tab. Its recommended that any new fields added specifically for surveys be added to this tab.

In order to make the fields available in the Survey view, make sure to move them from the “Available” list to the “Export To View” list. If you don’t want a field in the Survey view anymore, move it to the “Available” list.

ENABLING RATINGS UI FOR CHOICE LIST FIELDS
If you would like a choice list field to visually use a ratings UI instead of a dropdown list, this can be set in the Web View Editor. Make sure the field is in the “Export To View” list and then double-click on it (or select it and then click the “Attributes” button). Find the attribute called “Rating Field” and set it to “Yes”.

Once the view is regenerated, the choice list should now be using a ratings UI. Please note that the look of the ratings UI changes depending on the number of choices in your choice list. If there are only 2 options, then it will show an X and a checkmark as the options.

If you have more than 2 options in the choice list, then it will automatically switch to displaying stars for all the options.

MEASURING DEMAND FOR SERVICES AND ASSETS
As you manage your resources to provide the services in your catalog, it is very useful to identify what are the services and assets that are in most demand.

To do this, you can use the built-in reports Volume per Day, Requests per Type and Trendy Requests.

These reports can be given periods of time depending on your needs.

Volume per Day

This report allows you to know the volume that you are servicing, identify trends over time and days or weeks in which there are more requests.

<table>
<thead>
<tr>
<th>Reporting Period</th>
<th>Number of calls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

Requests per Type

This report helps you identify the top types of services or assets being requested in the specified period of time.
Requests by Type

Reporting Period : 
Number of calls : 25

Requests by Type of Service or Asset Requested in the specified time period. This report shows the top 10 based on the number of requests.
Trendy Requests.

This report identifies trends in the number of requests for a specific type. Based on the rolling average number of requests per month for each asset or service type, it then calculates the growth of that particular service or asset in the last month. The top 10 growing or trending types are displayed first, followed by the comparison of averages and last month requests.
In addition, you can also use ad-hoc queries and create new reports with virtually any field and condition to help in the analysis.
CHAPTER 8 - APPROVALS

Approvals can be used during various processes in VIZOR. You can approve a Request for an Asset or a Service, you use approvals before a Change Request. You can also approve the request for onboarding a new employee or a new account in your organization.

You can set an approval workflow for each individual type of asset, and you can also have different approvers depending on the requestor.

You can also set multiple levels of approval. Multiple levels of approvals are used when you only want certain users to approve a request after specific users have already approved it. For example, you may want a Director to approve a request but only after it has been previously validated and approved by a Manager.

VIZOR comes with three levels out of the box, but you can add any number of levels of approval to a given process.

DYNAMIC APPROVERS

There are some built-in macros that can be used for implementing dynamic approvers.

<EMPLOYEE MANAGER>

This person is the manager of the user for which the request is submitted for.

<EMPLOYEE SUPERVISOR>

This person is the supervisor of the user for which the request is submitted for.
**<ASSET RESPONSIBLE>**

This person is the person responsible of the asset type being requested. The name of the person with this role is indicated by the field Responsible in the details of the specific asset type.

These macros can make approvers be conditional by department or by the work team. For example, you may only want HR Manager of Department A to approve assets assigned to Department A employees, and may only want HR Manager of Department B to approve assets assigned to Department B employees.

**APPROVAL EXCEPTIONS**

You can add exceptions to specific levels of approvals for certain users. For instance, if all requests require a manager to approve, you may want managers to not require that level of approval. To define these exceptions, set the list of user groups where no approval is needed.

**DELEGATES**

VIZOR has the ability to grant another employee (or delegate) the ability to make approvals on your behalf.

You can do so by logging into the Employees web view and editing the employee you want to give approval rights to. In the Overview tab, find the “Delegate For” field and click the “Make XX My Delegate” button. This should add your name to the field. The employee will now be able to see any requests awaiting your approval.
NOTE:

We currently don't have a way to change delegation for users other than the one you're currently logged in as. So, in order to change the delegations for anyone that may have left the organization, you will need to do the following:

- Login to ConnectAdmin
- Click on Security tab -> Users button
- Find the user you want to change delegation for and click on them
- Update the "Authenticate With" field to use "VIZOR Authentication"
- Update the Password for the user (may need to save changes first before the fields will show up)
- Save the user
- Login to the Connect views and make the necessary changes to delegation
A Service Request is used to provision a Service or Asset of a specified types.

Once an instance of an Asset or Service is specified to fulfill the Service Request, the Actions defined in the Provisioning Actions area of the Service/Asset Type are executed.

You can customize the Actions that VIZOR will create, assign and potentially execute for each Service or Asset in the event of Provisioning.

EVENTS IN THE LIFE-CYCLE OF AN ASSET
At the moment, VIZOR supports the following events in the life-cycle of a service or asset instance:

- Provisioning
- De-provisioning
- On Repair

CREATE TICKETS IN PARALLEL... OR NOT

One of the main advantages of VIZOR Actions is that you can create multiple Actions in parallel so your team can work in a more efficient way.

Since an Actions can create a HelpDesk ticket (Incident or Problem), a Change Management record, a Service Request Record, etc., it means you can design the provisioning of your services and assets to include multiple tickets in parallel. This allows multiple people, including external providers, to work in parallel when possible.

In some cases the sequence of the actions is important. For example, installing software in a computer needs to be done only after the hardware has been prepared. For these cases, set the order

This Service/Asset type uses the following provisioning actions:

<table>
<thead>
<tr>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up hardware for new workstation</td>
</tr>
<tr>
<td>Update the BIOS</td>
</tr>
</tbody>
</table>

A typical example of this is for onboarding new employees. Use automated provisioning rules based on the roles of the new employee to start the several processes that are required to provision all the necessary assets and services. The actions will be coordinated and orchestrated by VIZOR, whether they are automated (like scripts) or not (a manual process documented in the VIZOR Action).

Using these techniques is the best way to also manage efficiently the automated deprovisioning of these assets or services when the person no longer requires them.

The deprovisioning actions are triggered automatically when the person leaves the organization or even when the person changes jobs that require different resources.
CAN I CREATE MORE TYPES OF ACTIONS?

Yes, the VIZOR Actions framework can be extended to have more adapters. Please contact Vector Networks for more information.

ENABLING AUTO_PROVISIONING

In order for the background services to attend provisioning and deprovisioning actions, you need to turn on the feature in the Configurations area.

Search for the setting “Execute Actions Interval” and set the interval to the frequency in minutes to check and run the automated actions.

APPROVAL ACTION

This action triggers a multi-level approval process where multiple approvers can take part. Required approvers are notified of the pending approval within the VIZOR system and via email, and they can approve or reject from the Web UI or directly from the email.

ACTIVE DIRECTORY ACTIONS

The following actions are built-in, via the VIZOR native AD adapter.

- Add user to Security Group
- Assign user to OU
- Change user password
- Create user account
- Delete user account
SET UP THE CONNECTOR FOR ACTIVE DIRECTORY ACTIONS

To set up the Connector for Active Directory Actions, you need to have an import rule with the intended Active Directory. Create this import rule in the VIZOR Import Manager. See the chapter on Integration with Active Directory for details on how to create and configure this rule (Integration with Active Directory).
CREATE HELPDESK TICKET ACTION

This action creates a helpdesk ticket, assigns it to a person or team, and monitors its status until completion. At the moment, out-of-the-box, only the VIZOR HelpDesk is supported.

EXECUTE COMMAND ACTION

This action runs an executable and passes dynamic information from Connect via macros. For example, you can execute a Powershell or a 3rd party tool.

CREATE CHANGE RECORD ACTION (CHANGE MANAGEMENT TICKET)

This action creates a Change Request in the VIZOR Change Management system. The change request is started and its Status monitored until completion.

SEND EMAIL ACTION

This action simply sends an email to one or multiple recipients based on a configurable template.

VIZOR ACTION
This action creates and monitors a Connect Action, which is essentially a generic task/issue inside Connect and assigned to a Connect user. It is only accessible inside the Connect system and it is useful for following up activities that are not tracked by other systems.

EXAMPLE TESTING LIFE-CYCLE AUTOMATED ACTIONS

1. Go to VIZOR Admin and in Options, set the "Execute Actions Mode" to 2, which will not execute the actions but only log that they would be executed, which is useful to testing.

2. Add a custom action to the Network Account Active Directory asset type on deprovisioning.

   Go to Manage Asset Types and select Network Account Active Directory.

   In the Actions tab and add one for an Execute Command.

3. Allocate an asset of type Network Account Active Directory to a user

4. To test the deprovisioning action, remove the asset from the user

   Select the asset assigned to the user in Assets, set the Allocated to Person to <None> and Save.

   You should see the new action created in My Actions view > Asset Actions.
CHAPTER 10 - ONBOARDING AND AUTOMATED USER PROVISIONING

VIZOR helps streamline the process of onboarding new personnel so they are consistently productive from day one. VIZOR coordinates and monitors the provisioning of the necessary resources, assets or access to services.

From the perspective of the employee or person, there are three types of events where Automated User Provisioning is used:

- The person joins the organization
- The person changes job/role
- The person leaves the organization

ONBOARDING: PERSON JOINS THE ORGANIZATION

The high-level cycle is as follows:

1. A person will be starting a new job/role in a few days. A manager uses the New Employee Onboard to notify this.

2. The account is automatically created in Active Directory.
3. Based on the role, VIZOR generates internally the equivalent of a list of Service & Asset Requests (see) to be given to the new employee.

4. VIZOR monitors the request for each asset using the Asset Life-Cycle Automated Actions.

5. The new hire gets all the equipment and access to systems needed.

---

**START THE ONBOARDING OF A NEW EMPLOYEE/ACCOUNT**

A manager, HR person or any person given that role may start the onboarding of a new employee/account. The process is available from the Employees view, but a shortcut from the homepage is also possible.
The manager or person submitting the new employee/account can see the Asset & Service the person will receive in the Assets tab.

Administrators of VIZOR can configure this form to not show the list of assets to the user as well as add/remove fields in the form. You can use any of the existing fields of a User account, as listed in the Web Admin > Field Editor > Users & Contacts, and you can create your own custom fields (see also Fields).
HOW VIZOR KNOWS WHAT ASSETS AND SERVICES TO GIVE TO THE PERSON?

VIZOR automatically starts the process of allocating and provisioning the assets needed by the person (by assets we also include any access to systems and services).

The list of assets is based on the role or multiple roles of the person, as defined in VIZOR.

The typical Automatic Provisioning rule is based on the Job Title but these rules can be also based on:

- Job Title
- Job Position
- Department
- Unit / Division
- Project

Authorized users can configure this by going to the Roles & Policies web view and then selecting the type of item to create the rule for:
As an example, select Job Titles and open the details of Administrative Assistant. Then click on the Automated Provisioning tab.
The list shows the assets and services currently defined to be given to users with this job title.

Click on Add Asset Types to give more to this type of users.

Apply your changes.

Note that only users that are given the role from now on will be getting the new assets or services. Adding new assets to the list does not affect existing users with that role.

You can add assets to be automatically provisioned in the same way for different roles, like for a Project and a Department, and all the assets will be added to the list if the roles apply.

HOW VIZOR PROVISIONS THESE ASSETS AND SERVICES?

Once VIZOR knows the list of assets and services to give to the person, it will create internal requests for each one. How each asset is given to the user depends on the rules for that asset type.

APPROVALS

Define if the asset still needs an approval or not when the process started from an Automated Provisioning rule in the Asset Type Life-Cycle, in the Approval stage. See more in Approvals.
Note the Request stage does not apply to Automated Provisioning.

Fulfillment or Allocation

What specific asset is allocated to the user is defined in the same way as if the request had started from an ad-hoc request from the Request Portal. You define this in the Asset Type Life-Cycle, in the Fulfillment stage. See more in Fulfilling Requests.

Provisioning

The rest of the provisioning for an Automated Provisioning also works in the same way as when the request start in the Request Portal. See how you define the Asset Provisioning actions in Asset Life-Cycle Automated Actions.
CHAPTER 11 - SOFTWARE ASSETS

SOFTWARE ASSETS

VIZOR Software focuses on managing your assets of class Software. Software Assets behave in general like any other asset, but they also have unique, extended characteristics and workflows that are exclusive to Software. For example, Software Assets have the following additional functionality:

- Software Licenses records
- Software Installations
- License Compliance
- Special Allocation/Deallocation

For more information:

Software Licenses
Software Installations
Software Asset Allocations
THE DEFINITIVE MEDIA LIBRARY

Making your software assets part or not of the Definitive Media Library will make your operations run more smoothly when it comes to fetching installers and other digital items more consistently. If an item is part of the DML it means your organization has a definitive source, seed, shared volume location or path from which the digital media can be disseminated from.

VIZOR helps you track the software that is part of the DML. By making a Software Asset Type be in the Definitive Media Library, the Software License record inherits the property and help you manage the DML.

A valid Software License Record would look like the screenshot below:
Check the DML catalog by running the query "In Definitive Media Library", as shown below.
CHAPTER 12 - SOFTWARE LICENSES

VIZOR helps you manage Software Licenses associated to Software Assets.

Each Software Licenses must be associated to a Software Assets, such as Microsoft Office.

If you plan to include multiple versions in the same license, do not add the version to the name your Software Asset, e.g. "Microsoft Office". However, in some cases, the license is restricted to a specific version, in which case is appropriate to name the Software Asset with the version, e.g. "Microsoft Office 2016".

In either case, you can further specify the Version, Edition and Language of the software covered by the Software License record.

EXPIRATIONS AND RENEWALS

You can get reminders via email when software licenses or subscriptions are about to expire or to be renewed.

By default, email notifications are sent 31 days before the End Date of a Purchase associated to a Software License. Emails are sent to the Contact and the Business Owner of the Software License in question, as designated in the Contact and Business Owner fields. The Software License must be active and the Purchase not Permanent (the duration) for the notification to be sent.

You can change the default time interval (31 days) and the recipients (Contact and the Business Owner) in the Notification Editor.

You can also create additional email notifications to meet the needs of your organization.

LICENSE COMPLIANCE STATE
License compliance is performed automatically by VIZOR on a regular basis (configurable).

Each Software License can have a Compliance State, which can be one of the following:

<table>
<thead>
<tr>
<th>Compliance Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliant – Optimal</td>
<td>Less licenses are used than entitlements, within a configurable threshold (%) that accommodates for near future growth</td>
</tr>
<tr>
<td>Non-Compliant</td>
<td>More licenses used than entitlements</td>
</tr>
<tr>
<td>Compliant - Over Licensed</td>
<td>Less licenses are used than entitlements, but there are many unused licenses, more than the expected near future growth</td>
</tr>
<tr>
<td>N/A</td>
<td>For the cases where either our calculations cannot set the compliance or the concept does not apply</td>
</tr>
</tbody>
</table>

A software license can be Compliant but exceeding a threshold (%). The threshold is

- Defined per software license
- The suggested action would be to sell licenses or renew fewer in the next contract with the vendor
- You can also define the threshold based on employee hires/terminations/job changes
LICENSING CALCULATIONS

The license calculation will:

- Calculate the total number of licenses used, according to the specified method
- It will take into account matching entitlements for:

<table>
<thead>
<tr>
<th>For each allocated User or Computer, the field...</th>
<th>Needs to Match the field in SW License record...</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Allocated to Organization</th>
<th>Entitled to Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Entitled to Location</td>
</tr>
<tr>
<td></td>
<td>Entitled to Department</td>
</tr>
<tr>
<td></td>
<td>Entitled to Project</td>
</tr>
</tbody>
</table>

The default Licensing Calculations included with VIZOR are the following:

Calculation Types:

<table>
<thead>
<tr>
<th>One License = One Computer installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>One License = One Named User</td>
</tr>
<tr>
<td>One License = One Computer CPU</td>
</tr>
<tr>
<td>One License = X Computer CPU Cores</td>
</tr>
</tbody>
</table>
One License = One Operating System

LICENSE COMPLIANCE OF OPERATING SYSTEMS

Tracking license compliance of Operating Systems is similar to tracking compliance of regular software installations, with some differences:

- Most software discovery tools do not report the Operating System as a “Software Installed” therefore they are not in the VIZOR Software Installations area.
- Because of the above, you will not see these entries in the various installations lists such as in the Software Asset, License Record or Computer Asset. The calculation is based on the Operating System reported by the discovery tool as displayed in the Computer Details tab.

To track license compliance:

- Create a Software Asset Type for the operating system to track, for example "Microsoft Windows 10".
  - While on the software licenses web view, click the “Software Asset Types” button in the right tool bar.
  - Click on “Add Asset type” and create the desired software asset type
In the Installations tab, set the option to "Automatically import future installations that match the following patterns and associate them to this asset type" to Yes. Then enter the name of the Operating System that you want to match, as it is displayed in the field OS Name in the Computer Details tab. Save.

Create a Software License for that Software Asset Type.
- Back in the “Software Licenses” web view, click on “Add new license” in the right tool bar.
- Look for the software you are creating the license for in the “Software” field and fill all other fields as needed.
• In the “Compliance” tab, change the Licensing Calculation to be **One License = One Operating System**

  **Asset Type: Microsoft Windows 10**

  Update the information for the asset type. Define here any Actions needed to provision or deprovision the asset **Microsoft Windows 10**.

  Automatically import future installations that match the following patterns and associate them to this asset type. Patterns:

  - Microsoft Windows 10

• You may also enter the Version in the Software License record if you only want to match a specific version for this record.

As for other compliance calculations, the calculations happen on a regular basis via a background process controlled by the configuration item “Assets Verification”. You can run it on demand by clicking on the button “Run Now” or regularly via the Interval. The Interval is in hours.

<table>
<thead>
<tr>
<th>Rule Name</th>
<th>Description</th>
<th>Last Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets Verification</td>
<td>Frequency in which VIZOR executes some verification tasks for assets, software and purchases. Automatic creation of assets from purchases, automatic assignment of asset types to software installations, purchase auto-renewals and auto-expirations, license compliance and bulk assets calculations.</td>
<td>10/27/2021</td>
</tr>
</tbody>
</table>
One report that could be useful when tracking Operating Systems is the report “Computers by Operating System”, in the Assets view.

DOCUMENTATION

Documentation related to a software license such as license certificates, purchase orders, invoices and can be uploaded against a license on the Documents tab.

Files can be uploaded to VIZOR directly, or linked to a file storage system such as SharePoint.
## Attachments

View and Manage attached documents from multiple sources.

<table>
<thead>
<tr>
<th>File Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software assurance Contract.pdf</td>
<td>7/6/2018 12:40:16 PM</td>
</tr>
<tr>
<td>License agreement.pdf</td>
<td>7/6/2018 12:40:56 PM</td>
</tr>
</tbody>
</table>
LICENSE PURCHASE CALCULATIONS

VIZOR allows you to track your licenses purchases, renewals, upgrades and other agreements and automatically keep your licenses calculations up to date.

VIZOR calculates these whenever a purchase is added, updated or removed in the Purchases tab.

- Number of Licenses are calculated using only the Active purchases.
- Costs over time (total cost, licenses costs, maintenance costs, and services costs) are calculated using the total of all the purchases, active or not.
- Average costs per unit (avg total cost, avg license cost, and avg maintenance cost) are calculated using just the active purchases.

RECOVERING LICENSES

For licenses based on Installations, one computer per license, for example, VIZOR will automatically recover the license and recalculate compliance accordingly.

For others, where there is a license file or key that must be removed from the device, use Deprovisioning Actions.

**Deprovisioning Actions.**

If the process cannot be automated, you should at least create the VIZOR action to document the process and ensure someone execute the procedure.

Create a HelpDesk ticket or a VIZOR action to make someone responsible of the recovery of the license.
Automated Recovery through a script: it is possible for some software to execute a script in order to remove the allocation of the license from a device. For example, VIZOR includes some power shells for removing a cloud SalesForce license or an Microsoft Office 365. Create a **Execute Command Action** to execute these scripts when deprovisioning the asset. The action will execute automatically when:

- The person leaves the organization
- The person changes job title and the new one no longer needs that asset
- The device is retired
- The device is assigned to someone else

This Service/Asset type uses the following de-provisioning actions:

<table>
<thead>
<tr>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disable Active Directory Account</td>
</tr>
<tr>
<td>Reset password</td>
</tr>
</tbody>
</table>

**Add New Action**

Enter the information for the new action.

<table>
<thead>
<tr>
<th>Details</th>
<th>Command</th>
<th>Execute When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Remove SalesForce License</td>
<td></td>
</tr>
<tr>
<td>Action Type:</td>
<td>Execute Command</td>
<td></td>
</tr>
<tr>
<td>Category:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-Category:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Description:
### RELEVANT FIELDS

Some important fields of the Software License record are:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Data Type</th>
<th>Choice List</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entitled Licenses / Number of Licenses</td>
<td>Single-Choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensing Model</td>
<td>Single-Choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensing Calculation</td>
<td>Single-choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licenses/Seats Installed or in Use</td>
<td>Set by the licensing calculation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last Licensing Calculation</td>
<td>Timestamp of last time the licensing calculation process executed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### License Calculation

#### Parameter

<table>
<thead>
<tr>
<th>Over-Licensed Threshold</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Allocated to Organization</th>
<th>Single-Choice</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(USERS.tblUser WHERE ...)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allocated to Location</th>
<th>Single-Choice</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(Roles.tblDts WHERE ...)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allocated to Department</th>
<th>Single-Choice</th>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(Roles.tblDts WHERE ...)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allocated to Project</th>
<th>Single-Choice</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(Roles.tblDts WHERE ...)</td>
</tr>
</tbody>
</table>
Licensing Model: the licensing model indicates how the software is licensed. Is it open source? Is it licensed per named user? The licensing model is important for categorization of the license records and it used for the calculation of compliance. It also determines the Licensing Calculation for some cases. The possible values are:

- Concurrent / Per Session
- Enterprise Agreement
- Freeware
- License Server - Floating
- Named User
- Network
- OEM
- Open Source
- Packaged - Single
- Per Computer/Device
- Per Server CPU
- Per Server CPU Cores
- Shareware
- Trial
- Utility-based (pay-per-use)

There are also other fields that belong to different entities and are used in the context of Software Licenses. For example, the following are fields of an Asset, a Computer Asset specifically, and are used for licensing calculations:

- CPU Count
- CPU Cores Count
- Virtual Machine
VIZOR helps you manage the installations of software across your computers, for the software assets that are important to you.

A Software Asset is typically associated to multiple installations, so you can see where and how that software has been deployed. You can also join installations of different software titles or packages as one Software Asset Type. In many cases, there are many software installations of different versions, editions and minor builds found by the Discovery layer that represent the same Software Asset type.

In order to do this, VIZOR synchronizes with your Microsoft Endpoint Configuration manager ECM (a.k.a. SCCM), or Vector’s own Inventory and Discovery component, and it automatically brings the relevant software inventory information discovered by them.

VIZOR allows you to focus on the software that is important to you by:

- Viewing only the Software Installations that you need to manage.

  You may need to manage specific software because of costs, size of deployment, license compliance, etc. About 80% of the installations found by discovery tools are not useful to be managed by organizations.

- Normalizing the Software Installations into Software Assets

  Normalizing or grouping all the multiple different installations and flavours of a software title as one helps you be more efficient and optimize its use.

ALLOCATIONS VS INSTALLATIONS
Allocations are normally managed by VIZOR using approval workflows and the App/Asset Request Portal. They represent the "should be".

Installations are found by a discovery layer, such as Vector’s own or Microsoft ECM, and represent what “it is found to be”.

Part of the optimization process is to ensure the Software “found to be” is closest to the “should be”.

There are some reasons why the allocations may not be the same as the installations for a given software license:

1. The allocation has not been defined yet for that software. This is especially true at the beginning of using VIZOR. As new requests and approvals for software are processed, VIZOR automatically handles them as allocations (the "should be"), but at the beginning allocations would be empty.

   Note: You can also import the allocations if you have the allocations or policies already defined elsewhere.

2. The provisioning is not complete. Maybe VIZOR has just allocated the license to the user or computer, and therefore it is reserved, but it is not installed yet. The actual installation can be automated via VIZOR and Microsoft ECM, AD GPOs or other software distribution tools.

3. There has been installations performed outside VIZOR. You want to know if it happens. Ensure you use VIZOR email notifications to alert you of this situation.

4. The de-provisioning is not complete. Similar to deploying software, it is possible that VIZOR has just removed the license from the user or computer, as when an employee leaves, but the uninstallation is in progress.

5. The Discovery of Installed Software is not up-to-date. The discovery tool may not be fully updated yet. This may or may not be a problem to attend. For example, if the discovery tool is configured to update the software inventory every 2 days, then it is expected to have up to a 2 day delay. This situation should be temporary.
RECONCILIATION AND IDENTIFICATION OF ALLOCATION VS INSTALLATIONS

VIZOR will automatically try to match the Software Asset instance that may be associated to a Software Installation found in your network by Vector Discovery, ECM, LanSweeper, etc.

For each installation CI record, VIZOR matches the title in the Software Asset Types library and a valid available Software Asset instance, based on the Allocated Computer or on the computer being used by the Allocated to Person.

Useful built-in queries:

**IN SOFTWARE ASSETS:**

- “Software Asset NOT Linked to an Installation”
- “Software Asset Linked to an Installation”
IN INSTALLATIONS:

- "Installations NOT linked to a Software Asset"
- "Installations linked to a Software Asset"

SOFTWARE LICENSE KEYS DISCOVERY

VIZOR integrates with third party tools such as Recover Keys that discover software keys installed in computers. You can view the discovered keys in VIZOR in the Software Installations area. Each discovered key is automatically assigned to the computer installation of the software title, which may have version and edition information.
Discovered keys are ‘found’ keys, and are different from ‘should be’ keys. That is, the keys used to install software in your network may not be the same keys you have as part of your entitlements. Entitlement keys are stored in the Keys tab in the Software License record (Software Licenses).

You can easily check what software titles you have discovered keys for by running the query **License Key Discovered** (set the Summary List Layout to **Key**) or any of the reports **Discovered License Keys by Application** and **Discovered License Keys by Computer**. You can also view the discovered keys in the Installations tab of the Software License record and the definition of the Software Asset type.

---

### INTEGRATION WITH RECOVERKEYS

What types of keys are integrated into VIZOR?

All the keys, serial numbers and license keys found by the tool RecoverKeys are imported into VIZOR and associated to a Software Installation.

---

### RECOVERKEYS DISCOVERY

The tool RecoverKeys is installed in one or more computers in your LAN. You don’t need a server for RecoverKeys.

When executed, RecoverKeys scans the network and discovers the license keys of the computers included in the target IP address range. In order to discover these keys, the Windows user running RecoverKeys must have administrator permissions in the target computers.
VIZOR helps your organization track the warranties of your assets efficiently. Each asset has warranty information such as
- Warranty Description: optional free text that may be useful to understand the warranty type, scope, etc.
- Warranty Status: to easily identify if the warranty has expired
- Warranty Start Date
- Warranty End Date
- Warranty ID: the identifier or name of the warranty as per the vendor

VIZOR also includes the following fields that may be useful when managing warranties:
- Support End Date: some devices have an end date of support for the device, after which time the device will not receive updates from the vendor or the operating system. For example, this is an important information for Chromebook devices because the Chrome OS will not receive updates after this date. This field can be found in the “Warranties” tab.
  The out of the box query “Support Ends In Less Than 6 Months” lists all the devices for which support will end in less than 6 months, as its name indicates. This query can help in keeping your team up to date and generate actions like preparing for device renovation.
- Assignee Insurance: if not blank, this indicates the person to which the device has been allocated has an insurance to cover the device repairs or lost incidents. In the case of schools, the insurance is often tracked per student.
- Number of Repairs: a counter of the number of repairs the device has gone through, which can be useful when managing its warranty.
- Is Lemon: if Yes, it indicates the number of repairs has exceeded a maximum threshold. This is often reflected in a decision to not repair the particular device again but retire it or return to the manufacturer instead.

AUTOMATICALLY OBTAINING THE WARRANTY INFORMATION

VIZOR can automatically get the exact warranty information for each device by communicating directly with the vendor. This is an excellent way to keep the records up-to-date in an efficient manner. The current vendors that support this functionality are:
To use this feature, the vendor requires you to get a client ID and a secret key that is unique to your organization. Please contact your vendor to get the necessary account information to get the warranty information from them using VIZOR.

Once you get your client ID and a secret key, log in to VIZOR as an administrator and go to Configuration. Search for “warranties” web view and open the configuration item specific for the vendor. Enter the client ID and a secret key, and save. VIZOR has an automatic process in the background that will regularly synchronize the warranties over time. The process updates a few warranties at a time, due to vendor constraints, and typically a few hundreds will be synchronized during a day.

You can easily monitor progress by using one of the built-in queries per vendor, like “Devices from Dell” and sorting by “Most Recently Updated”.

**VENDOR URLS USED**

VIZOR needs to communicate with the vendors to obtain the warranty information. You may need to open/allow communication through your firewalls for the following URLs:

- For Dell
  https://apigtwb2c.us.dell.com

- For HP
  https://api-csc-sgw.external.hp.com

- For Lenovo
  https://SupportAPI.lenovo.com
CHAPTER 15 - FINANCIAL
INFORMATION & PURCHASES

ASSET TYPES COSTS

VIZOR allows you to manage the standard or estimated cost of an asset or service type.

These costs can be displayed to the end users in the Request Portal to give an idea of the internal costs, whether they are actually charged or not.

To enter it, go to Manage Asset/Service Types and select the asset type you want to enter the cost for.

Enter Yes in “Has An Associated Cost?” and enter the “Associated Cost”.

<table>
<thead>
<tr>
<th>Has An Associated Cost:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated Cost:</td>
<td>$129.00</td>
</tr>
</tbody>
</table>

IMPORT COSTS FROM EXTERNAL SYSTEMS

You can import the standard cost of assets and similar information by using the VIZOR Import Manager. Use the import of Asset Type information. For example, select the option in the screenshot for importing from an excel file generated by the system that has the costs.
In the mappings, ensure the Associated Cost and the Asset Type fields are mapped.

You can map additional information that may be relevant.
COSTS OF ASSET INSTANCES

VIZOR allows you to manage the cost of each specific instance of an asset throughout its Life-Cycle. This is recorded in the Purchases tab of the asset instance.

Your associated costs are recorded with related purchases, which can be of different **Sub Types**: 

Filter values where the **Value Starts with**... 

<table>
<thead>
<tr>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>New License</td>
</tr>
<tr>
<td>Maintenance</td>
</tr>
<tr>
<td>Upgrade License</td>
</tr>
<tr>
<td>Services</td>
</tr>
<tr>
<td>Subscription</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Asset Purchase</td>
</tr>
<tr>
<td>Facility</td>
</tr>
<tr>
<td>Utilities</td>
</tr>
<tr>
<td>Required Personnel</td>
</tr>
</tbody>
</table>
See Asset Purchases in this guide for more information.

CATEGORIZING ASSET COSTS

In VIZOR, you can categorize the costs via the related Purchases and Purchase Line Items.

Typical field to use for categorizing the costs are:

Purchase Line Item **Sub Type**: main sub type are New Purchase, Maintenance, Services, Upgrade, Subscription, Facilities. The possible values were described in the previous section.

*Line Item Number:* 1
*Sub Type:* New License
*Asset Type:* Microsoft Visio 2016
*Quantity:* 43
*Total:* $6,751.00
*Description:* Visio Standard 2016

**Department**: allocate the cost to a department. This also sets the software asset instance as reserved for that department. Modify the list of Departments in Roles & Policies.

**Location**: allocate the cost to a specific Location. This also sets the software asset instance as reserved for that Location. Modify the list of Locations in the Locations view.

**GL Account**: allocate the cost to a specific entry in the General Ledger of the company.

**Cost Center**: allocate the cost to a specific cost center of the company. Modify the list of Cost Centers in the Choices Editor (Webadmin > Fields > Choices).

**Capex-Opex**: to categorize in Capital Expenditures vs Operational Expenditures.

**Fixed-Variable**: to categorize in fixed, having the same cost for the term period, vs variable, being variable depending on consumption or other variables.

**Direct-Indirect**: to categorize in direct to production or consumption vs indirect.
<table>
<thead>
<tr>
<th><strong>Duration:</strong></th>
<th>Permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start Date:</strong></td>
<td>2/24/2018</td>
</tr>
</tbody>
</table>

| **Department:** |  |
| **CL Account:** |  |
| **Capex-Opex:** |  |
| **Direct-Indirect:** |  |

| **Location:** |  |
| **Reference ID:** |  |
| **Fixed-Variable:** |  |
| **Line Item ID:** | 1121 |

- All the asset instances associated to this purchase have been created.
ASSET PURCHASE INFORMATION

The Purchase information for an Asset can be viewed and edited by clicking in the Purchase Details tab for that Asset. This information can be edited for multiple assets in a single transaction using the Mass Update functionality.

By default the following purchase information can be tracked per Asset.

- Purchase Reference
- Supplier/Seller
- Unit Price
- Purchased Date
- Delivery Date
- Service Contractor
- Warranty Description
- Expected Life
- Warranty Start Date
- Warranty End Date
- Warranty Status
- Warranty ID
- Depreciation Scheme
- Recurring Costs
- Salvage Value
- Book Value

Purchase information can be manually entered into VIZOR or come via an integration with a purchasing system.
PURCHASE AUTO RENEWAL

VIZOR can auto renew purchases to make management easier. Auto renewal can be enabled when in edit mode for a Purchase record in the "Auto Renew Purchase" slider.

HOW DOES THE AUTO RENEWAL WORK?

When the auto renewal date is reached, a copy of the purchase is created. The original purchase record's status is then set to "inactive" and the newly created record's status is set to "Active/Received". When the new copy of the purchase is created:

- The PO Number field gets cleared in the new purchase
- The start/end dates of the line items are updated based on the auto renew interval.
- The previous auto renewal date is used and the interval for the renewal is added to it. So if the date was March 1 and it renews monthly, the new record will have an April 1 date

Auto renewal is also controlled by the "Asset verification" configuration task. Here you can specify the time of the day when auto renewal happens and even manually trigger it.
DEPRECIATION SCHEMES

Depreciation is an accounting method of allocating the cost of a tangible or physical asset over its useful life or life expectancy. Depreciation represents how much of an asset's value has been used up and helps to tie the cost of an asset with the benefit of its use over time. In other words, the asset is put to use each year and generates revenue—the incremental expense associated with using up the asset is also recorded.

Vizor lets you calculate the current value of an asset based on built-in or custom depreciation schemes like:

- Degressive 10%
- Degressive 40%
- Degressive Duration of Contract
- Linear

Depreciation can be triggered from the “Depreciation” configuration item. To access this item:

- Log in and access find the “Configuration” quick link in the quick links widget in your home page and click on it.
- Once in the “Configuration” web view, use the search box at the top of the screen to find the “Depreciation” item.
• In the configuration screen below, follow the instructions: “Click on Run Now to process the depreciation of the assets specified in the query ‘To Depreciate’

• **Depreciation Date**
  - You can configure “Depreciation Date” and “Start of Fiscal Year” as needed in your organization.
  - This is the date up to which the depreciation will be calculated for assets. This is the ‘cut’ date, in many cases the current day when running the depreciation. If left empty, the current date will be used.
  - Only the day and month will be taken into account for the start of the fiscal year. The “Run Now” button will trigger the depreciation calculation for the assets in the “To Depreciate” view.
  - Having the ability to set this date allows you to calculate depreciation up to a period that passed, for example, set the depreciation book value for the assets to be on 01-January every year, but run it a few days later
In order to be in the “To Depreciate” view, assets need to meet the conditions below:

- Be an active asset.
- Price must be declared.
- The following fields must be filled out:
  - Depreciation scheme
  - Expected life (in years)
  - Book value.
  - Salvage value.

Go back to the “Purchases” tab to see the updated depreciation values.

HOW OFTEN IS DEPRECIATION TRIGGERED?

The Depreciation calculation does not run automatically. Use the Run Now button when you need to calculate it. Contact our technical support if you want the process to run on a regular basis.
ASSET AGREEMENTS AND PURCHASES

VIZOR tracks all agreements purchases, these can be searched and filtered showing recent purchases and agreement expiring.

Agreement and Purchase view shows all line items on the purchase and associated purchasing information such Cost Center, PO Number and Contact details.
SETTING UP ALERTS FOR LINE ITEMS AND PURCHASES

VIZOR can alert you when a line item or purchase is about to expire. You can set this alerts in the Purchases & Agreements web view inside a purchase record by selecting the line item and clicking on "Edit Alerts".

By default, these alerts are sent using the macro "<Purchase Stakeholders>" that sends to the Stakeholders of the Purchase Line Item, as well as the Contact, Stakeholders and Business Owner of the Line Item’s related License.

Stakeholders and the end date can be setup by clicking on the "Edit the Alert" button.
VIZOR helps you manage internal or external audits.

You can track if a specific asset is under Audit or if the complete Asset Type is under Audit.

The Audit tab contains information relevant to tracking these.

Under Audit: set it to yes when your organization is auditing this asset instance or asset type.

Under Dispute: there may not be an audit, but a contract dispute with the vendor or supplier. Set it to Yes when this is the situation.

Last Audit: date when the last audit concluded. This is useful especially if there is a new audit, to know when the last audit was. You can create queries like

Last Audit < <Days ago: 365>

that helps you identify regularity and vendor practices.

Audit Actions: keep track of all the activities related to the audit. Logged, timestamped and searchable.
PREVENTING CHANGES DURING AUDITS

In VIZOR, you can prevent any updates to asset records during an audit, as needed by some regulations and requirements.

To enable the modification audit lock, simply go to the Asset Type and set:

- Under Audit = Yes
- Prevent Updates During Audit = Yes

Save.

If any user tries to add new assets of this type, update existing asset records or delete one, VIZOR will prevent this and show the warning below until the completion of the audit (Under Audit = No).

Assets of this type are currently under an audit and no updates or additions can be made. Please contact the person responsible for this asset type for more information.
PHYSICAL INVENTORY AUDIT

In VIZOR you are able to do physical inventory audits. In order to perform an audit, and then check what was not accounted for:

Audit:

1. Inventory manager logs in to VIZOR and onto the Locations view
2. Navigates to and opens the inventory location record
3. Goes to the Assets tab
4. Clicks on the Inventor Audit button
5. Scans away everything into the popup
6. Clicks on the Finish button

As a result, everything scanned is automatically moved to this location and gets their field Last Audit timestamped.

Assess what was not accounted for:

In the Asset Tab, the list of assets has a column for the Last Audit timestamp. Anything in this table with a timestamp value that does not correspond to the one carried out just moments ago has not been accounted for.

WHEN IS THE LAST AUDIT FIELD UPDATED?

VIZOR sets the current timestamp to the Last Audit field on these events:

1. When the asset is scanned or entered in the Audit form in the Locations area. If the asset is in the correct location, the timestamp is set.

2. When the user to whom the asset is assigned confirms acceptance or reception of the asset, in the area My Items.

3. For Chromebooks, every night, if the Last Audit of the asset has no timestamp and it is assigned, VIZOR checks if the assigned person is in the Recent Users list. If the assigned person is found in the Recent Users, the timestamp is set.

4. For Chromebooks, every night, if the Last Audit of the asset has a timestamp older than 90 days, and it is assigned, VIZOR checks if the assigned person is in the Recent Users list. If the assigned person is found in the Recent Users, the timestamp is set.
CHAPTER 17 - INTEGRATION BETWEEN PROCESSES

VIZOR helps you manage the relationships between different ITIL process records. For example, an Incident may have an associated Change Management record. A Problem may have a few Incidents, etc.

FROM ASSETS

INCIDENTS
You can view all incidents related to an asset by clicking on the Asset instance and then going to the Related Items tab. Click on View Related HelpDesk issues and a new window opens with all the Incidents and Problems associated to this asset.

CHANGE RECORDS
You can view all Change Records related to an asset by clicking on the Asset instance and then going to the Related Items tab.
Click on View Related Change Requests and a new window opens with all the Change Management Records associated to this asset.

RELEASE RECORDS
You can view all Release Records related to an asset by clicking on the Asset instance and then going to the Related Items tab.
Click on View Related Release and a new window opens with all the Release Management Records associated to this asset.

ALERTS IN INCIDENT MANAGEMENT
If users are creating an Incident associated to a high priority asset, a message will alert them of the high importance of the asset to the business. The user may then consider this information when assessing the Impact, Urgency and Priority of the ticket.
FROM SERVICE REQUESTS

INCIDENTS
You can create a new one with Add, or link to an existing one with Link to Existing.

<table>
<thead>
<tr>
<th>ID</th>
<th>Owner</th>
<th>Contact</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>10005</td>
<td>Chris Hubbard</td>
<td>Demo User</td>
<td>Network cards not working</td>
</tr>
</tbody>
</table>
CHANGE RECORDS
You can create a new one with Add, or link to an existing one with Link to Existing.

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>Change</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000</td>
<td>Validating / Testing</td>
<td>Modify SSL Certificate</td>
<td></td>
</tr>
</tbody>
</table>

RELEASE RECORDS
You can create a new one with Add, or link to an existing one with Link to Existing.

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>Owner</th>
<th>Release</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000</td>
<td>Built</td>
<td>Donald Nathan</td>
<td>Upgrade BTT</td>
<td>High</td>
</tr>
</tbody>
</table>
ASSET AND CONFIGURATION RECORDS

Service Requests are linked to the Asset CMDB and configuration system in several ways:

- The Service Request is associated to the “Asset/Service Request Specification”, as described before. This “Request Specification” is a full asset or CI record in Assets that represents what is requested, the type, the characteristics, how it should be, etc. It may not be the exact way it was provisioned.

- The Service Request is associated to an Asset or CI Record in Assets for the fulfilled assets or services. Each record is an Asset or Service Instance, which is allocated, has life-cycle, access controls, etc. This can be an actual computer, a software installation in a computer, access to a Cloud system, etc.

- The Service Request may have triggered an action with an external Configuration Management System or CMDB via Provisioning Actions. The relationship and change with that external system is recorded in the action and, depending on the external system, it may have bidirectional information coming from the external system. For example, ECM may or an external CMDB may report back the completion of the deployment, or additional information about the installation. Another example would be with a system that generates electronic keys. VIZOR has integration with some providers in which the request for the change of code for the electronic key is made directly to the external system, which in turns returns the new serial number to VIZOR, or other documented Configuration records of the asset.

- The Service Request may had spawned a Change Record, which is itself related to a CI record.
CHAPTER 18 - ADMINISTERING VIZOR

CREATING PROJECTS AND GENERATING WEB VIEWS

A VIZOR project includes:

- A database of records of the main data you are tracking in that project (and their revision histories). For example, Incident and Problem records are in the HelpDesk VIZOR Project, Asset instance records are in the Asset/Resources VIZOR Project and Software License records are in the LicenseManager VIZOR Project.

- A database of definitions, which includes the queries, sorts, layouts, reports, notifications, fields, and tabs available in the project.

Each project can have multiple Web-based views.

Each Web view is customized to meet the needs of a class of users. For example, in HelpDesk, employees only need to see the issues they submitted not all the issues in the project database. On the other hand, support staff need access to all the issue information in the project database. Likewise, a person managing Software Licenses for only a specific department should only see the Software License records of that department, while the general Software Asset Manager person would be able to see the Software License records of all departments.

With VIZOR, you can provide separate views for different teams based on the VIZOR User Groups. Each view is accessed through the same Web-based interface.

Views are easy to define using the Web view Editor. Just choose the queries and fields that you want users to see:

- Queries determine which issues users can retrieve from the project database.

- Fields determine what information users can view and modify for each issue.
To create projects and edit definitions (of fields, queries, reports, sorts, layouts, and notifications), use VIZOR Admin, a Windows program. VIZOR Web Admin is a Web-based tool that allows you to remotely edit some of the project definitions (such as tabs and choice lists).

ADMINISTERING PROJECTS AND WEB VIEWS

EMAIL INTEGRATION

VIZOR email integration can be set for both incoming and outgoing emails.

Outgoing Emails are used for sending emails from VIZOR, usually automatically via the email notifications.
Incoming Emails are used for receiving emails into VIZOR and processing business rules around them. For example, they can be used to store email communication related to a HelpDesk ticket or to a Software Purchase. Incoming Emails are also used for converting emails to tickets in HelpDesk.

**INCOMING SETTINGS**

Access VIZOR Web Admin via a link such as: https://mycompany.VIZOR.cloud/connectadmin/.

If a subdomain is not yet set up for your VIZOR server, the link will be an IP address such as http://10.2.123.45/connectadmin/

Login using an account that has access to admin features. In most cases, the user will be:

- **Username:** admin
- **Password:** admin

This account is the default one available during initial configuration, but you may use any other administrator account. It is suggested to change the password of the admin user once all the configuration is completed.

Click the Email tab (Figure 1.1).

![Figure 1.1](image)

From the dropdown list, select the HelpDesk project (Figure 1.2).
On the far right, click Add a new Integration. A window will appear with multiple fields to fill out (Figure 1.3).

**E-Mail Address:** The e-mail address of this monitored account, such as support@company.com. It will appear by default as the “From” address of automated and manual replies to process e-mails.
**Hostname:** The hostname or IP address of the IMAP or POP server.

**Port:** The port through which the IMAP or POP server communicates. If the IMAP server requires SSL, enable this by checking the box.

**Logon:** The logon of the account used to access the IMAP server.

**Password:** The password of the account used to access the IMAP server.

Once all the information is entered, click on Test (Next to the logon and password fields). If the settings are correct, you will get a confirmation message as a browser alert. Otherwise, you will be alerted of an error, meaning one of the fields in the settings are incorrect.

The **Mail Handling** and **Issue Completion** sections of this window are typically done by the main contact of your VIZOR implementation project and are to be discussed, so you may skip these parts and click OK in the bottom right. The Integration will be disabled by default, and it is turned on once configuration is complete, and you are ready to go live with your new VIZOR system.

### OUTGOING SETTINGS

Click on **Mail Settings** (Figure 1.2). The SMTP settings are usually the same the incoming settings. You can test these outgoing settings by clicking the Test button (Under the password field) and entering an email address to which a test email will be sent to verify the connection (Figure 2.1). Like the incoming settings, you will see a success or error message depending on the validity of your settings.

![Test SMTP Connection](image)

**Figure 2.1**

In the next section under the SMTP settings, add the email addresses that will be used (Figure 2.2).
Figure 2.2

The first email address, just like the incoming settings, is used in the “From” of emails being sent. Also, emails can be sent at specific intervals. In this example, it would be every hour. The second email address is used for failed outgoing emails. Typically, an administrator would receive the notification. A maximum number of retries can be set, meaning the amount of tries before the failing email sends an error notification to the administrator. Once all the settings are filled out, click Apply in the bottom right. Your VIZOR email integration is now complete.

VIZOR ADMIN

VIZOR Admin is an application for administering VIZOR projects. For example, you can use it to:

- Create projects
- Customize fields
- Define queries, sorts, and layouts
- Define reports
- Define and set up e-mail notifications

To start VIZOR Admin:

On the Start menu, select Programs, Vector, VIZOR, Vizor Admin.

On the Start menu, point to Programs, click VIZOR, and then click Vizor Admin.
Web View Editor

Web View Editor is a Microsoft Windows application that creates Web views for your VIZOR projects. Web views are Web-based applications that provide access to projects through a Web browser.

To start the Web View Editor from VIZOR Admin:

On the **Tools** menu, click **Web** and then click **Web View Editor**.

The **Tools > Web > Web View Editor** command is available only when the Web View editor is installed on the computer running VIZOR Admin.

To start the Web View Editor from the Start menu:

On the **Start** menu, select **Programs, Vector, VIZOR, Web View Editor**.

On the **Start** menu, point to **Programs**, click **VIZOR**, and then click **Web View Editor**.

Notes

- VIZOR Admin and Web View Editor are installed on the Web server, by default. You can install additional copies of these tools on other computers, so you can perform administration tasks locally. However, to create new Web views, you must use the editor on the Web server.

VIZOR WEB ADMIN

VIZOR Web Admin is a Web-based administration tool. It allows you to perform the following administrative tasks over the Web:

- Manager users and user groups, and define group privileges (access to features and projects)

- Add and edit contacts

- Define workflow rules

- Create new tabs
• Set up choice fields

• Enable e-mail notifications

• Migrate projects to SQL Server and move projects to different SQL Server computers

• Move attachments to a different computer

To logon to VIZOR Web Admin, choose one of the following methods:

• In your Web browser, go to //server/vitadmin, where server is the name of your Web server.

• In VIZOR Admin, click Tools > Web > Web Admin.

• At the Web server, click Start > Programs > Vector > VIZOR > Web AdminStart > Programs > Vector > VIZOR > Vizor Web Admin.

In general, only user accounts of the types noted below are able to log in to the web admin (/connectadmin):

• VIZOR-Only
• Users that log in with the "classic" Active Directory accounts, not Azure AD and not Google, for example.

If users cannot successfully relocate databases or perform other tasks with VIZOR Web Admin, check that there is a global group named YOURDOMAIN\CensusAdminsGroup, and that the user (especially if the user is a domain user, not a domain administrator) is a member of this group.

VIZOR Web Admin uses your Windows credentials to run tasks if you are a member of the CensusAdminsGroup group or the local Administrators group on the VIZOR Server computer. Otherwise, VIZOR Web Admin runs tasks as CensusUser.

Members of the CensusAdminsGroup group (or of the local Administrators group on the VIZOR Server computer) have the required permissions to perform any task with VIZOR Web Admin. The CensusUser account, on the other hand, cannot perform IIS-related tasks such as unloading virtual directories (when logging off users), and may not be able to relocate databases to other computers.

During installation, the Setup program creates the CensusAdminsGroup group and adds all members of the domain Administrators group to the CensusAdminsGroup group. Setup also adds the
CensusAdminsGroup to the local Administrators group on the VIZOR Server computer. The purpose of the CensusAdminsGroup is to control access to Web Admin.

If Setup was unable to create the CensusAdminsGroup, you can create it manually.

For example, if you want to allow a domain user that is not a domain administrator (because domain administrators already belong to the local Admins group by default) to use the Relocation tab, you can create the CensusAdminsGroup and add the domain user to the group. This allows the domain user to perform tasks that are typically only available to local admins:

- Managing SQL Server databases and physical files.
- Logging off VIZOR users (which requires permissions to control IIS).

**TO MANUALLY CREATE THE CENSUSADMINSGROUP AFTER VIZOR IS INSTALLED:**

1. Create a global group named **CensusAdminsGroup** in the domain.
2. Add CensusAdminsGroup as a member of the local Administrators group of the Web server.

**GLOBAL CONFIGURATION OPTIONS OR SETTINGS**

VIZOR offers multiple global additional configuration options or settings to further tailor VIZOR to your needs. In VIZOR Admin you can find the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disable remembering last Summary List</td>
<td>If No, the last Summary List of the user will be used in the next session. If Yes, the default Summary List will be used</td>
<td>No</td>
</tr>
</tbody>
</table>
APPLICATION SETUP AND MAINTENANCE TASK

From time to time, we want to make sure VIZOR is up and running the best way possible. As with any other system, maintenance is needed to smooth up operations. This task checks several VIZOR processes that are critical, for example, it ensures some database tables are 'in good shape'. It also triggers some automatic allocation of assets, etcetera.

This task is usually run over night. To run it on demand, go to the "Configurations" web view and search for "Application" or "Setup". Select the "Application setup and maintenance tasks'. Click on "Run now" to run the task on demand.

If you would like to run it in a set interval instead, set it up in the "Interval" field. This indicates the interval in hours. You can also check out the next run and last run in their respective fields.

The next run can also be setup to an arbitrary date if needed:

1. Setup the desired date in the "Next Run" field.
2. Consider that after this run, the following time will be determine by the date you set up plus the interval set in the "Interval" field.
3. If the intention is to change this temporarily, change the settings back to the desired run time.
4. It is recommended that this task is run overnight as some tasks may be CPU or Memory intensive and could cause your VIZOR to run slow.
CHAPTER 19 - INTEGRATION WITH ACTIVE DIRECTORY

OVERVIEW

VIZOR integrates with your Active Directory in multiple ways:

1. Log in to VIZOR using your AD user.
   - Single-Sign-On (SSO)
     Allows your users to skip entering their user logon name and password if they are already logged in with their AD user in Windows or the browser.
   - Log in with AD credentials
     Your users enter their user and password in the VIZOR logon page, which is authenticated by AD. This mechanism is also used for Windows programs.

2. Import and synchronize user accounts automatically
   - Import and keep always synchronized user AD accounts as VIZOR Users
     Users can log on to VIZOR
   - Import and keep always synchronized user AD accounts as VIZOR Contacts
     Contacts cannot log into VIZOR but are contacts of tickets, stakeholders and people relevant to the processes in VIZOR. Emails can be sent to contacts.

3. Create user accounts in AD
   VIZOR can create user accounts in Active Directory automatically after certain events that can be configured. These are usually executed as part of onboarding users or on events of the life-cycle of an asset.

4. Modify membership of users to OUs and Security Groups
   Similar to the creation of accounts, but for adding and removing a user from OUs and security groups.
5. Reset Passwords of user AD accounts

Similar to the creation of accounts, but for resetting the password of a user.

INTEGRATING IF VIZOR IS IN THE CLOUD

How can VIZOR integrate with your Active Directory if it’s in the Cloud? Are there any limitations?

When VIZOR is in the Cloud, it can integrate in two ways:

- **Using the standard connection LDAP/LDAPS**
  The process is the same as when the VIZOR server is on the same network as the AD domain controller. You need to allow LDAPS communication to happen through your firewall. We recommend that this channel is limited to the VIZOR server only (by IP, for example). In addition, secured and encrypted user credentials is used.
  For LDAPS communication, the VIZOR server needs to trust the SSL certificate used by your Active Directory domain.
  Vector technical experts will help you with installing the certificate and configuring the communication between the systems.

- **Using Microsoft Azure**
  If you have migrated totally or partially to Azure AD or if you have an interface to your internal AD from Azure, VIZOR can easily integrate directly without the need of an LDAP connection.
IMPORTING USERS AND AUTHENTICATION

The Active Directory integration will require using the VIZOR Import Manager, which is a Windows application running on the server. If the VIZOR server is in the cloud, you may need a remote desktop connection to the server. You may do so by using the Windows desktop app (Figure 3.1).

HOW ARE USER ACCOUNTS IDENTIFIED AND SYNCHRONIZED?

VIZOR follows the following process in order to identify user accounts and determine if it’s an import or a synchronization. Importing will create a new user in VIZOR based on the Active Directory account and Synchronize will update an existing account in VIZOR with the respective account in Active Directory.

1. Match the SID

If the VIZOR user account has stored an SID, it first tries to match it with the AD SID.

If there is a match, no further search occurs and the account is synchronized. Under normal circumstances, all users are synchronized via the SID.

2. Match alternative unique fields

If there is no match for the SID, VIZOR will try to match based on a series of unique fields. The unique fields can be configured per VIZOR server and the default sequence is:

2.1 Match the primary E-mail address

Try to find a user account in VIZOR with a primary email address matching the primary email address of the AD user account.

If there is a match on the email address, no further search occurs and the account is synchronized. The AD SID is also stored in the VIZOR user account so future synchronizations are based on the SID.
2.2 Match the formula-based Full Name

If there is no match on the primary email address, VIZOR resolves the Full Name (in VIZOR) based on a configurable formula that uses VIZOR fields (usually retrieved from AD properties). The Full Name is the displayed name of users in lists and fields.

If the resulting Full Name of the formula matches a VIZOR account, no further search occurs and the account is synchronized. The AD SID is also stored in the VIZOR user account so future synchronizations are based on the SID.

For example, if the Full Name formula is:

"First Name Last Name (Username)"

And the formula is applied to an AD user that results in:

"Jane Rosen (jane.rosen)"

Then a search will try to find a user account in in VIZOR that matches exactly:

"Jane Rosen (jane.rosen)"

3. Create a new account

If there was no match using the previous approaches, a new user account is created in VIZOR and the SID stored for future synchronizations.
FIELDS AUTOMATICALLY SYNCHRONIZED

What user fields are automatically synchronized between Active Directory and VIZOR?

The following is the default mapping when using the default import rule:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>Active Directory Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible_To</td>
<td>company</td>
</tr>
<tr>
<td>AD_User_Status_Disabled</td>
<td>userAccountControl</td>
</tr>
<tr>
<td>Comments</td>
<td>description</td>
</tr>
<tr>
<td>Department</td>
<td>department</td>
</tr>
<tr>
<td>DN</td>
<td>distinguishedName</td>
</tr>
<tr>
<td>First_Name</td>
<td>givenName</td>
</tr>
<tr>
<td>Last_Name</td>
<td>sn</td>
</tr>
<tr>
<td>LastLogonDate</td>
<td>lastLogon</td>
</tr>
<tr>
<td>Middle_Name</td>
<td>middleName</td>
</tr>
<tr>
<td>nCompanyName</td>
<td>company</td>
</tr>
<tr>
<td>Org_Level</td>
<td>NULL</td>
</tr>
<tr>
<td>tEmailName</td>
<td>mail</td>
</tr>
<tr>
<td>tName</td>
<td>displayName</td>
</tr>
<tr>
<td>tUID</td>
<td>objectSid</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>tUserName</td>
<td>sAMAccountName</td>
</tr>
<tr>
<td>tWorkPhone</td>
<td>telephoneNumber</td>
</tr>
<tr>
<td>Phone_3</td>
<td>mobile</td>
</tr>
<tr>
<td>Phone_2</td>
<td>homePhone</td>
</tr>
<tr>
<td>tFax</td>
<td>facsimileTelephoneNumber</td>
</tr>
<tr>
<td>Supervisor</td>
<td>manager</td>
</tr>
<tr>
<td>Location</td>
<td>physicalDeliveryOfficeName</td>
</tr>
<tr>
<td>tUserNameAlt</td>
<td>userPrincipalName</td>
</tr>
<tr>
<td>Address_1</td>
<td>streetAddress</td>
</tr>
<tr>
<td>City</td>
<td>l</td>
</tr>
<tr>
<td>State_Province</td>
<td>st</td>
</tr>
<tr>
<td>Zip</td>
<td>postalCode</td>
</tr>
<tr>
<td>Country</td>
<td>co</td>
</tr>
</tbody>
</table>
HOW TO CONFIGURE THE INTEGRATION WITH AD (WHEN IT IS NOT IN AZURE)

Enter the IP address of the server along with a username and password. These should be provided to you by your main contact for the implementation project.

Figure 3.1

Once you have access to the server, click Start, then select **VIZOR Import Manager** (Figure 3.2). You will be prompted to enter credentials. Enter the credentials of an administrator such as the default admin account.

Figure 3.2

A list of imports will be shown. Select Import Users from AD, then click Edit (Figure 3.3). Click Edit again in the next window.
Figure 3.3

Clicking Edit the second time will display a window with fields to fill in (Figure 3.4). Sample values have been provided in the figure.
After filling in these fields, click Test to verify your settings. If your settings are correct or incorrect, you will get an appropriate alert. If your settings are correct but you still receive an error, it is possibly a firewall issue. In that case, you may need to contact your network administrator to solve the issue.

If the test was successful, click OK to close the settings window. You will be able to control when the integration happens (scheduled or immediate) by clicking on the edit button and changing the settings on import configuration section.
Click OK again to go back to the list of imports (Figure 1.3). To run the AD rule that was just edited, click Run Rule on the left side under the Edit button. Your users from AD will now be imported into VIZOR.

**TO IMPORT USER ACCOUNTS FROM AN ACTIVE DIRECTORY OR WINDOWS DOMAIN:**

1. **Log on to the User Account Import Manager, and click Next in the Welcome dialog.**

2. In the Import Rules dialog, click an import rule to specify the users you want to import.

3. In the Active Directory Servers and Windows Domains dialog, select an Active Directory LDAP server or a Windows domain.

   To add an Active Directory server, click Add LDAP. To add a Windows domain, click Add Domain.

4. In the Active Directory Servers and Windows Domains dialog, click the Active Directory server or Windows domain from which you want to import users.

5. In the Import Users dialog, choose one of the following options:
To import all users listed in the dialog, click **Next**.

To filter the list based on Active Directory groups, click **Add Filter** and select the groups to filter, then click **Append** to add the group filter to the current search filter, or click **Replace** to replace the current filter with the group filter. Click **Refresh** to apply the search filter.

You can also type additional LDAP search filter conditions directly in the **Filter** box. For example, 

"(cn=e*)" selects all users with user names starting with "e", and "(&(!cn=IUSR*) (!cn=CensusUser))" filters out all IUSR_<computername> accounts and the CensusUser account.

To filter the list based on Windows Domains groups, select the groups you want to import from the list.

To import some of the users, click **Selected Users**, then click the users you want to import.

6  In the Import Settings dialog, select the **Import as Contacts** check box if you want to import contacts instead of users.

7  To add the imported users to a specified user group, such as **Employees**, click the group to which you want to add the new users in the **Import to Group** list. (Note that imported users are always added to the **Users** group.)

8  To schedule imports, select the **When Scheduled** check box, then click **Configure**.
UPDATING ACTIVE DIRECTORY FROM VIZOR (VIA ACTIONS)

The following actions are built-in, via the VIZOR native AD adapter.

- Add user to Security Group
- Assign user to OU
- Change user password
- Create user account
- Delete user account
- Disable user account
- Enable user account
- Remove user from Security Group
- Reset user password

One important aspect to consider is that for VIZOR to be able to make changes in Active Directory, the user used by the AD connector in VIZOR will need different permissions in Active Directory.

What user VIZOR uses for the AD connector?

VIZOR uses the username you enter in the Active Directory connection settings dialog.

For being able to log in to VIZOR using your AD user and for import and synchronizing user accounts, the user only needs read-only permissions, and access to all the OUs and directories that you intend to synchronize.

For the VIZOR to create user accounts in AD or modify the membership of users to Security Groups, we suggest using the Delegation Model of AD in order to give the exact and minimum permissions needed. The idea is that this account should only have the ability to perform the tasks your organization requires VIZOR to do. Delegation of rights involves basic operations on objects, such as the ability to view an object, create a child object of a specified class, or read attribute and security information on objects of a specified class.

See Microsoft’s documentation on how to do this. We suggest you use the Delegation of Control Wizard to grant the "AD Operators" security group the allow "write members" permission or, guided by the wizard, select the "Modify the membership of a group" common task.

Please note that delegation is done at the Container/OU level. Permissions on Directory objects normally are inherited down in the tree.
AUTOMATIC PROVISIONING OF SOFTWARE VIA AD ACTIONS

To support the automation of installation of software already regulated by GPO or ECM package distribution, VIZOR facilitates the best practices in that it has built-in actions that add or remove users in the Active Directory to what should be software-specific access-granting Active Directory security groups.

In a similar way, for software deployed virtually without installation, such as via Citrix, VIZOR automatically adds the user that will “receive” the software to the AD Security Group that is used for that software title.

In a typical example, a Security Group called “SageUsers” would exists to control users who have access to Sage (the accounting software). If VIZOR receives an approved request for provisioning “Sage” to “Mike Morin”, then VIZOR adds Mike Morin to the group SageUsers.

Note that if the connector is set up to authenticate with AD with a windows account that has only AD read permissions, the connector may still import data but it will not support the GPO-ECM installation automation.

CHAPTER 20 - INTEGRATION WITH AZURE

OVERVIEW

VIZOR integrates with Azure to bring similar benefits to the integration with Active Directory:

1. Log in to VIZOR using your Azure user.
   - Single-Sign-On (SSO)
Allows your users to skip entering their user logon name and password once they have logged in to Azure

2. Import and synchronize user accounts automatically
   o Import and keep synchronized: user Azure accounts as VIZOR Users
     ▪ Users can log on to VIZOR
   o Import and keep synchronized: Azure accounts as VIZOR Contacts
     ▪ Contacts cannot log into VIZOR but are contacts of tickets, stakeholders and people relevant to the processes in VIZOR. Emails can be sent to contacts.

FOR IMPORTING USERS AND AUTHENTICATION

FIELDS AUTOMATICALLY SYNCHRONIZED

What user fields are automatically synchronized between Azure and VIZOR?

The following fields are automatically:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>Azure Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address 1</td>
<td>streetAddress</td>
</tr>
<tr>
<td>City</td>
<td>city</td>
</tr>
<tr>
<td>Country</td>
<td>country</td>
</tr>
<tr>
<td>Department</td>
<td>department</td>
</tr>
<tr>
<td><strong>E-mail 1</strong></td>
<td>Mail</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td><strong>First Name</strong></td>
<td>GivenName</td>
</tr>
<tr>
<td><strong>Full Name</strong></td>
<td>DisplayName</td>
</tr>
<tr>
<td><strong>Job Title</strong></td>
<td>jobTitle</td>
</tr>
<tr>
<td><strong>Last Name</strong></td>
<td>Surname</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>officeLocation</td>
</tr>
<tr>
<td><strong>Logon Name</strong></td>
<td>UserPrincipalName</td>
</tr>
<tr>
<td><strong>Mobile Phone</strong></td>
<td>MobilePhone</td>
</tr>
<tr>
<td><strong>Mobile Phone</strong></td>
<td>mobilePhone</td>
</tr>
<tr>
<td><strong>Mobile Phone</strong></td>
<td>MobilePhone</td>
</tr>
<tr>
<td><strong>Phone 1</strong></td>
<td>businessPhones</td>
</tr>
<tr>
<td><strong>State/Province</strong></td>
<td>state</td>
</tr>
<tr>
<td><strong>Supervisor</strong></td>
<td>Manager</td>
</tr>
<tr>
<td><strong>UID</strong></td>
<td>Id</td>
</tr>
<tr>
<td><strong>Zip</strong></td>
<td>postalCode</td>
</tr>
</tbody>
</table>
TROUBLESHOOTING SYNCHRONIZATION

When doing a synchronization with Microsoft Azure, you want to make sure the process is completed correctly. To troubleshoot the import or synchronization of your Microsoft Azure AD users, follow the next steps:

1. Go to the item "Import Users from Azure AD" in the “Configurations” web view and click on “Run Now”.

   ![Configuration settings for importing users from Azure Active Directory into VIZOR.](image)

   Please consider that for ad-hoc imports it’s better to use the “Run Now” button instead of setting the "Next Run". The time of the next run remains at midnight or at the desired time always. When "Next Run" doesn’t have any time, it means it is 00:00 hrs, so it starts at midnight.

2. Verify the synchronization occurred. You can check this in “Last Run” and in “Revision History”

   ![Importing users from AD “Last Run”](image)
3. Verify users got synchronized. Go to the Security web view. Select the query All and sort by Most Recently Updated.

4. Open the details of one or more users and verify the Last Imported Time is consistent with the last run.

5. If you are troubleshooting a specific account, view the details of that accounts and analyze the timestamps and history.
MAPPING MICROSOFT AZURE AD USER GROUPS TO VIZOR USER GROUPS

VIZOR allows mapping of user groups from external sources like Microsoft Azure AD. By doing so, you will be able to easily translate your Azure AD groups when importing users and have a better administration of views, accesses, permissions and other rules within of your organization.

In order to map user groups, follow the instructions below:

1. Login with an administrator account.
2. Go to the “Configurations” web view

![Configuration](image)

3. Go to the item “Import Users from Azure AD”

<table>
<thead>
<tr>
<th>Rule Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Import Users from Azure AD" /></td>
<td>Configuration settings for importing users from Azure Active Directory into VIZOR.</td>
</tr>
</tbody>
</table>

4. Scroll down and find the “Group mappings” configuration in the window that opens up

5. Click on the “Add” button

![Add](image)

6. Match the Azure AD group with the VIZOR group you want to map it with in the window that pops up

<table>
<thead>
<tr>
<th>VIZOR Group:</th>
<th>Admins</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Group Name:</td>
<td>Administrators</td>
</tr>
</tbody>
</table>
When clicking on “VIZOR Group”, a drop down list with all the groups that are defined up to that moment in VIZOR will show up. You can create any number of User Groups to fit the requirements of your organization and are managed from the VIZOR web admin.

Here are some examples of group mappings from Azure AD to VIZOR:

<table>
<thead>
<tr>
<th>Row</th>
<th>VIZOR Group</th>
<th>Import Mapping: External Group Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Admins</td>
<td>Administrators</td>
</tr>
<tr>
<td>2</td>
<td>Employees</td>
<td>VIZOR Users</td>
</tr>
<tr>
<td>3</td>
<td>IT Asset Managers</td>
<td>VIZOR IT Asset Managers</td>
</tr>
<tr>
<td>4</td>
<td>HelpDesk Analysts</td>
<td>VIZOR HelpDesk-Analysts</td>
</tr>
</tbody>
</table>

7. Click “Ok” to add the individual mapping you just created to the list. The buttons below can be used to add another mapping, edit current mappings or remove them.

8. Click “Ok” in the “Import users from AD” window to save changes. The next time an import is made from AD, these mappings will be taken into account.
CHAPTER 21 - INTEGRATION WITH GOOGLE

VIZOR integrates with Google (Google Admin, Google Workspace or Google G Suite) in the following ways:

1. Chromebook Devices in Google are added as assets and regularly synchronized.
2. Users can log into VIZOR using their Google credentials.
3. User accounts in Google are imported and regularly synchronized.
4. Through Email addresses to synchronize accounts.

After the first integration, VIZOR will update Google. Any change done on VIZOR will be reflected on Google when synched.

IMPORT CHROMEBOOKS FROM GOOGLE

Go to Configuration > Import Rules > Integration with Google for configuring the settings for integrating with Google Admin/Workspace. The integration will import and synchronize Chromebooks as VIZOR Assets and Google Users as VIZOR user Accounts.

Important: Set the Public URL configuration setting before entering this configuration.

The Interval is the frequency in hours for synchronizing the assets and users.

Import Annotated Fields: if Yes, VIZOR will synchronize in both directions the following Google fields:

- Annotated User
- Annotated Location
- Annotated Asset ID
The values of these fields from Google are imported into VIZOR initially. After, whenever the Allocated to Person, the Location or the Asset Tag is changed in the VIZOR asset, VIZOR will automatically update them in Google.

You can also specify the Lost OU. Devices with status Lost in VIZOR will be moved to this OU in Google. If you leave it empty, the device will be disabled in Google instead.

When importing from Google, the “Last Policy Sync” or when the device was last synchronized to Google's device management server can be found in the field “Source Time Stamp” in the “Source” tab.

To better manage your Chromebooks, the out of the box query “Recently Synchronized Policy” will list all the Google devices synched in the last 6 months.

---

**ANNOTATED USER VS RECENT USERS**

Annotated User is normally empty in Google Admin unless someone updates it. It is not updated by Google.

When the option to synchronize annotated fields in Google is enabled in VIZOR, the Allocated to Person in the device will be initially set from the value of the Annotated User during the full synchronization (daily by default). Likewise, when this option is enabled, changing the Allocated to Person in VIZOR will automatically update the value of the Annotated User in the Google Admin. This happens moments after the change is made in VIZOR and not during the full synchronization.

Recent Users is read-only both in Google Admin and in VIZOR, and it is controlled by Google. It is always mapped and synchronized from Google Admin to VIZOR.

Regardless of the option to synchronize annotated fields in VIZOR, the Allocated to Person may be set to the most recent user in some cases, like when the Allocated to Person is initially empty, or when the device is changed to “Request Status” in VIZOR. For more details and the other cases see the topic of Auto-Allocation on Recent Users.
The following is the default mapping when using the default import rule:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>Google G Suite Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain_Name</td>
<td>Org Unit Path</td>
</tr>
<tr>
<td>MqAssetOwnerLookup</td>
<td>Annotated User</td>
</tr>
<tr>
<td>(Owner) - Optional</td>
<td>Annotated Location</td>
</tr>
<tr>
<td>Location - Optional</td>
<td>Annotated Location</td>
</tr>
<tr>
<td>Asset Tag</td>
<td>Annotated Asset Id</td>
</tr>
<tr>
<td>Notes</td>
<td>Notes</td>
</tr>
<tr>
<td>OS_Version</td>
<td>OS Version</td>
</tr>
<tr>
<td>OS Name</td>
<td>OS Name</td>
</tr>
<tr>
<td>Serial_Number</td>
<td>Serial Number</td>
</tr>
<tr>
<td>MAC_Address</td>
<td>Mac Address</td>
</tr>
<tr>
<td>ComputerName</td>
<td>Device Id</td>
</tr>
<tr>
<td>Model</td>
<td>Model</td>
</tr>
<tr>
<td>Firmware Version</td>
<td>Firmware Version</td>
</tr>
<tr>
<td>VIZOR Field</td>
<td>Default Value</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>Source_Timestamp</td>
<td>Last Sync</td>
</tr>
<tr>
<td>tBriefDescription</td>
<td>Device Id</td>
</tr>
<tr>
<td>tSId</td>
<td>Device Id</td>
</tr>
<tr>
<td>Recent Users</td>
<td>Recent Users</td>
</tr>
<tr>
<td>System Version</td>
<td>Platform Version</td>
</tr>
<tr>
<td>IMEI / MEID</td>
<td>MEID</td>
</tr>
<tr>
<td>Ext System Enrollment Time</td>
<td>Last Enrollment Time</td>
</tr>
<tr>
<td>Support End Date</td>
<td>AutoUpdateExpiration</td>
</tr>
<tr>
<td>Google Status</td>
<td>Status</td>
</tr>
<tr>
<td>OrderNumber</td>
<td>OrderNumber</td>
</tr>
</tbody>
</table>

When available if the device was purchased with Google.

Default Values set in VIZOR:
TROUBLESHOOTING GOOGLE AUTHENTICATION

Having a way to authenticate when integrating Google. The authentication has to be set up with the relevant administrative Google account. An important property of said account is it’s permission level. To properly setup the authentication, this account has to have the correct permissions to access the data we need.

If the account used doesn’t have the correct permission level, the account won’t have access when VIZOR tries to get the data from Google. To setup the correct authentication:

1. Clear the existing cached credentials
   - Go to the Configuration item for the Google integration and change the tenant id. You can simply add TEST to the existing one to rename it back easily.

2. Enter new credentials:
   - Log in with a VIZOR account (not a Google account). Once the first synchronization attempt happens you will be prompted for Google credentials.

   Or

   - Log in to VIZOR with a valid Google account that has administrator permissions. This time you won’t be prompted for credentials, as clicking on the “Run now” button will take in your credentials automatically.
IMPORT USERS FROM GOOGLE

Go to Configuration > Import Rules > Integration with Google. The same connection parameters used for the devices is used for the users.

By default, all users from Google become users in VIZOR, belonging to the group "Users". Since everyone belongs to this group, only grant the minimum permissions and access to this group.

For proper permissions and categorizing users as Staff, Students, Teachers, etc, use the groups mapping.

By default there are three mapping rules, one for Staff, one for Students and one for Teachers. Edit the external names to match the names of the OU in Google or of a Google Group.

VIZOR supports mapping automatically from either OUs or Google groups or a combination.

If the external group name starts with a "/" it is assumed to be an OU, otherwise it is a Google group.

USER FIELDS MAPPED FROM GOOGLE

The following is the default mapping when using the default import rule:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>Google</th>
</tr>
</thead>
<tbody>
<tr>
<td>First_Name</td>
<td>Name</td>
</tr>
<tr>
<td>Last_Name</td>
<td>Name</td>
</tr>
<tr>
<td>Organization</td>
<td>(from parent organization)</td>
</tr>
<tr>
<td>Comments</td>
<td>Notes</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Department</td>
<td>Department</td>
</tr>
<tr>
<td>Email 1</td>
<td>PrimaryEmail</td>
</tr>
<tr>
<td>External ID</td>
<td>Id</td>
</tr>
<tr>
<td>Logon Name</td>
<td>PrimaryEmail</td>
</tr>
<tr>
<td>Phone 1</td>
<td>Phone 1</td>
</tr>
<tr>
<td>Phone_2</td>
<td>Phone 2</td>
</tr>
<tr>
<td>Phone_3</td>
<td>Phone 3</td>
</tr>
<tr>
<td>Location</td>
<td>Combination of building, room, floor, etc.</td>
</tr>
<tr>
<td>Address_1</td>
<td>First /main Address</td>
</tr>
<tr>
<td>City</td>
<td>First /main Address</td>
</tr>
<tr>
<td>State_Province</td>
<td>First /main Address</td>
</tr>
<tr>
<td>Zip/Postal Code</td>
<td>First /main Address</td>
</tr>
<tr>
<td>Country</td>
<td>Parent Organization</td>
</tr>
<tr>
<td>Job Title</td>
<td>Job Title</td>
</tr>
<tr>
<td>Employee ID</td>
<td>Employee ID</td>
</tr>
<tr>
<td>ID in Organization</td>
<td></td>
</tr>
<tr>
<td>Organization Unit</td>
<td>OrgUnitPath</td>
</tr>
<tr>
<td>Last Logon Time</td>
<td>LastLoginTime</td>
</tr>
</tbody>
</table>
CHAPTER 22 - INTEGRATION WITH POWERSCHOOL

VIZOR integrates with in the following ways:

1. Students in PowerSchool are imported as Users and regularly synchronized.
2. Active Staff in PowerSchool are imported as Users and regularly synchronized.
3. Schools in PowerSchool are imported as Buildings.
4. Through Email addresses to synchronize accounts.

USER FIELDS MAPPED FROM POWERSCHOOL (STUDENTS)

The following is the default mapping when using the default import rule:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>PowerSchool</th>
</tr>
</thead>
<tbody>
<tr>
<td>First_Name</td>
<td>First Name</td>
</tr>
<tr>
<td>Middle_Name</td>
<td>Middle Name</td>
</tr>
<tr>
<td>Last_Name</td>
<td>Last Name</td>
</tr>
<tr>
<td>Email 1</td>
<td>Student Email &gt; Email Address</td>
</tr>
<tr>
<td>External ID</td>
<td>(PowerSchool Internal ID)</td>
</tr>
<tr>
<td>Logon Name</td>
<td>Access Accounts &gt; Student Username</td>
</tr>
<tr>
<td>Field</td>
<td>Default Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Parent_Name</td>
<td>Parents &gt; Mother’s Name</td>
</tr>
<tr>
<td>Parent_2_Name</td>
<td>Parents &gt; Father’s Name</td>
</tr>
<tr>
<td>Parent_Email</td>
<td>Parents &gt; Guardian’s Email</td>
</tr>
<tr>
<td>Parent_2_Email</td>
<td>Parents &gt; Guardian’s Email</td>
</tr>
<tr>
<td>Organization</td>
<td>District Name</td>
</tr>
<tr>
<td>Location</td>
<td>Combination of school, grade, teacher, etc.</td>
</tr>
<tr>
<td>Grade_Level</td>
<td>Grade Level</td>
</tr>
<tr>
<td>Homeroom_Teacher</td>
<td>Modify Info &gt; Home Room</td>
</tr>
<tr>
<td>Lunch_ID</td>
<td>Modify Info &gt; Lunch ID</td>
</tr>
<tr>
<td>Employee ID</td>
<td>Student Number</td>
</tr>
<tr>
<td>ID in Organization</td>
<td></td>
</tr>
</tbody>
</table>

Default Values set in VIZOR:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can Log In</td>
<td>Yes</td>
</tr>
<tr>
<td>State</td>
<td>Active</td>
</tr>
<tr>
<td>Security Type</td>
<td>User</td>
</tr>
<tr>
<td>Category</td>
<td>Student</td>
</tr>
</tbody>
</table>
**USER FIELDS MAPPED FROM POWERSCHOOL (STAFF)**

The following is the default mapping when using the default import rule:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>PowerSchool</th>
</tr>
</thead>
<tbody>
<tr>
<td>First_Name</td>
<td>First Name</td>
</tr>
<tr>
<td>Middle_Name</td>
<td>Middle Name</td>
</tr>
<tr>
<td>Last_Name</td>
<td>Last Name</td>
</tr>
<tr>
<td>Email 1</td>
<td>Email Address</td>
</tr>
<tr>
<td>Organization</td>
<td>District Name</td>
</tr>
<tr>
<td>Location</td>
<td>School Name</td>
</tr>
<tr>
<td>Logon Name</td>
<td>Teacher Username</td>
</tr>
<tr>
<td>Lunch_ID</td>
<td>Lunch ID</td>
</tr>
<tr>
<td>Category</td>
<td>Staff Type (if not Teacher, then defaults to Staff)</td>
</tr>
<tr>
<td>Employee ID</td>
<td>ID</td>
</tr>
<tr>
<td>ID in Organization</td>
<td>ID in Organization</td>
</tr>
</tbody>
</table>
Default Values set in VIZOR:

<table>
<thead>
<tr>
<th>VIZOR Field</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can Log In</td>
<td>Yes</td>
</tr>
<tr>
<td>State</td>
<td>Active</td>
</tr>
<tr>
<td>Security Type</td>
<td>User</td>
</tr>
</tbody>
</table>

**INCREASING GRADE LEVEL FOR ALL STUDENTS IN VIZOR**

The VNConfig application can be used to increase the Grade Level for all students in VIZOR.

VNConfig will get the current Grade Level for all users with Category = Student and with a value in the Grade Level field and increase it by 1.

Exception - If the Grade Level value is K, the value will be set to 1.
CHAPTER 23 - SEARCHING AND QUERYING

SUMMARY LIST QUERY

Users can further refine the queried information by adding filters and using the simple search box.

AD-HOC FILTERS

Use filters for only showing data in the summary list based on conditions that use VIZOR fields. For example:

State = Open

Most of the times the conditions are in the form of Field = Value, but you can use other operators.

If you want to only show in the list records that have State=Open, do the following:

Click the “hamburger” icon in the middle of the top bar
Select the State field and the = sign operator

Select the "Open" value once the options load. Only single-choice or multi-choice fields will offer a list, type the text for others.

Click Ok.
The filter is now applied to the results of whichever query you are using (e.g. All issues, etc.) until you navigate away from the ticketing area.

Click The X to remove the filter when done with it.
SIMPLE SEARCH

Simple Search is the box on the right of the top of the summary list where users can quickly search by using text and without having to specify what fields to search that text in. VIZOR will search in multiple fields by the text entered. What fields are searched depends on each project. VIZOR will search in all the fields included in the query "Simple Search for Web views".

Every project has a query called Simple Search for Web views, accessible in the Query Editor. If the query does not have any fields, VIZOR searches in many fields, which may slow down the search.

Administrators can add or remove fields by using the query editor. Only the field name is used in this query, not the operator or the value.

When inside of the VIZOR Admin application:

1) Refer to the list of projects found on the left side of the VIZOR Admin window and click on the desired project.

2) Once a project has been selected, click on the Project tab near the top left corner of the VIZOR Admin window and then select Query Editor located inside.
3) You should then see a field containing the name of a query as well as table displaying field names, test conditions, values and operators for a given field as well as a code view and several buttons. In this area, select “Simple Search Fields for Web Views” in the Name field. The values in this table determine what the Simple Search will look for when performing a search.

4) From here, you can modify any of the values for existing rows in the aforementioned table as well as add rows and delete existing rows. Using the buttons to the right of this table will help with certain tasks.

5) When you have completed your changes to the table, you will need to click the Apply button that is located below the Code View.
By the default, the query is initialized with the following fields depending on the project.

For the assets Resources project:

- ID
- Name
- SN
- Asset Tag
- Model
- Allocated to Person

For the Users project:

- Full Name
- First Name
- Middle Name:
- Last Name
- Logon Name
- E-mail
- ID Within Organization
- Lunch ID
- Nickname
- Phone1
- Parent Email
- Parent Name
- Parent 2 Email
- Parent 2 Name
For the Helpdesk project:

ID
Summary
Description
Owner
Contact
Computer
Other_Asset
Resolution
ActivityLog

**Note:** Make sure to regenerate web views in the web view editor once finished so changes are applied to VIZOR.

For more information on regenerating web views you can refer to “When do you have to regenerate” in Chapter 40 – Planning and Developing a custom project

---

**SEARCHING WITHIN A QUERY**

While Simple Search defines what fields can be located through the search function, this will depend on the query the search is being performed in. The Simple Search will be applied to the selected query once a search is performed adding an internal “AND” to the conditions of the query. Let’s take the example below:

Searching for a computer that has been assigned to specific person under the “Unassigned” query will not return any results due to the conditions being in conflict since Simple search is not looking for the “Assigned” field.
Taking into account the default Simple Search conditions for the “Resources” project described previously and the “Unassigned” query for the same project, the search will look something like this:

(Status <> Assigned)

AND

(ID = 0 AND
Name = any AND
Serial Number = any AND
Asset Tag = any AND
Model = any AND
Allocated to Person = any)

On the contrary, searching on top of the “All Assets” query will return search results since there is no specific condition that is in conflict with the Simple Search’s conditions.

ABOUT QUERIES

To build queries in VIZOR Admin, select the Project you want to create a query for on the left. Click Query Editor on the Project menu. In the Query editor, use And and Or operators to combine multiple search conditions. You can control the order in which search conditions are evaluated using parentheses.

The standard format of a condition is:

    Field   Test   Value

For example:

NOTES

- To base a new query on an existing query, choose an entry in the Query Name list, click Copy, and name the new query.
THE BASE QUERY

Hidden in the web view is the base query. This query is always applied on top of any other query or search and is always appended to any other query selected from the list of queries located in the top toolbar to the left.

In example, we can create a query called "Assets I am responsible for" and export it to the "Assets" web view. It is possible to select this query along with another query from the list which shows all computers (Query: "Computers") or a query that shows all Dell Devices (Query = "Dell Devices") regardless of who the owner is.

If we apply the base query "Assets I am responsible for" to the "Assets web view" and the user runs the "Computers" query we can expect the following behavior:

The base query "Assets I am responsible for" will be acting underneath the "Computers" query and it will show something like this:

```
Responsible = <User> AND Asset Class = Computers
```

In practice, the combination of the "Computers" query and the "Assets I am responsible for" will show all the computers that the logged in user is responsible for. Putting base queries into use will allow for a more personalized and adaptable experience for managers and users alike.
HOW TO SET UP A BASE QUERY:

To setup a base query, the desired query must be created first. Log in to VIZOR admin and access the query editor (Project menu > query editor) in the project the base query will act upon.

1. Once the query is created, export the query using web view editor.
2. Head up to your VIZOR environment in your browser and access the web view where the query was generated to. Right click on the query option and click on inspect.

In the displayed code, look out for the numeric query ID value:

```
<tr>
<td class="queryMenuItem" onmouseover="this.className='queryMenuItem queryMenuItemHover'" onmouseout="this.className='queryMenuItem'" onclick="objFrames.GetFrameWindow(TOOLBAR_FRAME_ID).RunQueryFromList(10000)">Assets I'm responsible for</td>
</tr>
```

3. Back in Web View Editor, select the "Web View" option located in the left bar under the web view where the base query will be applied to.
4. Click on the three dotted button next to attributes and enter the numeric query ID of the base query.

5. Regenerate the web view. Once this is completed, the base query will work in the background along with any other query selected.

SEARCHING BY DATES

Use the <Today> value to match the current date. For example, you can search for all issues submitted or updated today.

To search against specific dates, double-click the Value box, then double-click a date in the calendar.

SEARCHING FOR UNASSIGNED ASSETS OR ISSUES

By default, the Owner field is set to <None>. You can use the value <None> in queries to find unassigned issues.
FINDING ASSETS OR ISSUES OWNED BY THE CURRENT USER

Use the value <User> to match the current user. With <User>, you can build generic queries that work for any user. For example, the My Assigned Issues query finds all issues assigned to the current user.

FINDING NEW ASSETS OR ISSUES

To find all issues that have not been updated since they were first submitted, search against the revision number: Revision Number = 1.

FINDING PARENT ISSUES

You can find the parent issues of a child issue by searching against the Child Issues field. For example, to find the parent issues of the issue 22, use the Advanced Query editor to search for Child Issues = 22.

To find all parent issues, use the Advanced query editor to search for Child Issues <> 0.

SEARCHING CHOICES LISTS WITH RELATIONAL OPERATORS

The relational operators are <, <=, >, and >. When you search choice lists with a relational operator, the search is based on the order of the choices in the list.

For example, if the choices in the Problem Area list are ordered:

Apps - Goldmine
Apps - MS Excel
Apps - MS Outlook
Apps - MS Word
Apps - Other

HW - Disk

... the query **Problem Area < HW - Disk** returns all the application-related issues.

When a choice list uses a non-alphabetical sort order, the sense of the relational operators is reversed. For example, if the **Priority** list is ordered:

- Highest
- High
- Medium
- Low
- Lowest

the query **Priority > Medium** returns issues marked **High** or **Highest**, and the query **Priority < Medium** returns issues marked **Low** or **Lowest**.
SAVING QUERIES

To save changes and continue editing, click **Apply**.

To save changes and exit the Query editor, click **Close**.

INSERTING PARENTHESES AROUND SEARCH CONDITIONS

When you combine search conditions with the **And** and **Or** operators, you may not always get the results you expect. For example, suppose you want to find all new issues with priorities **ASAP** or **Today**.

Status = New And
Priority = ASAP Or
Priority = Today

**And** has a higher precedence than **Or**, so this query finds all new issues with priority **ASAP**, plus all issues (not just the new ones) with priority **Today**.

To find only new issues with priorities **ASAP** and **Today**, click the **Priority = Today** search condition, then click **** to place parentheses around the conditions joined by **Or**. For example:

Status = New And
(Priority = ASAP Or
Priority = Today)

SEARCHING FOR STRINGS

The **Contains** operator performs a case-insensitive search for a string of text anywhere in a field. You can use **Contains** to search for keywords in the **Summary** or **Description** fields. This allows you to package common keyword searches such as predefined queries. For example:

Summary Contains printer
You can also use **Contains** to find all choices in a list that contain the same string of characters. For example, the choices in the default **Problem Area** list start with "HW - "", "Apps - ", or "System - ". So **Contains "HW - "** finds all hardware problems.

### SEARCHING FOR NULL VALUES

It is possible to perform a search to determine whether or not a value has been set for a field. When a field has no value, it is considered to be **<Null>**; on the other hand, when a field has a value, it is **<Not Null>**.

The following steps describe how these macros can be used in queries:

1. Open the **Query Editor** for the desired project.
2. Create the query using **<Null>** and **<Not Null>** as desired (use **Like** for the **Test** column).
   
   **Example:**
   
   Priority Like **<Null>** AND Severity Like **<Not Null>**
   
   **NOTE:** Searching for null values in **Date**, **Time**, and **Number** fields will require a few additional steps. Please contact support for more information.
3. Export the query to the Web view(s) and regenerate the view(s).

**NOTE:** Saved queries with **<Null>** and **<Not Null>** can only be used from the Web views, not from the Preview in the Admin editors.

It is also possible to use the **<Null>** and **<Not Null>** using the Ad-hoc Query editor of any given Web view. Simply select a Field, choose Like for the Test option, and type either **<Null>** or **<Not Null>** in the Value textbox.
SEARCHING WITH WILDCARDS

To provide flexibility in the specification of search patterns, the **Like** and **Not Like** operators support wildcard characters. Using wildcards, you can search for inexact patterns of text in any field.

<table>
<thead>
<tr>
<th>Wildcard</th>
<th>Matches</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>Any single character. For example: run_time matches <strong>run time</strong> or <strong>run-time</strong></td>
</tr>
</tbody>
</table>
| %        | Zero or more characters. For example: 

- **Contains run%time** matches any string that contains **runtime**, **run time**, or **run-time**.
- **Like Install%** matches any string that starts with **Install**.
- **Like %run%time%** matches the same strings as **Contains run%time**.

| [charlist] | Any single character in charlist. Can include spaces, but not the right bracket (]) character. For example:  

- **SP[56]** matches **SP5** or **SP6**
  - Use a hyphen to specify a range of characters. For example: 
    - **[1-36-9]** matches the digits 1, 2, 3, 6, 7, 8, or 9
    - To match the hyphen character, the hyphen must be either the first or last character in charlist. For example: 
      - **[-0-9]** or **[0-9-]** match any digit or a minus sign

| ![charlist] | Any single character not in charlist. For example: 

- **[!tb]rash** matches **crash** but not **trash** or **brash**

To search for the wildcard characters _ and %, you must enclose them in brackets. For example, to search for a percent sign, use the pattern `[%]`. 
USING MACROS IN QUERIES

A Macro in a query is part of a condition expression that is resolved at runtime, that is, its value is evaluated dynamically when executing the query.

For example, in a typical query condition expression:

<table>
<thead>
<tr>
<th>Field</th>
<th>Operator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>=</td>
<td>Peter Parker</td>
</tr>
</tbody>
</table>

the value is fixed to the user Peter Parker. However, using a macro <User> in the value:

<table>
<thead>
<tr>
<th>Field</th>
<th>Operator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>=</td>
<td>&lt;User&gt;</td>
</tr>
</tbody>
</table>

will cause the value to be the name of the person currently logged in to VIZOR.

Most of the macros used in queries are used in the Value part of the condition but custom macros can be created for the Field or Operator parts as well.

<IS ACCESSIBLE DEPARTMENT>

This macro is used to filter items (assets, records, etc) based on the department of the current logged-in user. The macro is used in queries where the field part is a single choice with Choice values coming from Departments. For example:

    Allocated to Department = <Is Accessible Department>
In the condition above, the query will return all records where the Allocated to Department is set to the same department as the one of the logged-in user, or any department if the user has the feature “Access all Departments” enabled.

The typical use of this macro is in named queries that are designated as the “base query” of a Web View.

For example, adding the condition expression

\[
\text{Allocated to Department} \quad = \quad <\text{Is Accessible Department}>
\]

to the base query of the Asset Library (Resources _ Library) Web view will ensure users can only see the assets allocated to the department they belong to, or any asset if they have enabled the feature “Access all Departments”.

The macro <Is Accessible Department> distinguishes between two types of users:

1. Users who can view or manage items (assets, records, etc) of their own department only.
2. Users who can view or manage items (assets, records, etc) of any department, or no explicit department.

---

**<IS ACCESSIBLE LOCATION>**

This macro is used to filter items (assets, records, etc) based on the location of the currently logged-in user. The macro is used in queries where the field part is a single choice with Choice values coming from Locations. For example:

\[
\text{Allocated to Location} \quad = \quad <\text{Is Accessible Location}>
\]

In the condition above, the query will return all records where the Allocated to Location is set to the same location of the logged-in user or any location inside. That is, if the user location is “San Francisco”, then items in locations “San Francisco \ Lombard St.” and “San Francisco \ Bay St.” will also be included.

Similar to <Is Accessible Department>, items in any location will be included in the results if the user has the feature “Access all Locations” enabled.

The typical use of this macro is in named queries that are designated as the “base query” of a Web View.

For example, adding the condition expression

\[
\text{Allocated to Location} \quad = \quad <\text{Is Accessible Location}>
\]
to the base query of the Asset Library (Resources _ Library) Web view will ensure users can only see the assets allocated to the Location they belong to, or any asset if they have enabled the feature "Access all Location".

The macro <Is Accessible Location> distinguishes between two types of users:

1. Users who can view or manage items (assets, records, etc) of their own Location only.
2. Users who can view or manage items (assets, records, etc) of any Location, or no explicit Location.

TIMEOUT DATABASE QUERIES

It may occur that certain database queries time out and do not complete successfully. This may affect certain data and functionality of VIZOR. When this occurs, the Windows Application Event log shows errors indicating the query failed because of a timeout from SQL Server.

This situation is normally caused by a SQL Server database being very busy at the time of the query. If this situation happens regularly, the best approach is to increase the capacity/performance of the SQL Server.

However, if this cannot be resolved in the short term, one alternative is to increase the time VIZOR waits for a query to be responded from SQL Server.

By default, Microsoft uses 30 s as the default timeout. If you need to increase it, you can do it by entering the new timeout in the following registry value:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\MetaQuest\CensusWeb\Server\1.0\TimeoutCommand
```

If the value does not exist, you can create the entry as a 32 or 64 bit DWORD. The value is in seconds.

If the value is changed from the default, the following entry in the Windows Application Event log will be added when the related *.exe process starts:

```
VNDataStore.GetCommandTimeout: Using custom timeout command: 60
```
THE AUTO – STATUS QUERIES

The Auto-status feature in VIZOR will allow you to easily manage your assets in the "Lost", "Retired", "In Repair" and "In Stock" status automatically. Auto-status is based on specific queries that are found in the query editor. The conditions must be set in each query, all the assets that match those conditions will be set to "Status = <x>".

When accessing the query editor, an invalid condition will be found. This is in order to avoid unwanted automatic status changes. This condition will need to be changed to the desired one so assets are set to the target status.

The auto-status is triggered on the following events:

- After any import of computer assets (Whether they are from Google, MS SCCM, Excel, etc).
- When the Application Setup Task runs (Usually every night)
- On demand through vnconfig.exe

The conditions in these queries can be link to any of the fields in the resources projects depending on the user's needs and can be changed at any time making this a very efficient and time saving feature for IT asset managers.
AUTO SET STATUS ON CUSTOM CONDITIONS

You can automatically set the status of assets to Lost, In Repair, In Stock, Retired based on your own conditions. This is useful for companies for which asset management is critical.

For example:

1. You have an external system that you are phasing out where you keep track of equipment in Repair. You import from the external system on a regular basis via excel. You can create a rule to ensure all assets in that list are In Repair in VZ.

   In the Auto-Status: In Repair query, set the conditions to:

   \[ \text{Import source} = \text{Assets from an Excel file} \]

2. You have retired all Iomega Drives and Compaq servers and you want to make sure any asset that meets these conditions is Retired:

   In the Auto-Status: Retired query, set the conditions to:

   \[
   \begin{align*}
   & (\text{Manufacturer} = \text{Iomega And} \\
   & \quad \text{Asset Type} = \text{CD Drive} \) \text{ Or} \\
   & (\text{Manufacturer} = \text{Compaq And} \\
   & \quad \text{Asset Type} = \text{Server} )
   \end{align*}
   \]

3. You have created a specific OU in the external system for Lost computers and you want to ensure the status in VZ is in sync.

   In the Auto-Status: Lost, conditions can be set to:

   \[ \text{Organizational Unit Like} \text{ <Enter OU Here>} \]
CHAPTER 24 - THE SUMMARY LIST

ABOUT SORTS

You can sort the Summary List by almost any valid record field, such as Asset Type, Location, Priority, State, Status, Owner, or any other field or combination of fields.

Users can also sort the list by clicking on one of the columns.

VIZOR allows you to define sorts, which are named sets of sort criteria. Sorts appear in the Sort list on the Summary toolbar.

To define a custom sort in VIZOR Admin:

1. Click Sort Editor on the Project menu to open the Sort editor.

2. In the Sort editor, choose the fields you want to use as sort keys. The first field is the primary sort key, the second field is the secondary key, and so on.

   For example, if you sort by Owner and Priority, all issues belonging to the same person are grouped together, and the issues for each owner are sorted by priority.

   To base a new sort on an existing sort, choose a sort from the Name list, click Copy, and name the new sort.
SORT ORDERS

**Choice Order Ascending** and **Choice Order Descending** sort the issues based on the order of the choices in the choice list, not on alphabetical order.

For example, a choice list may contain the values *High, Medium, Low* in that order. An alphabetical order for the sort list would be *High, Low, Medium* or *Medium, Low, High*, which doesn't make as much sense.
SAVING SORTS

To save changes and continue editing, click **Apply**.

To save changes and exit the Sort editor, click **Close**.

RELATED TOPICS

* Defining Sorts
ABOUT SUMMARY LIST LAYOUTS

Different queries can list different information in the Summary List. For example, a query that lists only the issues assigned to the user does not need to display the Owner column, unlike a query that lists all issues assigned to a group.

VIZOR allows you to define layout styles that specify the column layout and contents of the Summary List. Layout styles appear in the Layout list on the Summary Toolbar.

To define a layout in VIZOR Admin, click Layout Editor on the Project menu to open the Layout Editor.

Each column in the Summary List corresponds to a field. Choose the fields you want to list, and set the column widths and alignments. By default, field names are used as column headings, but you can change this by entering a new heading in the Title cell.

To base a new layout on an existing layout, choose the layout from the Name list, click Copy, and name the new layout.

SAVING LAYOUTS

To save changes and continue editing, click Apply.

To save changes and exit the Layout editor, click Close.
SUMMARY LIST LAYOUTS AND DRILL-DOWN

In order for drill-down to function in certain views (e.g. Asset Library), any layout that will be used with drill down must have the following fields in it (the width can be set to 0 so they are not visible in the UI):

- Usage Type
- Item Level
CHAPTER 25 - REPORTING

ABOUT REPORTS

Reports help you understand and assess the state of your project. A system like VIZOR contains a lot of valuable information. Reports allow you to access this information, break it down, analyze it, and present it.

VIZOR is thus delivered from the get-go with a vast variety of reports. One can choose at will what report to produce be it one whose parameters are already constrained for you and ready to go, or one from the large selection that give your team the flexibility to generate reports ad hoc, tailored to your information needs. Use these to produce your management reports going back to any historical record for any continuous period in time of your choosing by using the prompt for setting your ad hoc parameters. Specifically on the latter, see the sections below on Embedded Query Reports or on Creating New Custom Reports for more information on the Report Editor tool.

In addition to viewing the default reports included with VIZOR, you can create new reports in VIZOR Admin. To design reports in VIZOR Admin, click Reports on the Project menu, and then click Report Editor.

VIEWING REPORTS

You can view reports inside Web views. After you click on a Web view, you can access the list of reports available to you in that Web view by clicking on the Reports menu item on the top toolbar.

By default, Web views use HTML to format and display Listing reports, and Crystal Reports for custom reports (VIZOR includes the Crystal Reports Runtime Software).

VIZOR has two types of reports: HTML reports and Crystal Reports.

HTML reports are fully generated by VIZOR at runtime based on the fields and query specified in the Report Editor. Crystal Reports, on the other hand, are based on pre-created reports stored in *.rpt files.
Crystal reports have an additional option for viewing: The Interactive Report Viewer, which allows the user to zoom in/out, page and export to other formats.

VIZOR includes the Crystal Reports Runtime Software which is installed automatically on the server and allows this type of reports to be viewed from the web browser. You do not need to purchase Crystal Reports.

Another advantage of this type of report is that you can create more advanced reports. Using Crystal Reports, you can add features such as parameters, charts, formulas, field highlighting, and running totals to a listing report. You can also import graphics (such as company logos) and completely reformat the report.

To build new Crystal reports, you need a version of the Crystal Reports Editor in one computer in your organization (bought separately). The Crystal Reports Editor does not need to be installed on the VIZOR server. You use it only for modifying the *.rpt files used by VIZOR. This can be done from any workstation with Crystal Reports Editor installed, and once the *.rpt file is changed, it is uploaded to the VIZOR server.

Some reports have parameters that allow to customize the report at runtime. Depending on how the report is viewed, parameters can be accessible from the Report Viewer top menu, when using the Interactive Crystal Reports viewer, or prompted before viewing the report, as it is the case for PDF reports.

You can also view Summary, Time, and Listing reports in VIZOR Admin, within the Report Editor.

### TYPES OF REPORTS

In general, VIZOR reports can be categorized as follows:

- **Web or Listing Reports**
  - Standard
    - Tabular
    - Multi-column
  - Custom
    - VIZOR Query Report
    - Embedded Query Report
    - Standalone Report
- **Summary and Time Reports**
  These reports are deprecated and can only be viewed in the Report Editor (VIZOR Admin).

### STANDARD REPORTS
Listing reports are listings of information entered in records, such as tickets, issues, assets, people, etc. Use Listing reports to extract specific information from records.

For example, you can use a Listing report to print a summary of the resolution details for each resolved issue, or to print only the issue number, owner, and summary for each issue. With Listing reports, you choose a set of issue fields, and only those fields are included in the report.

Standard reports are generated by VIZOR without the use of a third party reporting engine. Standard reports are viewed in the Web UI as HTML reports.

**QUERY**

In the *Query* list, choose a query to extract the records from the database and include them in the report. For example, if you want a report that breaks down the open issue count, then use the Open Issues query.

**SORT**

Sorts the records.

**PAGE**

Header, footer, and title to apply to the report.

**TABULAR**

Tabular listings list records in the columns of a table. A tabular report is like the Summary List, except that you can use a report template to add things like a report title or page numbering.

<table>
<thead>
<tr>
<th>Issue Number</th>
<th>Priority</th>
<th>Submitted Date</th>
<th>Submitted Time</th>
<th>Progress</th>
<th>Assigned Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>This VWeek</td>
<td>12/11/2001</td>
<td>12:48:00 PM</td>
<td>In Progress</td>
<td>12/12/2001</td>
</tr>
<tr>
<td>3</td>
<td>This VWeek</td>
<td>12/11/2001</td>
<td>1:05:45 PM</td>
<td>Assigned</td>
<td>12/13/2001</td>
</tr>
<tr>
<td>5</td>
<td>Today</td>
<td>12/11/2001</td>
<td>4:38:20 PM</td>
<td>New</td>
<td></td>
</tr>
</tbody>
</table>

**MULTICOLUMN**

Multicolumn listings arrange record information into blocks; these are repeated down the page for each record.
Files

Standard reports do not have an associated file, they are generated at runtime based on the definition of the report, using the VIZOR Admin > Report Editor (the definition of reports are stored in the DEF database).

CUSTOM REPORTS

Custom reports use Crystal Reports and can have features that are not available with Standard HTML reports. Using Crystal Reports, you can add features such as parameters, charts, formulas, field highlighting, and running totals to a listing report. You can also import graphics (such as company logos) and completely reformat a listing report. To build custom reports, you need a version of Crystal Reports that is version 8.5 or beyond.

Custom listing reports appear in the same list together with Standard reports in the VIZOR Web Report Viewer. After you customize a listing report, you cannot edit it in the Report Editor. You must use Crystal Reports.

Custom reports also have an additional option for viewing: The Interactive Report Viewer, which allows the user to zoom in/out, page and export to other formats.

Files
All custom reports have an associated rpt file that is not generated at runtime, it must be created in advance.

CREATING NEW CUSTOM REPORTS

While VIZOR comes with numerous custom reports out of the box, it may be desirable to create additional custom reports. The process of creating such a report is as follows:

1. Open the Report Editor for the desired project.
2. Select the Listing tab.
3. Locate a report that has the Custom Report checkbox checked. If checked, this indicates that the report will appear in the Custom tab of Reports section of the Web views.
4. Click the Copy Report button. Choose a name for the new report, type it in, and press OK.
5. Press Apply to save your changes.

   Note: After doing this, VIZOR will have already saved two .rpt files in the CustomizedFiles folder allocated to this project. In order to view the reports in the Web views, they must be moved to the Web view folder. This can be achieved by regenerating the Web views that are related to the project.

   Example:

   CUSTOMIZEDFILES\#Project\HelpDesk\#AllWebViews#

   Please note that even though your customized reports will and should be placed in the CUSTOMIZEDFILES folder, reports part of the installation and developed by Vector are located in the SPTemplates folder.

6. Regenerate the Web views that are related to the project.

7. Navigate to the Web view’s Reports folder and locate the two .rpt files. From here you can use Crystal Reports to edit the .rpt files. If you wish to add, change, or remove fields, create cross tabs, or add new charts, you will need advanced knowledge of Crystal Reports. Please contact support for more information.
If the report name is "Open Issues - Age by Priority" then the filenames will be:

- Open$Issue$-$Age$by$Priority$landscape.rpt and
- Open$Issue$-$Age$by$Priority$portrait.rpt

or

- rptListingGOpen$Issue$-$Age$by$Priority$landscape.rpt
- rptListingGOpen$Issue$-$Age$by$Priority$portrait.rpt

Once the modifications have been made to both files, they must now be copied to the CustomizedFiles folder to ensure they will be included the next time the Web views are generated.

See Customizing Web View Files for more information on the CustomizedFiles folder.
LARGE REPORTS WITH LARGE DATA

Depending on your organization, you may have some reports that display or process a high number of records. For example, if you have many thousands of assets, running certain reports in real time may take minutes. An area where you may experience this is in Software Installations, because it contains all the designated software installed in each computer. This way, you may have 5,000 computers, each one with 100 software installations, resulting in 500,000 records analyzed by the report.

One way to improve the performance of these reports is to generate the report overnight, and only open the generated static report during the day. In most cases these reports will be equally useful even if the data is not retrieved in real time.

To pre-generate the report:
- Go to the Web Admin > Report Subscriptions.
- Select the desired project that contains the report.
- Create a new Subscription.
- Select the report and the format to generate it in. Excel is a good option for non-custom reports while PDF is a good option for custom reports.
- In the Type, choose "Save as file" and enter the destination file name. The destination should include both the full path and file name and be a path as seen from the VIZOR server, like: 
  C:\Program Files (x86)\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\Resources_Library\Reports\AllAssets.xlsx
- Choose an existing schedule or create a new one.
- Click Apply.

It is often useful to make that report available in the usual reports User Interface in the Web in VIZOR. See the topic Viewing a Pre-generated Report in the VIZOR reports area. for more details.

VIEWING A PRE-GENERATED REPORT IN THE VIZOR REPORTS AREA

You can make available to users a pre-generated report in the standard VIZOR reports area. This is particularly useful for viewing reports that are slow to generate on demand.

First, create a Report Page for the project in question and call it "SkipGenerate". The only thing important is the name. This will tell VIZOR to not generate the report but open one from the existing file.

Then, you need to create a copy of the report that is pre-generated, for example, if the original report is "All Software Installations", go to the Report Editor and create a copy of the report and call it "All Software
Installations - Daily. Set the Report Page to “SkipGenerate”. This report will be the one users access via the Web. Save.

Once created, export it to the desired Web views as usual using the Web View Editor.

Now we need to ensure the file is generated and it exists in the folder used for runtime reports. For this, we need the scheduled generation of the original report to save the file to the `/CensusWebVD/Reports` folder.

Go to the Report Subscriptions area and locate or create one for generating the original report to a file. In the full path of the file to save change the folder to be the “Reports” folder of the CensusWebVD of your Web views. By default it will be something like:

```
C:\Program Files (x86)\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\Reports
```

Set the file name to the name of the report with each space replaced by a "\$". You can also take the name from the DEF database in the table tblSystemCustomReports, from the column tReportName of the record that represents the report in question.

Add the proper file extension, like “.pdf” or “.xlsx”. So, the path will be something like:

```
C:\Program Files (x86)\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\Reports\SWInst.pdf
```

You can now view the report in PDF from the Web view.

**TYPES OF CRYSTAL REPORTS IN VIZOR**

Depending on how the data is retrieved, there are three types of crystal reports in VIZOR:

1. Dynamic Query
2. Dynamic Connection
3. Stand-alone

Query can be modified in VIZOR

Report works automatically for new VIZOR projects and relocated databases
HOW IS THE TYPE OF REPORT INDICATED?

The type of report is indicated by a formula field called **DSType**.

If the report does not have a formula field with this name, you can create it.

If the value of DSType tells VIZOR how to treat the report. The following are the possible values:

<table>
<thead>
<tr>
<th>DSType Field</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Query</td>
<td>4</td>
</tr>
<tr>
<td>Dynamic Connection</td>
<td>1</td>
</tr>
</tbody>
</table>
Note: Two variants of the Dynamic Connection type are also available, although deprecated now:

- Dynamic Connection using a DSN = 2
- Dynamic Connection using a UDL = 3

1. DYNAMIC QUERY REPORT

For this type of report, VIZOR uses the rpt Crystal Report and injects the data from a query executed by VIZOR, not inside the Crystal Report. The data is controlled by the query defined in the Report Editor just as it would be for Standard reports.

The actual SQL statement is not known to the report and the VIZOR engine passes the actual data to the crystal report inside a virtual table called 'ado'.

Selecting the data to include in a report

In the Query list, choose a query to extract the records from the database and include them in the report. For example, if you want a report that breaks down the open issue count, then use the Open Issues query.

Selecting the fields to include in a report

In the Fields list, choose any of the fields available for that VIZOR project or database. Adding or removing fields from the list cause VIZOR to pass these fields as the data input provided to the Crystal Reports. How the field is used or displayed is controlled by the Crystal Report and can be changed in the usual way as for standard Crystal Reports.

From within Crystal Reports, fields passed to this type of report appear in Database Fields as a virtual single table called "ado", regardless of where they actually exist in a database.
ADDING FIELDS TO A DYNAMIC QUERY REPORT

1. In VIZOR Admin, select a project and open the Report Editor. On the Listing tab, add one or more fields to a custom report. You can insert the new fields anywhere (for example, in between two existing report fields).

2. Log on to a Web view of the project and view the custom report.

   VIZOR dynamically adds the field when you view the report BUT VIZOR does not save the changed report. You have to do that yourself (see step 3).

3. From the report viewer, save the report in the Reports folder. Do this for both the Portrait and Landscape versions of the custom report.

   The Reports folder is located in the ConnectServer folder. For example:
   
   C:\Program Files (x86)\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\HelpDesk_HelpDesk\Reports

4. In Crystal Reports, open one of the .rpt file you just saved. The report includes the new field (to check: in the Field Explorer, expand Database Fields and then expand ado).

   Note that if you insert the new field into the report and then try to preview the report, Crystal Reports will display an OLE DB Provider dialog box and prompt you to select a data source.

   When this happens, just click Cancel. VIZOR sets the data source at runtime. If you want to be able to preview changes in Crystal Reports:

   ▪ Save the report. If you get a "Unable to Save Data With Report" message box, click No.

   ▪ In the Web view, view the report and save it again (this time the saved report will include the data required by Crystal Reports for previewing).

   ▪ Open the report in Crystal Reports: now you can preview the report without being prompted for a data source.

5. Copy the modified .rpt files to the CUSTOMIZEDFILES folder. If you don’t, your modified custom reports will be overwritten the next time you generate the Web view.

   Note: In general, any time Crystal Reports asks you to either use saved data or refresh data, use the saved data. Refreshing the data requires that you select a data source, and the data source should be set only by VIZOR at run time (when a user views the reports).
REMUTING FIELDS FROM A DYNAMIC QUERY REPORT

6 In VIZOR Admin, select a project and open the Report Editor. On the Listing tab, remove a field from a custom report.

7 Log on to a Web view of the project and view the custom report.

   When you view the report, VIZOR dynamically updates the list of fields included in the report BUT VIZOR does not save the changed report. You have to do that yourself (see step 3).

   **If you get a “This field name is not known” message**, then the field is used in a formula somewhere in the report. If this happens, you must open the .rpt file in Crystal Reports, find the formulas that use the field, and remove all references to the field.

   If the field was displayed in the report, or used to define a chart, you’ll see a blank space in the report where the field or chart were supposed to be.

8 From the report viewer, save the report in the Reports folder. Do this for both the Portrait and Landscape versions of the custom report.

   The Reports folder is located in the ConnectServer folder. For example:

   `C:\Program Files (x86)\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\HelpDesk_HelpDesk\Reports`

9 In Crystal Reports, open one of the .rpt file you just saved. The report no longer includes the field you removed (to check: in the Field Explorer, expand Database Fields and then expand ado).

10 Update the custom report as required. For example, if the removed field was used to define a chart, you’ll have to create a new chart.

11 Copy the modified .rpt files to the CUSTOMIZEDFILES folder. If you don’t, your modified custom reports will be overwritten the next time you generate the Web view.

   **Note:** In general, any time Crystal Reports asks you to either use saved data or refresh data, use the saved data. Refreshing the data requires that you select a data source, and the data source should be set only by VIZOR at run time (when a user views the reports).

2. DYNAMIC CONNECTION REPORT

For this type of report, VIZOR uses the rpt Crystal Report and dynamically provides the necessary connection information for the Crystal Report to execute a query. VIZOR provides the database parameters including user credentials. The data is retrieved inside the Crystal Report from the query stored in the rpt file.
Selecting the data to include in a report

The data is not controlled by the query defined in the Report Editor, so you need to query directly the tables and create the necessary joins within Crystal Reports. This type of report requires that the author of the report understands the structure of the database underneath but other conditions or filters that may not be supported by the VIZOR query editor may be used.

Selecting the fields to include in a report

The Fields list is not used in this type of report. Adding or removing fields from the list in the Report Editor will not change anything in the report since the fields are completely controlled by the Crystal Report. How the field is used or displayed is also controlled by the Crystal Report and can be changed in the usual ways. This type of report requires that the author of the report understands the structure of the database underneath but fields that are not VIZOR fields can be used.

From within Crystal Reports, fields appear in Database Fields with the real table and field names and they point to a specific database (e.g. HelpDesk01_DAT).

To add fields to a report of this type, you need to use the Database Expert in Crystal Reports and connect to a valid database, select the table where the field is and add it. Depending on your report, you may need to create a JOIN as well.

3. STAND-ALONE REPORT

This type of report is loaded by VIZOR from the rpt Crystal Report file but it does not change it in any way or pass any information to it. VIZOR assumes all the necessary connection information, query and data are stored within the Crystal Report. A report of this type can be a report where the database connection information and credentials are stored inside the Crystal Report or it can be a static report that does not query any database (it already has the data inside).
CUSTOMIZING THE REPORT USED BY THE PRINT BUTTON

The report used to print record is named Current Issue - Detailed. If you edit this report in the Report Editor (of VIZOR Admin), the changes apply to all Web views of the project.

By default the report is a Standard Report and the field can be defined directly in the Report Editor.

However, you can choose to make it a Custom Report, in which case you need to click on the checkbox Custom and provide the two required rpt files.

Each view has two versions this report:

rptListingGCurrent$Record$-$DetailedPortrait.rpt
rptListingGCurrent$Record$-$DetailedLandscape.rpt

You can find examples of these files in the CensusWebVD\<project>_\<view>_\Reports folder, where <project> is the name of the project and <view> is the name of the Web view. The portrait version of the report is used to print records.

To customize the report:

1 View the portrait version of the report in a Web view. You can either print an record or view the report with the Report Viewer.

   Viewing the report creates the .rpt file.

2 In the Report Editor (VIZOR Admin), mark the report as a custom report (select the Custom check box).

   This prevents VIZOR from overwriting the customized report if the report definition changes.

3 Using Crystal Reports, customize the report (add graphics, change fonts, rearrange and align fields).

4 Put a copy of the customized report in:

CUSTOMIZEDFILES
   \#Project\<project>
   \#WebView\<view>
   \Reports

When you regenerate the Web view, the customized version of the report is copied to the Web view folder.
EXPORTING TO CSV

Custom reports can be exported to CSV from the Web.

By default the separator is the comma ",". If you need the CSV separator to be different, for example ";" , you can do it by adding a custom field inside the report.

This is defined per report and inside the Crystal Report.

Inside the Crystal Reports Editor, create a Formula Field called "CSV-CharFieldDelimiter".

In the formula editor, simply add the character to be used as the delimiter or separator, like ";", but not surrounded by quotes.

If not present or empty, the default will be used.

Internally, the format of this type is CharSV=7. You can also make a specific report open by default in CSV by customizing the Reports.js file.

Advanced Setting for the Report Engines: USING CRYSTAL REPORTS FOR ALL LISTING REPORTS

It is also possible to use the Crystal Reports engine for all the Listing reports, rather than the HTML report engine. In this case, a Creation API for Crystal Reports would need to be purchased from a third party. Once purchased, this Creation API, after having been installed on the web server, will enable VIZOR to display all existing and future Listing reports using the Crystal Reports Engine. This is done automatically without the need to use the Crystal Reports Editor. Since this involves the automatic generation of .rpt files, Crystal Reports requires that the Creation API be present.

Options control which report viewers are used by the Web views:

- **Standard Report Engine** specifies the report viewer used for Listing reports.
- **Custom Report Engine** specifies the report viewer used for Custom reports.
To set these options, log on to VIZOR Admin, and on the **Tools** menu, click **Options**.

**Note:** If you have a version of Crystal Reports that is newer than version 9, you must still select **Crystal Reports 9** as the report viewer.

By default, VIZOR uses the included Crystal Reports Runtime Software to display custom reports, and a built-in HTML report engine to display listing reports, print records from the Web Views, and format notification contents such as attachments.

---

**DEFINING REPORT PAGES**

Report pages define formatting elements common to every page of a report, such as headers, footers, titles, and column layout. Report pages also define report titles. Pages can be shared by many reports, allowing you to define a standard look for all reports generated by VIZOR. Report Pages are only used in Standard HTML Reports.

VIZOR comes with a set of predefined pages. You can adapt these templates to your specific requirements, or define entirely new pages.

---

**TO OPEN THE PAGE EDITOR:**

On the **Tools** menu, click **Report**, then click **Page Editor**.

- Choose a page from the **Name** list. You can then edit, delete, or rename the page.

- To use one page as a starting point for a new page, choose a page from the **Name** list, click **Copy**, and give the new page a name.

- To create a page from scratch, click **New**.

You can use the Page editor to define headers, footers, and titles for your reports. In addition to typing and formatting plain text, you can insert placeholders for the current date, time, and page number. When you generate your report, these placeholders are replaced with values.
<table>
<thead>
<tr>
<th>To do this</th>
<th>Click</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert the current date</td>
<td></td>
</tr>
<tr>
<td>Insert the current time</td>
<td></td>
</tr>
<tr>
<td>Insert the current page number</td>
<td></td>
</tr>
<tr>
<td>Left-align text</td>
<td></td>
</tr>
<tr>
<td>Center text</td>
<td></td>
</tr>
<tr>
<td>Right-align text</td>
<td></td>
</tr>
<tr>
<td>Format text by changing fonts and point sizes, and applying bold, italic, or underline styles.</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 26 - COMPUTERS AND DISCOVERY TOOLS

DISCOVERY OF COMPUTERS - BRINGING COMPUTERS INTO VIZOR

Computers are special types of assets managed in VIZOR. Computers have special attributes or fields such as CPU, CPU Speed, Memory, Operating System, etc.

Before you can manage your computer assets in VIZOR, you can import them from one or several of these sources:

- Vector Discovery
- Microsoft Endpoint Configuration Manager ECM (a.k.a. SCCM)
- LANSweeper
- Solarwinds
- Excel
- In-house / custom discovery

VECTOR DISCOVERY

VIZOR can discover the computers in your network via our own Vector Discovery tool. If you use our discovery tool, computers are automatically imported into VIZOR.

When the Vector Discovery Client is correctly installed a new Windows service called "Vector Asset Management Agent" will be present. This service's Startup Type should be set to Automatic and the "Log On as" should be Local System. Upon the initial installation a reboot will be required to complete the installation and automatically start the service.

The "Vector Asset Management Agent" automatically pushes information daily (every 24 hours) Manually restarting this service will force an information update.
The configuration task “Interval for the Integration with Vector Discovery” controls the information import interval from Vector Discovery to the server.

**HOW DOES VECTOR DISCOVERY COLLECT INFORMATION?**

The Vector Discovery Client application automatically collects hardware and software data from the computers on which it is installed.

- **Hardware data** is collected from the hardware. DMI (Desktop Management Interface) and the Windows Registry. This is then saved in data files.
- **Software data** is collected using two approaches, the method of collating a list of all the files on the computer and collecting a list of applications provided by the operating system as in the Windows Add/Remove Program list. The file and directory listing of each hard drive on the computer and list of applications found in the Add/Remove Program list are saved to compressed snapshot files.

Please note that it might take 24 hours to see the computer in VIZOR after the Vector Discovery Client installation. The computer also needs internet access to send the information to the server.

**WHAT INFORMATION IS SYNCHRONIZED/IMPORTED FROM VECTOR DISCOVERY?**

For computers:

- Base_Board_Manufacturer
- Base_Board_Product
- Base_Board_Version
- Bios_Major_Release
- Bios_Minor_Release
- Bios_Release_Date
- Bios_Vendor
- Bios_Version
- ComputerName
• CPU
• CPU_Cores_Count
• CPU_Count
• CPU_Speed
• Domain_Name
• EC_Firmware_Major_Release
• EC_Firmware_Minor_Release
• Image_Version
• IP_Address
• Key_Name
• MAC_Address
• Manufacturer
• Memory
• Model
• Network_Card
• OS_Name
• OS_Version
• PC_Model
• Primary_Owner
• Serial_Number / SN
• Source_Timestamp
• Subnet_Mask
• System_Family
• System_Manufacturer
• System_Product_Name
• SystemSKU
• System Version

• Name

• Unique ID in Vector Discovery

Note: The IP Address and MAC Address that are imported are the first ones found, not necessarily the primary ones.
INTEGRATION WITH MICROSOFT ENDPOINT CONFIGURATION MANAGER - ECM (AKA SCCM)

If you have deployed Microsoft's ECM (a.k.a. SCCM) across your network, VIZOR's ECM Connector imports and synchronizes the computers information collected by ECM. The ECM Connector also imports the software installations per computer as discovered by ECM.

The integration between VIZOR and Microsoft ECM allows organizations to manage the life cycle of assets discovered by ECM and it extends the asset information to include usage, allocation and financial details.

UNDERSTANDING HOW THE INTEGRATION WORKS

The integration has two main components:

1) ECM / SCCM Connector
2) VIZOR Importer

ECM/SCCM CONNECTOR

The ECM/SCCM Connector reads data from ECM and sends it to the VIZOR Server on a regular basis.

The connector makes multiple queries to the ECM views of the SQL Server database using read-only access. The data is converted to a common format that is sent over to the VIZOR Server for the synchronization.

The ECM Connector must be installed in a computer located in the same LAN as ECM.

If Vizor is in the cloud, the connector may be installed directly on the ECM server or in any computer that can query the ECM SQL Server database.

If VIZOR is on premises, the connector is automatically installed on the VIZOR Server and no separate installation is required.
The default installation path is:

C:\Program Files (x86)\Vector\ConnectTools\DataExport\SCCM

In both cases, credentials for a SQL Server user with read-only access to the ECM views is required.

---

**VIZOR IMPORER**

The data queried and prepared by the ECM Connector is sent over to the VIZOR Server. The data is received and serialized into a temporary cache until it is fully processed and imported.

The default import cache paths are:

C:\Program Files (x86)\Vector\ConnectServer\Import\ExternalData\Assets - SCCM Desktops  
Assets - SCCM Laptops  
Assets - SCCM Printers  
Assets - SCCM Servers  
Asset – SCCM Monitors

Scheduled tasks regularly synchronize the assets based on the configuration preferences depending on their types. The default frequency is daily, at midnight.

Some parameters of the synchronization can be configured from the VIZOR Import Manager, after selecting the appropriate import rule. There is one rule for each type of asset.

---

**WHAT INFORMATION IS SYNCHRONIZED/IMPORTED FROM ECM/SCCM?**

For computers:
• Base_Board_Manufacturer
• Base_Board_Product
• Base_Board_Version
• Bios_Major_Release
• Bios_Minor_Release
• Bios_Release_Date
• Bios_Vendor
• Bios_Version
• ComputerName
• CPU
• CPU_Cores_Count
• CPU_Count
• CPU_Speed
• Domain_Name
• EC_Firmware_Major_Release
• EC_Firmware_Minor_Release
• Image_Version
• IP_Address
• Key_Name
• MAC_Address
• Manufacturer
• Manufacturer_ID
• Memory
• Model
• Network_Card
• OS_Name
• OS_Version
• PC_Model
• Primary_Owner
• Serial_Number / SN
• Source_Timestamp
• Subnet_Mask
• System_Family
• System_Manufacturer
• System_Product_Name
• System_SKU
• System_Version
• Name
• Top_Console_User
• Unique ID in ECM/SCCM

Note: The IP Address and MAC Address that are imported are the first ones found, not necessarily the primary ones.

Software Installations:

• Application_Name
• Application_Platform
• Device_Name
• Installed_Date
• Source_Timestamp
• Unique ID in ECM/SCCM
• Vendor
Monitors:

- Asset Type
- Src_Last_Updated
- Name, Computer
- Manufacturer
- Description
- ScreenWidth, ScreenHeight
- Computer
- PixelsX, PixelsY
- Type
- SerialNumber
- Unique ID in ECM/SCCM

Printers:

- Asset Type
- Name
- Src_Last_Updated
- Name
- Unique ID in ECM/SCCM
CONFIGURING THE INTEGRATION WITH ECM

The integration brings automatic import and synchronization of computers and other assets from ECM into VIZOR. With the integration enabled, computers discovered by ECM will be also displayed in VIZOR, in the Assets > Computers area. Once the computers are in VIZOR, they can be managed just as other assets, including their life-cycle, requests, approvals and workflows.

INSTALLATION OF THE ECM CONNECTOR WITH VIZOR IN THE CLOUD

Run the setup program of the VIZOR ECM Data Connector in a computer in the LAN. It can be installed in any computer that can read data from the ECM database, including the ECM Server. This connector is needed to bridge the integration between the ECM server and the VIZOR server in the Cloud.

This step is only necessary if your VIZOR server is in the cloud, otherwise your VIZOR application server already has the ECM connector installed, which is used to connect to your local ECM server.

Enter Parameters to Connect to ECM

In this step, we will configure the connection parameters to the ECM SQL Server database. It is suggested to have a service account with database read permissions.

Go to:

C:\Program Files (x86)\Vector\ConnectTools\DataExport\SCCM

Run MqExporterSettings

Enter the parameters:

Database name

Usually: CM_XXX

SQL Server Name:

Sql server login (user/pwd)

Or windows authentication (checkbox)
Upload URL:

If the VIZOR Server is on premises, leave the default value.

If the VIZOR Server is being Cloud Hosted, enter the proper URL: E.g.:
https://vector.vizor.cloud/connect/webapi/xferfls.asp or
https://company.vizor.cloud/connect/webapi/xferfls.asp

Save and close.

Set The Frequency

Go to VIZOR > Configuration > Settings and search for Integration with Microsoft ECM.

In the field **Value**, enter how often the synchronization should occur.
Then, on the computer that has the Connector, local to your LAN network, go to:

```
C:\Program Files (x86)\Vector\ConnectTools\DataExport\SCCM
```

Run CreateScheduledTask.bat

This batch file creates Windows scheduled tasks for exporting all data from ECM.

You can set the frequency of the import/synchronization by setting the frequency of the Windows Scheduled Task.

When “Use Windows Authentication” is selected, the schedule task needs to run under a Windows account that has logon permissions on the SQL Server hosting the ECM database and read permissions on the ECM database.

---

**INSTALLATION OF THE ECM CONNECTOR WITH VIZOR ON PREMISES**

When ECM/SCCM is in the same network as the VIZOR application server, use the local VIZOR ECM Data Connector already installed in the VIZOR server.

Go to VIZOR > Configuration > All and search for Integration with Microsoft ECM.

Set **Use Local Connector** to Yes.

**Enter Connection Parameters**

VIZOR needs the connection parameters to connect to the ECM SQL Server database.

Enter the parameters:

- **Database name**
  - Usually: CM_XXX

- **SQL Server Name**:
  - Sql server login (user/pwd)
  - Or windows authentication (checkbox)

Save.
Set The Frequency

When using the local connector (the SCCM database is in the same network as VIZOR), the interval indicates the frequency in days for synchronizing the assets and software. The default is 1 day.

Using Windows Authentication for SQL Server

When using Windows authentication for connecting to the SCCM database, you need to give read permissions to the Windows user running the Windows Service called: Vector Integrations Service. The user running this process will be authorized by SQL Server to retrieve the necessary data.

INSTALLATION OF THE CONNECTOR FOR MULTIPLE ECM / SCCM SOURCES

VIZOR can integrate with multiple ECM / SCCM sources at the same time. For example, if your organization has several distributed SCCM systems, they can all be centralized and the assets managed in VIZOR.

This type of deployment requires the installation of multiple connectors, each one installed in a computer that is close to each SCCM or directly in the SCCM server.

Each separate connector is installed in a similar way to when installing one connector and VIZOR is in the cloud.

For each one of the SCCM sources:

1. **Determine what Location in VIZOR should be linked to the given SCCM source.**

   For example, for SCCM-A, the organization determined the location is “USA \ New York”.

   Go to the Locations area in VIZOR and drill-down to USA \ New York, then open the details of the location and note the numeric ID.
2. **Install the connector in the SCCM-A server, or in a near computer.**

Follow the instructions in Installation of the ECM Connector with VIZOR in the cloud.

3. **Enter the Location in MqExportSettings.xml**

Open the file MqExportSettings.xml with a text editor.

The file is located by default in:

$$C:\Program Files (x86)\Vector\ConnectTools\DataExport\SCCM$$

Towards the bottom of the file, locate the `<rs:data>` section. The row for nID='3' is for entering the Location ID (2 is for the Organization ID, in case you have multiple organizations).

```xml
</s:Schema>
<rs:data>
  <z:row nID='1' tValue='http%3A%2F%2Flocalhost%2Fconnect%2Fwebapi%2Fxferfls%2Fasp'/>
  <z:row nID='2' tValue=''/>
  <z:row nID='3' tValue=''/>
</rs:data>
```

Enter the numeric ID of the location from step 1 into the tValue and save.
This will tell the connector that every asset will belong to the location “USA \ New York”.

You can now run the connector as usual directly or via Scheduled Tasks.
**HOW DO I KNOW IT WORKS?**

For the computer asset information: go to Assets > Computer, your desktops, laptops and servers should be listed in each one of the asset type groups.

Click on any of those computers to load the details. The Computer Details tab should have the hardware information as collected by ECM. You can also find the network address of the computer as well as the primary logon user of that computer.

For the software installations: go to Software Installations > Software Installations Catalog. All the software titles discovered by ECM will be listed.

You can now specify what software titles to import into VIZOR and normalize them into Software Asset Types.

**WHAT HAPPENS AFTER IMPORTING SOFTWARE INSTALLATIONS?**

The next time the scheduled tasks run, the software installations flagged to be imported will be moved to the Software Installations area and each installation mapped to one Software Asset Type.

You can view any current and past installations in the Software Installations area, query for new installations this month, this year, this week, as well as uninstalled software (Removed Installations).

Click on an installation record to view more details such as the version and the license key, if discovered.

You can also check the last time this information was refreshed with ECM in the Source tab.

Imported installations will also be displayed in the following areas:

- Installations of a computer
  Assets > Computer then Details > Installations tab

- Installations of a Software Asset Type
Assets then Asset Types > click on a particular Software Asset Type (e.g. Microsoft Office 2016). Then Details > Installations tab.

- Installations of a Software License
  Software Licenses then click on a particular Software License, then Details > Installations tab.

The difference between the software installations catalog and the software installations is that the catalog is just a list of all the different software titles found in ECM with the number of how many computers each software is installed in. The catalog does not have the name of the computer where the software is installed or any other details. The detailed list of installations per computer is in the software installations file. The catalog is much smaller and it serves as a directory of the full list of software installations.

**Software Installations Catalog**

<table>
<thead>
<tr>
<th>Software</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe 10.1.2</td>
<td>20</td>
</tr>
<tr>
<td>Microsoft Office 2016</td>
<td>100</td>
</tr>
</tbody>
</table>

**Software Installations**

<table>
<thead>
<tr>
<th>Software</th>
<th>Computer</th>
<th>(Additional information per computer installation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe 10.1.2</td>
<td>Computer01</td>
<td></td>
</tr>
<tr>
<td>Microsoft Office 2016</td>
<td>Computer01</td>
<td></td>
</tr>
<tr>
<td>Adobe 10.1.2</td>
<td>Computer02</td>
<td></td>
</tr>
<tr>
<td>Microsoft Office 2016</td>
<td>Computer02</td>
<td></td>
</tr>
<tr>
<td>Adobe 10.1.2</td>
<td>Computer03</td>
<td></td>
</tr>
<tr>
<td>Microsoft Office 2016</td>
<td>Computer03</td>
<td></td>
</tr>
</tbody>
</table>
SQL VIEWS USED BY VIZOR

The following ECM SQL views are queried:

- v_GS_COMPUTER_SYSTEM
- v_GS_PC_BIOS
- v_GS_PROCESSOR
- v_GS_X86_PC_MEMORY
- v_R_System
- v_GS_OPERATING_SYSTEM
- v_GS_SYSTEM_ENCLOSURE
- v_RA_System_IPAddresses
- v_RA_System_MACAddresses
- v_GS_NETWORK_ADAPTER_CONFIGURATION
- v_GS_SYSTEM_CONSOLE_USAGE_MAXGROUP
- v_UsersPrimaryMachines
- v_GS_PROCESSOR
- v_GS_PRINTER_DEVICE
- v_R_User
- v_GS_INSTALLED_SOFTWARE
SOLARWINDS

With VIZOR's SolarWinds Connector, import and keep synchronized the list of servers managed by SolarWinds, including computer details.

LANSWEEPER

Similar to the connector for ECM, you can import and synchronize the list of computers discovered by LanSweeper.

EXCEL / WORKSHEET

Some times the best source for the import is an Excel file. Maybe it was created manually or maybe a 3rd party system can easily export the inventory to Excel. VIZOR's native adapter easily imports and synchronizes from a list of computers in Excel.

IN-HOUSE INVENTORY

If your organization has deployed a custom computer discovery or inventory system, you can still use VIZOR's flexible adapter technology to import and synchronize the list of computers.
NEEDS ATTENTION - NOT SEEN RECENTLY

VIZOR automatically sets the field flag Needs Attention – Not Seen Recently to Yes if an asset that was imported from discovery (ECM/SCCM, Vector Discovery, etc.) has not been seen recently.

For example, if a computer is decommissioned outside VIZOR or deleted in ECM/Vector Discovery, it will not be updated in VIZOR. Computers are updated daily by default.

How much time passes before the flag needs attention is raised?

The time is configurable in the Admin > Options.

Look for the option **Days before asset marked as Not Seen Recently**

The default value is **60** (days)

INFORMATION SPECIFIC TO MOBILE DEVICES AND PHONES

VIZOR includes information that is specific for Mobile Devices and Phones. This information is found in the Phone Details tab.

For example:

- Phone Number
- IMEI. This is a 15- or 17-digit code that uniquely identifies mobile phone sets, set by the manufacturer.
- SIM Card Number. When using one, the ID of the card.
- ICCID. This is the unique identifier of the circuit, if present.
By default, this tab is only enabled for assets of class Telecom. If you need to modify this, go to the Business Rule "Hide Tabs By Asset Class" in the Workflow Editor.
IDENTIFYING THE SOURCE OF AN ASSET RECORD AND DOCUMENTING THE DISCOVERY PROCESS

As we saw, discovery processes, internal or external, are fed into VIZOR via the import rules in the Import Manager. It is often important for users to know how recent is the data obtained by discovery and how it was retrieved. In the import rule, besides the name of the source, enter the details of the Discovery in the Documentation field and describe the Update Procedures.

When viewing an asset or CI record in VIZOR, users will be able to see the following information in the Source tab:

- **Source Type:** Computers from X (as selected when creating the import rule)
- **Source Name:** any name chose by you that helps relate to this source
Last Imported date and time.

The timestamp of the source, for example, if the computer information comes from ECM, what is the last timestamp as per ECM.

Discovery Documentation: the documentation entered by you on the Documentation field of the import rule.

Update Procedures: the update procedures as entered by you on the import rule.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Computer Details</th>
<th>Purchases</th>
<th>Allocation</th>
<th>Purchase Details</th>
<th>Source</th>
<th>Installation</th>
</tr>
</thead>
</table>

if this asset was imported from an external source, this tab shows the information of where it was imported from.

Source Type: Computers from Vector Discovery - XML
Source Name: Vector Discovery Servers
Last Imported Date: 2/11/2019
Last Imported Time: 2:30:02 AM
Source Timestamp: 5/1/2016 12:08:30 AM
Discovery Documentation: Servers imported from Vector Discovery
Update Procedures: Data is synchronized nightly

IDENTIFYING DISCREPANCIES VS DISCOVERY

VIZOR allows you to identify discrepancies between the information in VIZOR and the information obtained from Discovery.

For example:

- Query **Computers with Discrepancies vs Discovery**
  This built-in query finds discrepancies such as
  - Allocated to Person vs Primary_Owner from Discovery
  - Allocated to Person vs Top_Console_User from Discovery
• Installations vs Allocated Software

VIZOR will automatically try to match the Software Asset instance that may be associated to a Software Installation found in your network by Vector Discovery, ECM, LanSweeper, etc.

For each installation CI record, VIZOR matches the title in the Software Asset Types library and a valid available Software Asset instance, based on the Allocated Computer or on the computer being used by the Allocated to Person.

See Software Installations Reconciliation for more information.
CHAPTER 27 - MANAGING CONTACTS, USERS AND GROUPS

ABOUT USERS AND CONTACTS

In VIZOR, you work with four types of accounts:

- Users, who have logon names and passwords and can log on to Web views, VIZOR Web Admin, VIZOR Admin, or the Web View Editor.

- Contacts, who cannot log on. Contacts are people who, for example, report issues by telephone, e-mail, fax, or through submit-only views.

- Companies, who cannot log on. Companies are related to either a Contact, or User of the VIZOR system.

- Value-Added Resellers (VARs), who cannot log on. Like Companies, VARs are related to either a Contact, or User of the VIZOR system.

Users are not specific to projects. For example, a user can use the same logon name and password to log on to any Web view of any project. However, each project can store different information for users. When you add a field to the Contact tab of a project, that field is a project-specific user information field.

Companies and VARs can be used to better organize Users and Contacts. For example, when multiple Contacts are associated to the same Company, it becomes easier to search for all records related to the Company - the same is true for VARs. However, there are specific features in VIZOR that only work with Companies, for example:

- Service level agreements can be created to apply to all users of one specific company. For more information, see Companies.
• When Contacts are created through E-mail Integration, VIZOR will attempt to automatically associate a Company. For more information, see Setting Default Values for Issues Submitted by E-mail.

**USERS**

All users must have a VIZOR user account, which consists of a user name and an optional password. Use Vizor Web Admin to create and manage user accounts.

**GROUPS**

By assigning users to groups, you can control:

• Access to features in VIZOR Admin, VIZOR Web Admin, and Web views.

• Access to projects.

• Access to Web views.

• Workflow permissions.

Use VIZOR Web Admin to create groups, edit group privileges, and assign users to groups.

**CONTACTS**

A contact is a person who reports an issue. For example, a guest from another company may report an issue with a computer while they are working on-site. In this case, the guest is the contact, and the help desk analyst who enters the report is the submitter.

To create and manage a list of contacts, use VIZOR Web Admin. Web views can also include a Contact button that opens the Users and Contacts dialog. Access to this dialog from a Web view is controlled by the group permissions defined in VIZOR Web Admin.
VIZOR provides a set of tools for administering projects and Web views:

- **VIZOR Admin** for administering projects.
- **Web View Editor** for defining and generating Web views for projects.
- **VIZOR Web Admin** for administering projects and users through the Web.

**IMPORTING USERS AND CONTACTS FROM WINDOWS**

You can import user accounts from Active Directory (or from a Windows domain), so users can log on to VIZOR with their Windows user names and passwords. Use the User Account Import Manager to import user accounts and keep VIZOR synchronized with Active Directory/Windows (see Integration with Active Directory).

**ADMINISTERING USERS AND CONTACTS**

To create and manage users and contacts in VIZOR, use Vizor Web Admin. For example, you can use Web Admin to disable users, create contacts, and to create user accounts.

Users with the required permissions can also create contacts in Web views.

**USER SECURITY**

VIZOR security enables you to manage user access to record data and features. In VIZOR, security is based on the users and groups.
When you install VIZOR, the Setup program creates sample users, such as Admin, and demo, along with a number of role-based user accounts.

To secure your projects, you must import or create user accounts for users. You then assign the users to groups, and use group privileges to control their access to tools, such as VIZOR Admin and VIZOR Web Admin and for individual features such as the Report editor.

### USER GROUPS

Each user is a member of one or more groups. Access to VIZOR features and projects is based on group membership. You can enable and disable features and projects on a group-by-group basis. A user can only access a feature or project if the user is a member of a group where the feature or project is enabled.

VIZOR has several default groups.

- The **Admins** group has all features enabled
- The **Users** group enables features that you want to make available to all users. All users are members of this group
- The **Analysts** and **Group Leaders** groups have access to all Web View features controlled by security permissions
- The **Employees** group cannot access any of the Web view features controlled by security permissions

To control access to VIZOR features, you assign users to the groups based on their roles and responsibilities in the issue tracking process. For example, a help desk group leader or analyst who is also responsible for administering VIZOR must be a member of the Admins group. For example, a member of the QA staff who is also responsible for administering VIZOR would be a member of both the QA and the Admins group.

### NOTES

- Use the Web View Editor to set the **group access permissions** that control who
can log on to the Web views of a project.

- Use VIZOR Admin to control access to projects.
IMPORTING USER ACCOUNTS

You can import user accounts from an Active Directory domain, an LDAP repository, from Microsoft Dynamics or from other sources (see Integration with Active Directory for more details).

INTEGRATION WITH MICROSOFT DYNAMICS

VIZOR integrates with Microsoft Dynamics in three main areas of functionality:

• With Microsoft Dynamics CRM, for synchronizing users, contacts and customers.
• With Microsoft Dynamics GP, for linking helpdesk tickets to the items that customers have purchased.
• With Microsoft Dynamics GP, for the RMA tickets, to track returns and warranties provided to customers.

Additional features:

- View details of sales invoiced to customers, including invoice dates and the serial numbers and items included
- Automatically create sales transactions in GP from VIZOR
- Automatically create RMA transactions in GP from VIZOR tickets
- Track the status of items sent to customers as part of RMAs. VIZOR discovers them in Dynamics GP and brings the Tracking Number and Serial Number.
- Show reconciliation of parts sent vs parts received.
- Track available parts in internal inventory that can be sent to customers.
Internally, VIZOR uses multiple tables such as Invoices, Line Items, Serials for Line Items, Sales Transactions and RMA Transactions.

(only on-premises editions of Microsoft Dynamics are supported at the moment).

### NEEDS ATTENTION - NOT SEEN RECENTLY

VIZOR automatically sets the field flag Needs Attention – Not Seen Recently to Yes if a user account that was imported has not been seen recently in the last synchronizations with the source.

For example, if a user account is deleted in Active Directory and it was imported into VIZOR, it will not be updated in VIZOR on the daily synchronization.

How much time passes before the flag needs attention is raised?

The time is configurable in the Admin > Options.

Look for the option **Days before user marked as Not Seen Recently**

The default value is 7 (days)

### DEFINING IMPORT RULES

An import rule remembers the settings from the last time you used the rule.

To define an import rule:

1. In the Import Rules dialog, click **Add** and type a name for the import rule.

2. Click **Next** and continue through the remaining steps of the User Account Import Manager.

All your subsequent choices and settings are saved in the import rule. For example, suppose you select an Active Directory server, specify an LDAP search filter, and change the default import settings. The next
time you run the User Account Import Manager, you can select the import rule to use the same choices and settings.

INTEGRATING WITH ACTIVE DIRECTORY

Before you can import user accounts, you must add a connection to an Active Directory server or Windows domain.

To add an Active Directory server:

1. In the Active Directory Servers and Windows Domains dialog, click **Manage**.
2. In the Manage Active Directory Servers and Windows Domains dialog, click **Add LDAP**.
3. In the **Display Name** box, type a name for the LDAP server. VIZOR uses this name to identify the server.
4. In the **Host**, **Port**, and **Base DN** boxes, enter the connection information for the LDAP server:
   - **Host** is the IP address of the LDAP server.
   - **Port** is the port the LDAP server is running on. By default, LDAP servers run on port 389. LDAP over SSL uses port 636 by default.
   - **Base DN** is the top level of the LDAP directory tree. For example, if your organization’s DNS domain name is `mycompany.local`, the Base DN is `dc=mycompany,dc=local`.
5. If you want to use anonymous authentication for the connection, select the **Anonymous Bind** check box.
   - Alternatively, clear the Anonymous Bind check box and enter the information for authenticating a user when connected to the server, where:
     - **User DN** is the user to authenticate. For example: `CN=Administrator,CN=Users,DC=mycompany,DC=local`
     - **Password** is the user’s password
6. In the **LDAP Logon Name Field** box, type the name of the LDAP property that stores the user account name. VIZOR uses this name to log on.
7. Click **Test** to test the connection.
WHEN VIZOR IS IN THE CLOUD

VIZOR can integrate with your Active Directory for synchronizing user accounts and allowing users to log in using the same user credentials.

REAL-TIME INTEGRATION

If you want the VIZOR cloud server to communicate with your Active Directory in real time, an open IP channel needs to be allowed across your firewall.

Typically, the TCP and UDP 389 ports are needed, but depending on the configuration there may be more. You will need to consult with your firewall configuration expert.

VIZOR uses the LDAP protocol on this port.

You can also use the LDAPS protocol.

IMPORT

As an alternative, you can export the users list from your AD and then import them into VIZOR. This solution, however, does not bring the user passwords and therefore users would need to set the passwords in VIZOR.

FILTERING USERS

You can use LDAP search filters to filter the list of users imported from Active Directory.
If you want to filter users based on Active Directory groups, click **Add Filter** and select the groups you want to filter. Then click **Append** to append the group filter to the search filter in the **Filter** box, or click **Replace** to replace any existing search filter.

If you want to filter on other conditions, you can also write your own LDAP search filters, and combine them with the group filters created with **Add Filter**. For example, you could type in filters such as:

- `(sn=Mark)`

  selects users with a surname of Mark.

- `(!cn=IUSR_*)`

  filters out all user names that start with IUSR_*.

- `(&(!cn=IUSR_*) (!cn=IWAM_*))`

  filters out all IUSR_<computername> and IWAM_<computername> users.

For more information on the LDAP search filter syntax, see:

IMPORT SETTINGS

Import as Contacts

If you want to import the users as contacts, select the **Import as Contacts** check box.

Import to Groups

By default, imported users are added to the Users group in VIZOR. If you want to add the imported users to a different group (for example, Admins), click the group in the Import to Groups list.

Get E-mail Addresses From

Specifies where to get the e-mail addresses of imported users.

Scheduling Imports

Specifies when to import users. Select the **When Scheduled** check box and then click **Configure** if you want to use Window's Scheduled Tasks to schedule regular imports. Scheduling imports keeps VIZOR synchronized with Active Directory and Windows domains.

Select the **Now** check box if you want to import users as soon as you finish with the User Account Import Manager.

Import Settings

These check boxes control whether the User Account Manager:

- Adds new user accounts for any new users found in the Active Directory or Windows domain.

- Updates existing user accounts with any changes (for example, to the user name or e-mail address) found the Active Directory or Windows domain.
CREATING USER ACCOUNTS

Most of the times user or employee accounts are created when synchronizing with an external system, like Microsoft Azure, Google G Suite, Active Directory, SugarCRM, etc. Other times, they are imported from an xls or csv file. However, you can create manually a new user or employee account.

To create a user account:

1. In VIZOR Web Admin, select the Security tab and click the Users button.
2. Click the appropriate button for Add New User, Employee, Contact, etc.
3. In the Type field, select User or Employee.
4. In the Authenticate With list, click VIZOR Authentication if the user will be native to VIZOR, and so the password and authentication will be managed by VIZOR.
5. If the account is of type User, type a new user name in the Logon Name. If the account is of type Employee, and you want the employee to be able to log on to VIZOR, select YES in the field Can Log In, and type a new user name in the Logon Name.
6. In the Password and Confirm Password boxes, type the user’s password.
7. Enter the rest of the user information and click OK or Save.
8. After creating the account, you can set the User Groups the new account belongs to. New users automatically belong to the Users group; however, administrators can assign the User to additional groups, if desired.

USER ACCOUNT LOGON AND EMAIL

When creating a new user or employee account, VIZOR can automatically generate the logon name and the email address following your organization’s naming convention.

The logon name can be used to create the user in Active Directory automatically via an asset Action, when provisioning the user.

The default logon and email are generated using formulas that can be changed in VIZOR Admin > Tools > Options
<table>
<thead>
<tr>
<th><strong>Match pattern for email format</strong></th>
<th>The regular expression pattern to be used to format the email address.</th>
<th>([a-zA-Z][1])(.+)(.+)(.+)(.+)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Replace pattern for email format</strong></td>
<td>The expression to use as formula in combination with the match pattern for generating automatically email addresses.</td>
<td>$1$ is the value in the first parentheses in the regular expression formula $2$ is the value in the second parentheses in the regular expression formula $3$ is the value in the third parentheses in the regular expression formula $4$ is the value in the fourth parentheses in the regular expression formula</td>
</tr>
<tr>
<td><strong>Fields to be used in the email formula</strong></td>
<td>Comma separated fields to be used in the email formula. The are written in the same order as they are considered in the formula.</td>
<td>&lt;F.ID:First Name&gt;,&lt;F.ID:Middle Name&gt;,&lt;F.ID:Last Name&gt;</td>
</tr>
<tr>
<td><strong>Match pattern for logon format</strong></td>
<td>The regular expression pattern to be used to format the logon name.</td>
<td>([a-zA-Z][1])(.+)(.+)(.+)(.+)</td>
</tr>
<tr>
<td><strong>Replace pattern for logon format</strong></td>
<td>The expression to use as formula in combination with the match pattern for generating automatically logon names.</td>
<td>$1$ is the value in the first parentheses in the regular expression formula</td>
</tr>
</tbody>
</table>
$2$ is the value in the **second** parentheses in the regular expression formula

$3$ is the value in the **third** parentheses in the regular expression formula

$4$ is the value in the **fourth** parentheses in the regular expression formula

| Fields to be used in the logon formula | Comma separated fields to be used in the logon name formula. The are written in the same order as they are considered in the formula. | <F.ID:First Name>,<F.ID:Middle Name>,<F.ID:Last Name> |

**EXAMPLE OF EMAIL PATTERNS**

\(([a-zA-Z](1))(.+)( )(.+))\)

Results in:

anewman@acme.com

\(([a-zA-Z]+)(.+)( )(.+))\)

Results in:

alfred.newman@acme.com
ENABLING AND DISABLING PROJECTS

When you disable a project for a group, members of that group cannot:

- Log on to Web views of the project.
- Edit the project in VIZOR Admin.
- Edit views of that project in Web View editor, or generate new views of that project.

You can disable specific Web views for members of a group.

To enable or disable a project for a group:

1. In VIZOR Web Admin, click the Security tab, then click the large Groups button on the left of the tab.
2. In the Groups list, click a group.
3. Click Projects.
4. If you want to enable a project:
   a. In the Disabled list, click the projects you want to disable. Use the Shift and Control keys to select more than one project.
   b. Click.
5. If you want to disable a project:
   c. In the Enabled list, click the projects you want to disable. Use the Shift and Control keys to select more than one project.
   d. Click.

You can also enable or disable projects from the Groups Allowed to Open list in the Project Properties dialog.
WORK TEAMS

You can use VIZOR to help manage and coordinate work teams. Setting up work team support involves the following tasks:

- Building a list of work teams. Manage Work Teams as Departments.
- Assigning users to work teams.
- Adding the Assigned Work Team field to Web views. This field is used to assign issues to specific work teams, either manually by users or automatically by workflow rules.

Define queries for finding work team issues. VIZOR includes a **My Work Team’s Issues** query that gets all the issues assigned to a user’s work team, but you may want to define additional queries for work teams (for example, a query that finds all open issues assigned to the user’s work team).

Defining Work Teams

The list of available work teams is stored in a global choice list named Work Team. The HelpDesk project has an **Assigned Work Team** field that uses this global choice list.

You use VIZOR Web Admin to edit the list of work teams.

**To edit the list of Work Teams:**

1. In VIZOR, go to the **Roles and Policies** area.
2. Click on the queries and select **Work Teams** in order to see the current list.
3. The list is also a Global Choice List, accessible for Single-Choice and Multi-Choice fields in all projects.
4. Edit the Work Teams:
   - Click on the appropriate button on the right to create a new Work Team.
   - To delete a Work Team, click on the Delete red icon on the row in the Summary List.
   - To rename a Work Team and edit other properties, click the Work Team on the Summary List. Make changes in the form that opens and save as usual.

ASSIGNING USERS TO WORK TEAMS

You can assign both users and contacts to work teams. No user or contact can belong to more than one work team.
To assign a user or contact to a work team:

1. In VIZOR Web Admin, select the Security tab and click the Users button.
2. Select the Users query.
3. In the query results, click the user or contact you wish to edit.
4. In the Work Team list, click the work team to which the user belongs.

ADDING WORK TEAM SUPPORT TO WEB VIEWS

To allow users and workflow rules to assign issues to work teams, export the Assigned Work Team field (Overview tab) to the Web views.

BUILDING WORK TEAM QUERIES

You can query for issues assigned to a specific work team, for example, all issues assigned to the QA Team:

Assigned Work Team = QA Team

You can also use the <My Work Team> macro to query for issues assigned to the work team of the current user. For example, this query finds all open issues assigned to the user's work team:

Assigned Work Team = <My Work Team> AND State = Open
USER CATEGORIES

You can control which users and contacts are visible in a project. Each user (and each contact) can be assigned to a user category. For example, some users can be assigned to the Internal User category, and others to the External User category.

The list of available user categories is a global choice list, so you can use VIZOR Web Admin to build the list of user categories you want to use.

To edit the list of user categories:

1. In VIZOR Web Admin, click the Choices tab.
2. In the Project list, click < Global Choice Lists >.
3. In the Choice List list, click User Category.
4. In the Choices section:
   - To add a new user category, click and then type the category name.
   - To rename a user category, click the category and then click .
   - To delete a user category, click the category and then click .

ASSIGNING USERS TO CATEGORIES

Assigning users and contacts to categories allows you to control whether they are visible in a project.

To assign users and contacts to categories:

5. In VIZOR Web Admin, select the Security tab and click the Users button.

   Alternatively, in VIZOR Admin, click Tools > Security > Users.

6. Select the All Users & Contacts query.

   - For more information about using queries, see About Queries.
7. In the query results, click the user or contact you wish to edit.
8. In the User Category list, click the category to which the user belongs.
9. Click Save.

---

**HIDING USERS IN PROJECTS**

To control which users, contacts, and companies are visible in a project:

10. In VIZOR Web Admin, click the Options tab.
11. In the Project list, click a project.
12. Click Organize users per project.
13. Check the In this project, only display users, contacts, and companies in the following categories box.
14. Select the categories of users and contacts you want to be visible in the project.
15. Click OK.
CREATING VIZOR-ONLY USERS

VIZOR-Only users can log in to VIZOR but they do not have an active role in the organization. For example, they are not Employees or Customers. By default, assets are not allocated to VIZOR-Only users, VIZOR-Only users are not assigned HelpDesk tickets and Purchases are not created for VIZOR-Only users.

This is specially useful when it's important for a user not to show in asset allocation lists or automatic provisioning of asset rules. One good example is the built-in "Admin" account.

1. In VIZOR, log in with an administrator account and select the “Security” link

2. In the right toolbar, click on “Add new VIZOR-only User”
3. In the “Add New VIZOR-only User” window, all the information needed. Shown in the image below are some of the usual fields used, the more detail for your accounts the better.

- First and Last Name – Your user's first and last name.
- Full Name – Concatenated version of first and last name. This will show in user fields such as “Allocated to Person”, “Owner”, “Contact”, etc.
- E-mail
- Logon Name – This will be the user name used to log in by your user.
- Organization name – Your company's name.
- Authenticate with – Preferred method of authentication such as
  - VIZOR Authentication
  - Google
  - Azure Active Directory.
- Password & Confirm Password – Used to setup the initial password for the user to log in, can later be changed by the user if enabled by the administrator.
- Category – Defines what kind of user you are creating. Some of the options are:
  - Consultant
  - Employee
  - Contractor
  - Intern
  - Etc.

4. Click “OK” to save the initial information and navigate to the “Groups” tab to setup the user groups your user will belong to.
   - Click on “edit” to open the user groups window
5. While not required, you can navigate to tabs "Contact Details" and "Employment" to further provide details to your new user.
DISABLING USER OR EMPLOYEE ACCOUNTS

Disabled accounts cannot log on to VIZOR but the names still appear in the user fields such as **Allocated to Person**, **Owner** and **Contact**.

Disabling a contact, company, or VAR has no effect.

**To disable a user account:**

1. In VIZOR, log in with an administrator account and select the “Security” link

2. Search for the account that is going to be disabled. The search box at the top right corner can be used for this.

3. Click on the user account and locate the field “Is Disabled” in the “Info” tab. Click on the square checkbox to mark it.

4. Click “Ok” to save. The user contact will now be disabled.
DELETING USER OR EMPLOYEE ACCOUNTS

Disabled users are not deleted from the database by default because existing assets, HelpDesk tickets, Actions or Licenses may refer to those users.

If you don’t want to see certain users in fields like Contact, Owner, Allocated to Person or Submitter, you can modify the WHERE condition of the choice list of the field in question to exclude disabled accounts (Field Editor) (see Removing Disabled Users from Choice Lists).

If you want to remove disabled users from the choice lists but only for new selections or under certain conditions, use the Workflow Editor and create a business rule of type Possible Values. You can select and filter the individual users to be displayed in a particular list of a field.

Deleting the user from the users database directly is possible but it may leave any related helpdesk tickets, assets, actions, licenses, etc. with a broken reference to the user. This may cause the value of the field with the reference to be shown empty or with a numeric ID that represents the user ID of the deleted user account.

REMOVING DISABLED USERS FROM CHOICE LISTS

Instead of deleting users from the users database, you can prevent the Owner and Contact lists from showing disabled users. However, if an existing record (assets, ticket, action, etc.) references the user in its Owner or Contact field, the field will be empty or show a numeric ID.

To remove disabled users from choice lists:

1. Open the project definitions database.
2. Open tblDtsFields and find the owner (nID = 11) and contact (nID = 13) records.
3. In the tWhere field, add And fDeleted = 0 to the Where clause. For example:

   Where (([nID] >= 0 And [tName] <> '') Or [tName] = '<User>') And fOriginator = 0 And fDeleted = 0
ADDING A CHOICE LIST OF USERS OR CONTACTS

To add a choice list of users:

1. In the Field Editor, create a new field.

2. In the Type list, click Multi-Choice List or Single Choice List.

3. In the Table Containing Choices list, click tblUser.

   tblUser cannot be edited in the Choices Editor.

4. In the tWhere field, type:

   Where (([nID] >= 0 And [tName] <> '') Or [tName] = '<User>') And fOriginator = 0

   The [nID] >= 0 condition removes the macros defined in tblUser (the users database):

<table>
<thead>
<tr>
<th>User ID</th>
<th>User Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>&lt;Contact&gt;</td>
</tr>
<tr>
<td>-3</td>
<td>&lt;User&gt;</td>
</tr>
<tr>
<td>-2</td>
<td>&lt;Previous Owner&gt;</td>
</tr>
<tr>
<td>-1</td>
<td>&lt;Owner&gt;</td>
</tr>
</tbody>
</table>

   The user with nID = 0 is the <None> macro.

   The fOriginator = 0 condition removes contacts, so that the list contains users only.

5. Apply the changes.
EDITING USER INFORMATION

You can edit user information for Users, Contacts, Companies, and VARs with VIZOR Web Admin.

To edit user information:

1. In VIZOR Web Admin, select the Security tab and click the Users button.
2. Select the All Users, Contacts, Companies & VARs query.
   a. • For more information about using queries, see About Queries.
   b. • To quickly find a user, use of the search feature is recommended. To make the search box appear, press the button.
3. In the query results, click the user you wish to edit.
4. Make the modifications you desire.
5. Click Save.

PASSWORDS

You can change passwords for VIZOR native user accounts. You cannot change passwords for user accounts imported from Active Directory or Windows.

To change a user’s password:

1. In VIZOR Web Admin, select the Security tab and click the Users button.
2. Select the All Users, Contacts, Companies & VARs query.
   a. • For more information about using queries, see About Queries.
   b. • To quickly find a user, use of the search feature is recommended. To make the search box appear, press the button.
3. In the query results, click the user you wish to edit.
4. Change the value in the Password and Confirm Password fields.
5. Click Save.

CHANGING PASSWORD FOR A VIZOR-NATIVE ACCOUNT

1. Login to VIZOR and click on any link to go to any view from your homepage.
2. Click on the "Password" link at the top right by the Log Off link.
3. Enter the new password and confirm it, and then click "OK".

   Password:
   ******

   Confirm Password:
   ******

   Password can contain a maximum of 50 characters.

   OK  Close

4. Log off.
5. Test your new password.

CHANGING THE AUTHENTICATION METHOD

1. In the Authenticate With list:
   - Click VIZOR Authentication to authenticate against the VIZOR user database.
   - Click an Active Directory server to authenticate against Active Directory.
   - Click a Windows server to authenticate against a Windows domain.

2. If you authenticate with VIZOR, you may need to enter the logon name and password.
DEFINING USER GROUPS

Groups allow you to assign privileges to users. By enabling and disabling features for a group, you control the features (privileges) available to the members of that group.

Group membership determines which features are available to a user. Each group enables and disables different features. Users that belong to more than one group have access to any feature enabled in at least one of the groups.

Group membership also controls access to projects and Web views. To assign users to groups, use VIZOR Admin.

In the Users view of the Security tab, you can select a user and then edit the list of groups to which the user belongs. In the Groups view, you can select a group and edit the list of users that belong to the group.

To add a group:

1. In VIZOR Web Admin, click the Security tab.
   
   If you are in VIZOR Admin, click Tools > Security > Groups.

2. On the Security tab, click the large Groups button on the left side of the tab.

3. Click Add and type a new name for the group.

To delete a group:

1. In VIZOR Web Admin, click the Security tab.
   
   If you are in VIZOR Admin, click Tools > Security > Groups.

2. On the Security tab, click the large Groups button on the left side of the tab.

3. In the Groups list, click the group you want to delete.

4. Click Delete.
GROUPS: ADDING AND REMOVING USERS

On the Security tab, the Groups view allows you to add or remove multiple users at the same time.

To add users to a group:

1. In VIZOR Web Admin, click the Security tab.
2. On the Security tab, click the large Groups button on the left side of the tab.
3. In the Groups list, click a group.
4. Click Users
5. To add users:
   a. In the Non-Members list, click the users you want to add to the group. Use the Shift and Control keys to select more than one user.
   b. Click
6. To remove users:
   c. In the Members list, click the users you want to remove from the group. Use the Shift and Control keys to select more than one user.
   d. Click
To add a user to a group (in the Users view):

1. In VIZOR Web Admin, select the **Security** tab and click the **Users** button.
2. Select the **All Users** query.
   - For more information about using queries, see About Queries.
   - To quickly find a user, use of the search feature is recommended. To make the search box appear, press the button.
3. In the query results, click the user you wish to edit.
4. Select the **Groups** tab.
5. Click the **Edit** button.
6. In the **Select Groups** dialog, select the check boxes for the groups to which you want to add the user.
   - To filter the list of groups, click Advanced and type part of a group name. Click Filter to list only the groups that contain the text you typed.
   - To find all groups with names that start with a certain string of characters, click Options and in the Search Type list, click Starting With.
7. Click **OK**.
8. Click **Save**.
ORGANIZATIONS & COMPANIES

VIZOR maintains a list of companies. By assigning users to companies, you can create a service level agreement that applies to all users at a specific company.

To create a company:

9. In VIZOR Web Admin, select the Security tab and click the Users button.
10. Click New.
11. In the Type field, select Company.
12. Provide all required information.
13. Press Save.
DEPARTMENTS

By assigning users to departments, you can create a service level agreement that applies to all users in a specific department.

To edit the list of departments:

1. In VIZOR, go to the Roles and Policies area.
2. Click on the queries and select Departments in order to see the current list.
3. The Departments list is also a Global Choice List, accessible for Single-Choice and Multi-Choice fields in all projects.
4. Edit the departments:
   - Click on the appropriate button on the right to create a new department.
   - To delete a department, click on the Delete red icon on the row in the Summary List.
   - To rename a department and edit other properties, click the department on the Summary List. Make changes in the form that opens and save as usual.

VIZOR FEATURES

VIZOR includes features that can be enabled and disabled. Most VIZOR Features correspond directly to buttons or menu options in the user interface (UI), such as Security or Report Editor. When a user does not have permission to use a feature, the feature is not displayed in the UI.

To enable or disable a feature for a group:

1. In VIZOR Web Admin, click the Security tab.
2. On the Security tab, click the large Groups button on the left of the tab.
3. In the Groups list, click a group.
4 Click **Features**.
5 To enable a feature:
   a In the Disabled list, click the feature you want to disable. Use the Shift and Control keys to select more than one feature.

   b Click ➡️.

6 To disable a feature:
   c In the Enabled list, click the features you want to disable. Use the Shift and Control keys to select more than one feature.

   d Click ⬅️.

### WEB VIEW FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Permits the user to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad hoc Queries</td>
<td>Access the Ad-hoc Query Editor</td>
</tr>
<tr>
<td>Add Contact Editor</td>
<td>Open the Users and Contacts dialog in a Web view by clicking the Contacts button</td>
</tr>
<tr>
<td>Add Contact</td>
<td>Create contacts</td>
</tr>
<tr>
<td>Add &amp; Save Issues</td>
<td>Create new issues and save them</td>
</tr>
<tr>
<td>Copy &amp; Save Issues</td>
<td>Create a new issue based on the current one in the Web view and save it</td>
</tr>
<tr>
<td>Delete Contact</td>
<td>Disable contacts</td>
</tr>
<tr>
<td>Update Contact</td>
<td>Edit contacts</td>
</tr>
<tr>
<td>Default Value Editor</td>
<td>Set default values for new issues</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Email Conversation</td>
<td>View and manage the e-mails linked to the current issue in the Web view</td>
</tr>
<tr>
<td>E-mail Current Issue</td>
<td>Send an e-mail with a summary of the current issue from the Web views</td>
</tr>
<tr>
<td>Email Queue</td>
<td>View and manage the e-mails that are not linked to issues</td>
</tr>
<tr>
<td>Manage E-mail Templates</td>
<td>Create, update and delete e-mail templates that are used when composing new e-mails or in automated e-mail responses</td>
</tr>
<tr>
<td>My Queries</td>
<td>Run personal queries only available to the user from the Web views</td>
</tr>
<tr>
<td>Password Editor</td>
<td>Change password</td>
</tr>
<tr>
<td>Queries - View Source</td>
<td>View the SQL WHERE clause behind the named query</td>
</tr>
<tr>
<td>Report Viewer</td>
<td>View VIZOR reports</td>
</tr>
<tr>
<td>Report Viewer - Hardware Inventory</td>
<td>View Hardware Inventory reports</td>
</tr>
<tr>
<td>Report Viewer - Software Inventory</td>
<td>View Software Inventory reports</td>
</tr>
<tr>
<td>Revision History</td>
<td>View the change history for an issue</td>
</tr>
<tr>
<td>Save &amp; Remove User Queries</td>
<td>Create new personal queries and be able to delete them</td>
</tr>
<tr>
<td>Save Issues</td>
<td>Update and save issues from the Web views</td>
</tr>
</tbody>
</table>
Update Submit Only View Contact
Update the contact information from a Submit-Only View

Use E-mail Templates
Apply saved e-mail templates when composing new e-mails

Example

The staff responsible for logging issues received from customers need to be able to add new contacts (each customer is a contact). To allow users to add new contacts in Web views, enable these features:

- Add Contact Editor
- Add Contact

VIZOR WEB ADMIN FEATURES

The following features enable and disable the different tabs in VIZOR Web Admin.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Permits the user to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Admin - Banner</td>
<td>Create and edit banners.</td>
</tr>
<tr>
<td>Web Admin - Choices</td>
<td>Create and edit choices lists</td>
</tr>
<tr>
<td>Web Admin - Email Integration</td>
<td>Manage and configure integrations of VIZOR and e-mail accounts for submitting issues by e-mail, linking e-mails to issues, automatic status by e-mail and more</td>
</tr>
<tr>
<td>Web Admin - Inventory Editor</td>
<td>Connect projects to Vector Asset Management or PC-Duo Enterprise site databases for linking computers and other assets to the issues as well as viewing hardware and software reports</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Web Admin - Notifications</td>
<td>Set the user account used for notifications</td>
</tr>
<tr>
<td>Web Admin - Relocation</td>
<td>Relocate databases and attachments</td>
</tr>
<tr>
<td>Web Admin - Security</td>
<td>Edit users, contacts, and groups. Add, edit, and delete groups. Enable and disable features for groups</td>
</tr>
<tr>
<td>Web Admin - SLA - Manage Agreements &amp; Levels</td>
<td>Manage Service Level Agreements and Service Levels, including working hours, target times and escalation rules</td>
</tr>
<tr>
<td>Web Admin - SLA - Report Viewer</td>
<td>View reports with summary and metrics of Service Level Agreements performance</td>
</tr>
<tr>
<td>Web Admin - SLA - View</td>
<td>View only the Service Level Agreement Information</td>
</tr>
<tr>
<td>Web Admin - Tabs</td>
<td>Create new tabs</td>
</tr>
<tr>
<td>Web Admin - Users - Add</td>
<td>Create new users</td>
</tr>
<tr>
<td>Web Admin - Users - Disable</td>
<td>Disable users therefore preventing them from logging into the system</td>
</tr>
<tr>
<td>Web Admin - Users - Update</td>
<td>Update user information such as e-mail address, postal address and telephone</td>
</tr>
<tr>
<td>Web Admin - Users - View</td>
<td>View only users and user information</td>
</tr>
<tr>
<td>Web Admin - Workflow</td>
<td>Edit workflow rules</td>
</tr>
</tbody>
</table>
To enable Admin features, you must enable Admin Utility. Otherwise, users cannot log on.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Permits the user to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Utility</td>
<td>Log on to VIZOR Admin</td>
</tr>
<tr>
<td>Delete Project</td>
<td>Delete a project</td>
</tr>
<tr>
<td>Delete Issues</td>
<td>Delete issues from a project</td>
</tr>
<tr>
<td>Import Issues</td>
<td>Import issues into a project</td>
</tr>
<tr>
<td>Integrity Editor</td>
<td>Open the Integrity Editor</td>
</tr>
<tr>
<td>Layout Editor</td>
<td>Open the Layout Editor and define custom layout styles for the Summary List</td>
</tr>
<tr>
<td>Licenses</td>
<td>Open the Licenses dialog</td>
</tr>
<tr>
<td>New Project</td>
<td>Create a new project</td>
</tr>
<tr>
<td>Notification Editor</td>
<td>Set up automatic e-mail notifications</td>
</tr>
<tr>
<td>Page Editor</td>
<td>Create and edit report pages</td>
</tr>
<tr>
<td>Project Properties</td>
<td>Edit project properties, such as which groups are allowed to open a project</td>
</tr>
<tr>
<td>Query Editor</td>
<td>Open the Query Editor and define custom queries</td>
</tr>
<tr>
<td>Report Editor</td>
<td>Define new reports, and edit existing reports</td>
</tr>
</tbody>
</table>
### VIZOR

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sort Editor</td>
<td>Open the Sort Editor and define custom sorts</td>
</tr>
<tr>
<td>Field Editor</td>
<td>Add new fields, change labels and modify the values that appear in choice lists</td>
</tr>
<tr>
<td>Web Tools Menu</td>
<td>Start the Web View Editor and VIZOR Web Admin from the <strong>Tools &gt; Web</strong> menu</td>
</tr>
<tr>
<td>When Editor</td>
<td>Edit the when conditions for notifications</td>
</tr>
<tr>
<td>Windows Account Editor</td>
<td>Edit the Windows user account used for anonymous access to virtual directories and for running the notification service.</td>
</tr>
</tbody>
</table>

**Example**

To allow users to create new reports, enable, at a minimum, the Admin Utility and Report editor features. This allows users to log on to VIZOR Admin and create new reports using existing queries, sorts, and report pages. The new reports are automatically made available in existing Web views.

Enabling the Query editor, Sort editor, and Page editor features allows users to create new queries, sorts, and report pages and use them in report definitions. New queries aren't available in Web views unless you export the queries and regenerate the views. All new sorts, however, are automatically made available in Web views.

---

**WEB VIEW EDITOR FEATURES**

You can prevent users from logging on to the Web View editor by disabling the Web View Editor feature.
CHAPTER 28 - FIELDS

THE FIELD EDITOR

Before you start tracking assets and issues, you may need to customize some of the fields used to collect and display information. For example, the Type and Priority fields should list choices that correspond to your organization's terminology and environment.

You may want to delete unused custom fields, add new fields to track additional information, or add new tabs. For example, you may want to add a tab for hardware configuration details. We do not recommend deleting default fields, simply remove them from the Web View where you no longer want to have it.

VIZOR Web Admin provides a Field Editor for editing fields. To open this editor, click on the Fields tab and then click on Fields on the left side menu. The Field Editor allows you to edit field definitions, but to export fields to Web views use the Web View Editor.

EDITING FIELDS

Click a field in the Field list to edit, copy, rename, or delete the field. The Field list contains all the fields defined in the project.

The buttons beside the Field list allow you to create new fields or copy, delete, or edit the selected field.

DESTINATION TAB

Tabs allow you to group sets of related fields in the User Interface.

CAPTION AND LABEL
The Caption is the actual field name as it appears in choice lists such as the Field list in any of the VIZOR Admin editors. The label is the caption that appears beside the field in a Web view User Interface. Most of the times both are the same, but some times it is useful to have a different Label Caption. For example, you may create a field called “Audit Ready”, with possible choices “Yes” and “No”, and have a label in the form that is “Is this asset ready for audit?”.  

DATA

Under Data, you specify what type of input the field accepts: text, dates, times, numbers, yes/no values, or choices from a list.

The choices displayed in a choice list field are defined in a choice table. To edit and create choice tables, click the browse button adjacent to the Table Containing Choices list.

FIELD IS

The Field Is check boxes give you control over how the field behaves in a Web view. Required fields cannot be left blank. Visible fields appear in a Web view, instead of being hidden. Enabled fields accept user input, while disabled fields are read-only (they display data but do not accept user input).

The Read-Only For list specifies which user groups cannot edit the field.
DEFAULT VALUES

You can use default values of fields to pre-fill the value of a field in order to save time, define standards or categorize items/records automatically.

Default field values automatically insert the value of the field when a new record, Asset, Software License, Ticket, etc. is created.

Types of Default Values:

- Literal
- Formula
- Table or SQL View

1. LITERAL VALUE

Exact values can be:

- A number: 45
- Text: Enter the description here

For literal values, simply enter it directly in the text box for the default value.

2. FORMULA

Formulas can use wildcards to replace at runtime the value of another field, macros, or other calculations.

Value of another field

You can use the value of another field in the same record:
<F.ID:Owner>

This macro will set the field to the value of the Owner field

<F.ID:Asset Tag>

This macro will set the field to the value of the Asset Tag field

A Macro

You can use a general macro like the ones available in queries, notifications, etc. For example, the macro that resolves to the current date:

<Today>

Or the date of the first day of the current quarter:

<First Day of Quarter>

A combination

You can also use any combination of general macros, field values and literals. E.g.

<Asset Purchased Date><Asset Type Abbrev><Asset Type Count>

This will set the field to a concatenation of the 3 macros resulting in something like this:

21-11-2018LAPTOP1844
3. TABLE OR SQL VIEW

The default value can come from a table or SQL view. In this case, the data in the table is not controlled by VIZOR and it must have specific columns. The table or sql view must exist in the DAT database of the project.

VIZOR provides tables and SQL views for specific cases like Round-Robin automatic assignment, but you can use this mechanism for your own needs.

The table or SQL view must be named

FldDefVal_< field ID>

So, for example, for the Owner field in HelpDesk, ID 11, the table or SQL view must be named:

FldDefVal_11

And it must have at least these two columns (it can have more):

Value

OrderBy

VIZOR will take the first available value in the field or column Value, when sorted by the field OrderBy.

This mechanism is only enabled by default for the field Owner but it can be enabled for others.

Round Robin Assignment of Tickets

Round Robin automatic assignment is a good example of the default values using a SQL view. You can use the Round-Robin assignment for automatically setting the owner of a HelpDesk ticket when created. Most of the times this is useful for tickets created from an email or another process and not usually for tickets created from the User Interface because the user creating the ticket sets the owner directly.

By default, the Round Robin assignment will set the owner of the new ticket to the next available person in the pool. By default the pool is composed of the members of the HelpDesk Analysts group. VIZOR will simply go in a cyclical sequence assigning one ticket to one person.

For example if the HelpDesk Analysts members are:

John
Elisa
Andrew
Patricia

Then VIZOR will assign a ticket to John, then Elisa, then Andrew, then Patricia and then John again.

SHOW IN CHOICE LISTS

This check box controls whether you can use the field to build queries, reports, and other styles.

MAINTAIN REVISION HISTORY

This check box controls whether VIZOR tracks revisions to the field, and whether you can use the field for update notifications (update notifications are generated when the value of a field changes).

ABOUT ADDING FIELDS

You can add fields to any of the tabs. New fields are automatically available in all VIZOR editors, such as the Query Editor and Report Editor.

New fields are not automatically exported to Web views. You must use the Web View Editor to export the fields and regenerate the Web views.

To use a field as a starting point for a new field, click an entry in the Field list and click ⚙️.
Making Fields Required

By default, users can leave the Web view fields blank when they submit an issue. To force users to complete a field before saving an issue, click the **Required** check box. The field label is highlighted in Web views to show that it is mandatory.

MAKING FIELDS READ-ONLY

To make a field read-only for all users, clear the **Enabled** check box.

To make a field read-only for a specific user group, click the **Enabled** check box, and then click the group in the **Read-Only For** list.

USING FIELDS TO DEFINE STYLES

If you don’t need to use a field to build queries, sorts, layouts, reports, or notifications, clear the **Show in Choice Lists** check box. This removes the field from the **Field** lists of editors, such as the Query Editor and the Ad-hoc Query Editor of a Web view.

For example, the **Attachments** field is not needed for queries, sorts, layouts, reports, or notifications. How often would you expect users to search for or sort issues based on the files attached to an issue?
TRACKING CHANGES

If you don't want to track changes to a field, clear the **Maintain Revision History** check box. VIZOR doesn't update the revision history when a user changes the field.

For a memo field, VIZOR doesn’t track the changes to the field value. Instead, it marks the field as modified.

**Notes**

- To send notifications when a field is updated, select the field’s **Maintain Revision History** check box.
The **Destination Tab** specifies the tab to which the new field is added.

Fields added to the **Contact tab** are treated in a slightly different manner. Depending on how the Web view is configured, the fields could appear in two locations:

- **Contact tab**
  - The Contact tab shows information about the current contact, while preventing the viewer from making modifications. It is functionally equivalent to a regular tab - the only difference is that all fields are automatically read-only.

- **View Contacts Details dialog**
  - For more information, see [Viewing Contact Details](#).

By default, fields assigned to the **Contact tab** will appear in the **View Contacts dialog**. To control whether or not they should also appear in a physical contact tab, modify the **Contact Tab in Record Details** Web View Attribute. For more information, see [Setting Web View Attributes](#).

---

**SETTING FIELD LABELS**

**Field Caption** is the label displayed by the field in a Web view. You can override this label in the Web View Editor by setting the **Caption** attribute.

**Choice Lists** is the label that appears in any choice list that allows a user to choose a field (for example, in the **Field** list of the Ad-hoc Query editor of a Web view). To change this label, click on the field name to rename the field.
CHOOSING A FIELD TYPE

CURRENCY, DATE, NUMBER, TEXT, AND TIME

These are text entry fields. VIZOR validates the text entered in these field types, and displays a warning if users enter invalid characters or uses the wrong format.

For example, Number fields accept only numeric values, and Currency, Date, and Time fields require the input values to follow the Windows Regional Settings.

MEMO

A Memo field is a text field that allows a large amount of characters to be input.

SINGLE CHOICE AND MULTI CHOICE

These fields are drop-down choice lists. Choice lists present fixed lists of choices to the user. Multi Choice fields allow a user to select one or more choices.

YES/NO

This is a check box.

Advanced

Internally, the Data Types are defined using the following IDs (for example, in tblDtsFields).

<table>
<thead>
<tr>
<th>Data Type</th>
<th>ID</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boolean</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Currency</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Number</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Text</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Memo</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>Sub type (size):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Byte</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Integer</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Long Integer</td>
<td>4 (default)</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>SingleChoice</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>MultiChoice</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>SCC</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>RelatedRecord</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>SubRecordLink</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>The main field that links to a subrecords table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DateTime</td>
<td>109</td>
<td></td>
</tr>
<tr>
<td>Password</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>HTML</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>SQLRowVersion</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Binary, timestamp type in SQL Server</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SETTING THE FIELD SIZE

For **Text** fields, the field size is the maximum number of characters that a user can type in the field. For **Number** fields, however, the size is determined by the selected data size:

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Byte</strong></td>
<td>Stores numbers from 0 to 255 (no fractions).</td>
</tr>
<tr>
<td></td>
<td>Decimal precision: None</td>
</tr>
<tr>
<td></td>
<td>Storage size: 1 bytes</td>
</tr>
<tr>
<td><strong>Integer</strong></td>
<td>Stores numbers from –32,768 to 32,767 (no fractions).</td>
</tr>
<tr>
<td></td>
<td>Decimal precision: None</td>
</tr>
<tr>
<td></td>
<td>Storage size: 2 bytes</td>
</tr>
<tr>
<td><strong>Long Integer</strong></td>
<td>Stores numbers from -2,147,483,648 to 2,147,483,647 (no fractions).</td>
</tr>
<tr>
<td></td>
<td>Decimal precision: None</td>
</tr>
<tr>
<td></td>
<td>Storage size: 4 bytes</td>
</tr>
<tr>
<td><strong>Single</strong></td>
<td>Stores numbers from –3.402823E38 to –1.401298E–45 for negative values and from 1.401298E–45 to 3.402823E38 for positive values.</td>
</tr>
<tr>
<td></td>
<td>Decimal precision: 7</td>
</tr>
<tr>
<td></td>
<td>Storage size: 4 bytes</td>
</tr>
<tr>
<td><strong>Double</strong></td>
<td>Stores numbers from –1.79769313486231E308 to –4.94065645841247E–324 for negative values and from 1.79769313486231E308 to 4.94065645841247E–324 for positive values.</td>
</tr>
<tr>
<td></td>
<td>Decimal precision: 15</td>
</tr>
<tr>
<td></td>
<td>Storage size: 8 bytes</td>
</tr>
</tbody>
</table>
ABOUT REMOVING FIELDS

To remove a field, you can either delete it or hide it. Alternatively, you can choose not export the field when you generate your Web views.

You can also disable fields by making them read-only.

DELETING FIELDS

Deleting a field removes it and all stored data from the issue database. If you don’t want to lose the data, you can disable the field, hide it, or remove it from the Web views.

You can delete a field only if it is not used in any query, sort, layout, report, or notification.

HIDING FIELDS IN ALL WEB VIEWS

Because you can remove a field from a Web view by not exporting the field, the ability to hide fields is not often required. However, you may want to hide a field if some of the queries you export use the field, but you don’t want users to see it.

To hide a field in all Web views of a project, clear the Visible check box in the Field Editor. To hide a field in specific Web views, use the Visible attribute of the field in the Web View Editor.

NOTES

- Hidden fields are still available in editors unless you clear the Show in Choice Lists check box.

- Queries do not work if fields used in the query definition are not in the Web view.
REMOVING FIELDS FROM WEB VIEWS

Using the Web View Editor, you can remove fields from some Web views and leave the fields in other views.

CONTROLLING ACCESS AND SECURITY OF A FIELD

VIZOR has multiple ways to control access to your data. Since data is mostly stored in fields, controlling access and security of a field is paramount.

Methods to control access and security of a field:
- Visible or Hidden, in the Field Editor
- Disabled or Read-only, in the Field Editor
- Read-only for specific user groups, in the Field Editor
- Visible or Hidden per Web View, in the Web View Editor
- Read-only per Web View, in the Web View Editor
- Visible or Hidden under custom conditions, using the Business Rule Workflow Editor
- Read-only under custom conditions, using the Business Rule Workflow Editor
- Create custom macros using scripting programming language to reflect unique or complex conditions.
- Because access to Web views can be controlled per user group, and you can create any number of Web views, you can combine all these to defined essentially any possible security, access or authorization situation.

CHOICE LISTS

A choice list is a list of choices displayed in a selection list on a form, in particular, they are used to select the choices for single choice fields and multi choice fields. The choices are defined in a choice table.
EDITING CHOICE TABLES

You can edit the choices in the list from VIZOR Web Admin.

Go to http://<server>/connectadmin/

Click on the Fields tab.

Click on "Choice Lists" on the left.

In Project, select either the name of the project where your choice table or associated field is, or "Global Choice Lists" if it’s a global choice list.

The Choice Lists editor allows you to add new choices, delete choices, change choice text, and reorder choices.

After your changes, we also recommend clicking on the button "Update Now" located on the bottom right. This will refresh the choice list in the views where it’s being used right away.

Use VIZOR Admin when you want to create new

Using the Field Editor, you can associate a choice table with a field.

Typical examples of choice lists are Status or Status in HelpDesk.

You can also delete complete choice lists when they are not referenced by a field.

EDITING CHOICE TEXT

When you change the text of a choice, you must update any queries that test the choice value. For example, consider this query:

Status = Assigned

If you change the choice text from Assigned to InProgress in the choice table, the query will not find any issues. Issues store the index of the choice, but queries store the text.
RENAMING CHOICE LIST TABLES

VIZOR Web Admin (in the Choice List list on the Choices tab) displays a name associated with the choice table, not the name of the choice list field.

A choice table has two names: the name of the choice table (for example, tblState) and a friendly name (for example, State). VIZOR Web Admin displays the friendly name. You can change the friendly name by renaming the choice table in VIZOR Web Admin.

SORTING CHOICE LISTS

Web Views can list choices in any order. For example, a non-alphabetic choice order such as Highest, High, Medium, Low, Lowest is more appropriate for a list of relative values than the alphabetic order.

When you create a new choice list, you choose how you want to order the list. Non Alphabetical Choice Order check box controls whether a choice list supports non-alphabetic choice orders and sorts.

By default, VIZOR lists choices in alphabetic order. However, when you allow non alphabetic sorts, you can define the sort order by assigning a numeric ID to each choice. This ID controls the position of the choice in the list (1st, 2nd, and so on).
**STATUS AND STATE**

The **Status** choice list is a special type of choice list. When a user selects a choice from the **Status** list, the **State** field is set to **Open** or **Closed**.

To change the mapping of **Status** values to **State** values, use the same editor. The choice table for the **Status** list contains an extra column that maps **Status** choices to **State** choices. You must complete this column when you add or edit the choices in the **Status** list.
When you edit the **State** choice table, remember that the **Closed** choice sets the **Closed Date** and **Time** fields. So, for example, changing the choice text from **Closed** may confuse users.

**Notes**

If you edit the **Status** choice list, check that workflow rules based on the **Status** field are still correct for your needs.

---

**GLOBAL CHOICE LISTS**

Global choice lists are shared by all projects.

**TO DEFINE A GLOBAL CHOICE LIST**

1. In VIZOR Web Admin, click the **Choices** tab.

2. In the **Project** list, click **Global Choice Lists**.

3. Click ![+] to create a new choice list.

   Alternatively, to base the new list on an existing list, select an entry in **Choice List** and click ![Edit].

4. In the Add Choice List dialog:
   a. In the **Choice List Name** box, type a name for the database table in which you want to store the list choices.
   b. In **Choice List Caption**, type a display name for the choice list (this is the name displayed in in VIZOR Web Admin).
c Select the Non-Alphabetical Choice Order check box if you want to define a non-alphabetical order for the choices in the list (for example, Applications, System, Hardware).

d In the Choices section, click 📋 to add a new choice to the list.

To associate the new choice list with a field, use the Field Editor in VIZOR Admin, then regenerate the Web views that use the field.

WORKING WITH TABS

VIZOR Web Admin allows you to add new tabs to a project. After you add a new tab, use the Field Editor to add new fields to the tab.

You can also reorder the tabs, change the tab names, and delete tabs. To delete tabs you must delete all the fields on the tab or move the fields to another tab.
CHAPTER 29 - E-MAIL INTEGRATION

E-MAIL INTEGRATION

In addition to enabling users to submit issues through Web views, you can configure VIZOR to directly accept issues submitted by e-mail, as well as keep track of all e-mail conversations associated to the issue.

This provides an easy-to-use interface with which most users are already familiar, and enables support staff to manage e-mail exchanges with users without having to spend time entering the details of conversations.

To configure your system to accept e-mail issues:

Open Web Admin using one of the following methods:

In your Web browser, enter //server/Connectadmin, where server is the name of your Web server.

In VIZOR Admin, click Tools > Web > Web Admin.

At the Web server, click Start > All Programs > Vector > VIZOR > Vizor Web Admin.

Log on as a user that belongs to the VIZOR Administrators group.

In Web Admin, click the E-mail tab and click Incoming Mail.

Select the Project for which you want to enable e-mail integration.

INCOMING E-MAIL INTEGRATION PROCESS

Configuring VIZOR to accept issues submitted by e-mail is a multi-stage process:

Click Add a new Integration to enter the details of an e-mail address you want to use to submit issues to the project and keep the e-mail exchanges. The Add E-mail Integration Account window is displayed.
For each e-mail address, you want VIZOR to monitor, you must specify:

The information that will enable VIZOR to access the account. (See "Specifying the E-mail Integration Account").

The rules that govern how incoming e-mails are handled. (See "Mail Handling").

The information you want to copy from the e-mail to the associated issue, and default values for non-mapped fields. (See "Mapping E-mail Fields to Issue Fields").

When you have completed entering the details of the E-mail Integration Account, select Enable this integration, and click OK to save your changes.

SPECIFYING THE E-MAIL INTEGRATION PARAMETERS

Before VIZOR can convert e-mails to issues, you must specify the addresses that you want to use for submitting issues.

To specify the details of the e-mail account you want to integrate with VIZOR:

1. In the Hostname field, enter the name or IP address of the IMAP e-mail server that handles incoming e-mail.

2. In the Port field, enter the port through which the e-mail server communicates.

   If the IMAP server requires an encrypted connection, check the SSL box, and change the port accordingly.

3. Enter a Logon and a Password for the account that VIZOR will use to access the e-mail server.
RECEIVE EMAILS VIA AN HTTP PROXY

If you are running VIZOR on premises, and the security configuration in your network blocks IMAP communication except via an HTTP proxy, you need to configure this settings so VIZOR can receive emails using this type of proxy.

Go to the Configurations area and search for “HTTP Proxy”.

Set the necessary parameters to match the proxy used in your organization:

**Authentication Method**
Enter the text "Basic" or "NTLM".

**Domain**
Enter the name of the NTLM authentication domain (optional), if NTLM authentication is used.

**Hostname**
hostname or IPv4 address

**Port**
Commonly used HTTP proxy ports are 8080 and 3128.

Save. The “Mq Mail Integration Agent” service will use these parameters next time it fetches incoming email.

---

**INCOMING E-MAIL RULES**

E-mail-handling rules determine how e-mails sent to the address specified in the **Incoming E-mail Server** section are processed.

When an e-mail is received, VIZOR compares the e-mail fields with the conditions specified in the first entry of the rules list. If the e-mail matches all conditions specified in the rule, VIZOR executes the specified actions, and then processes the next e-mail. If any of the conditions in the rule are not met, VIZOR tests the e-mail against the conditions specified in the next rule, until it reaches the end of the rule list.

It is recommended to place a rule that has an **Action Type** of **Queue** as the last rule in the list to cover the possibility that the e-mail does not meet the conditions of any rule in the list, in which case, the e-mail will be automatically added to the **E-mail Queue** for manual processing.
To create an e-mail rule:

In the Mail Handling section, click the Add button. The Add Rule window is displayed.

Enter a Rule Name.

Enter the conditions you want the rule to test for. For example, to test the Body of the e-mail for the word problem:

1. Enable the first empty condition by selecting its check box.
2. Click <Field> and select Body.
3. Click Is Equal to and select Contains.
4. Type problem in the entry field.
5. Next, enter the actions you want the system to perform when all the conditions are met.
For example, to configure the system to create an issue and send a reply to the person who sent the e-mail:

a  Select the Integrate e-mail with VIZOR check box.

b  Select Create New Issue using these values.

  By default, VIZOR completes the issue using the field mappings defined in the Issue Completion section of the Edit E-mail Integration Account window. To override these mappings for this rule only, click these values. For more information, see “Mapping E-mail Fields to Issue Fields”.

c  Select Send an e-mail to <Reply to Sender> to send an acknowledgement to the submitter. (For more information, see “Defining E-mails”).

6  Click OK to save the rule. The rule is added to the bottom of the mail-handling list.

7  Select the rule and click the Up and Down arrows to specify the processing order for the rule.

In most systems, the first rule checks whether an e-mail refers to an existing issue to avoid the possibility of creating duplicate issues. The easiest way to create this rule is to specify a condition that checks whether the e-mail contains a reference to an existing issue. If there is no match, only then should the system go on to check whether the e-mail contains details of a new issue.

---

**USING REGULAR EXPRESSIONS IN THE EMAIL RULE CONDITIONS**

You can use Regular Expressions in the Email Rule Conditions. For example, you may want to have a rule that matches a subject with the word “hello” in multiple languages. The condition will be something like:

```
subject contains hello|hola|bonjour
```

where the character “|” is used as a regular expression OR.

Another example could be:

```
subject contains [nN]ew ticket
```

where the rule will match both “New ticket” and “new ticket” in the subject.
Regular Expressions are only enabled automatically in email rule conditions that use the operator contains, which then causes the value that follows to be processed like a regular expression.
OUTGOING E-MAIL SETTINGS

In order for the VIZOR E-mail Integration to process incoming and outgoing e-mails, several Mail Settings must be configured in VIZOR.
TO CONFIGURE THE MAIL SETTINGS:

Outgoing E-mail Server (SMTP)
- Hostname: 192.1.101.1
- Port: 25
- SSL: No
- Login: joe
- Password: ********
- Request Read Receipt: No
- Send Automatic E-mail Notifications
  - From: NotificationService <notificationservice@yourcompany.com>
  - Every: 1 minute(s)
- Failed Outgoing E-mails
  - Maximum Retries: 10
  - Send to: joe@mycompany.com

Incoming E-mail Server (POP)
- Check Server For New Mail
  - Every: 1 minute(s)
Log on to VIZOR Web Admin. Click the E-mail tab and the **Mail Settings** section.

Fill in the Outgoing E-mail Settings. These settings are used when sending e-mails.

Click **Test** to ensure VIZOR is able to connect to the SMTP server using the settings you provided.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostname</td>
<td>The hostname or IP address of the SMTP server. For example: smtp.mycompany.com</td>
</tr>
<tr>
<td>Port</td>
<td>The port through which the SMTP server communicates. The default SMTP server port is 25.</td>
</tr>
<tr>
<td>SSL</td>
<td>VIZOR supports SSL, enabling you to use secure connections to your email server. Selecting <strong>Yes</strong> from the drop down list will ensure that VIZOR communicates utilising the SSL protocol.</td>
</tr>
<tr>
<td>Logon</td>
<td>The logon account used to gain access to the SMTP server. Use this only if your SMTP server requires authentication.</td>
</tr>
<tr>
<td>Password</td>
<td>The password for logging into the SMTP server. Use this only if your SMTP server requires authentication.</td>
</tr>
<tr>
<td>Request Read Receipt</td>
<td>Read receipts will appear in the conversation, confirming that the recipient has read the message. Note, however, that some recipients may choose to never send read receipts.</td>
</tr>
<tr>
<td>Send Automatic E-mail Notifications From</td>
<td>Name of the sender for SMTP e-mail. Some SMTP mail servers require the sender to be a valid e-mail address. Supported Formats: &quot;Notification Service&quot; <a href="mailto:notificationservice@yourcompany.com">notificationservice@yourcompany.com</a> <a href="mailto:notificationservice@yourcompany.com">notificationservice@yourcompany.com</a></td>
</tr>
<tr>
<td>Send Automatic E-mail Notifications Every</td>
<td>Send e-mail notifications at the specified interval (in minutes).</td>
</tr>
</tbody>
</table>
### Maximum Retries

The maximum number of retries for e-mail notifications. Once surpassed, the e-mail will be sent to the address specified in the Send Failed Outgoing E-mails To.

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the Maximum Retries is surpassed, the e-mail will be sent to this address. If there is no address specified, the e-mail service will continue trying to send to the original recipient.</td>
</tr>
</tbody>
</table>

### Fill in the **Incoming E-mail Settings**. These settings are used when receiving e-mails, together with the **Account**, **Server** and **Logon Information** specified in the defined Mail Integrations. For more information, see [Setting Up E-mail Integration](#).

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check Server For New Mail Every</td>
<td>Check for new incoming e-mails at the specified interval (in minutes).</td>
</tr>
</tbody>
</table>
MAPPING MESSAGE FIELDS TO ISSUE FIELDS

When an e-mail is sent to a monitored address, VIZOR generates an issue and copies information from the e-mail to specified issue fields. VIZOR automatically creates a default mapping between the e-mail fields and specified issue fields when you integrate an account. For example, the body of the e-mail is copied to the issue's Description field. However, you can change the fields that the e-mail information is copied to using the Edit Mapping button.

To view the field mappings for the specified account:

Click the Edit Mapping button. The Edit Mapping window lists the fields in your selected project, with mandatory fields shown in red.
To map an e-mail field to a project field:

Double-click the row of the project field you wish to map. The **Edit Mapping Field** window is displayed.

In the **Edit Mapping Field** window, select the E-mail Field you want to map to the selected project field, and click the OK button.

To undo a field mapping:

In the **Edit Mapping** window, double-click the mapping you want to cancel.

In the **Edit Mapping Field** window, deselect the **Assign value to this field** check box and click the OK button.

Click the OK button to save your changes, and close the **Edit Mapping** window.

In addition to the usual E-mail Fields, a special field called **Lookup user from e-mail’s sender** is included. If a project field is mapped to this field, the system will use the incoming e-mail’s From address in an attempt to find an existing VIZOR user or contact who matches the credentials. When looking for a match, the system will consider all e-mail addresses associated with the user - not only the primary address. (See **Associating Multiple E-mail Addresses to a Single Contact**)

If a user is found, that user will be associated with the e-mail. Otherwise, a contact may be created automatically if the option **Create a contact based on the “from” address** in the Default Values is set (See **Setting Default Values for Issues Submitted by E-mail**).

For example, a typical mapping could be like this:

<table>
<thead>
<tr>
<th>E-mail Field</th>
<th>VIZOR Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Summary</td>
</tr>
<tr>
<td>Body</td>
<td>Description Log</td>
</tr>
<tr>
<td>From</td>
<td>Instead of mapping From to a VIZOR field, you can use the &lt;Look up User from sender’s e-mail&gt; macro to fill in the field with VIZOR user ID.</td>
</tr>
<tr>
<td>To</td>
<td>Contact (this would allow you to search for issues submitted by e-mail)</td>
</tr>
</tbody>
</table>
SETTING DEFAULT VALUES FOR RECORDS SUBMITTED BY E-MAIL

While the Edit Mapping window will allow associating e-mail fields to VIZOR project fields, it is possible to define a separate set of values that will be applied along with the imported e-mail fields. When VIZOR fields are not mapped to e-mail fields, or when those mapped values are empty, the default values are considered. There are two different types of Default Values:

Global Default Values are set in the Issue Completion section of the E-mail Integration Account window.

Rule Default Values can be set within any specific Rule that has Create as an Action Type, and if specified, they can override the Global Default Values.

For example, you could have a Global Default Value that sets the VIZOR field Priority to Medium. This may be acceptable in the majority of cases, but for the sake of this example, let's say a Rule is created to treat e-mails sent from the CEO to the VIZOR system. In this case, you may want the issue Priority to be set to High, instead of Medium, but still use all other existing Global Default Values. By using the Rule Default Values, special cases like the one just described are possible.
If you mapped **Lookup user from e-mail’s sender** to any VIZOR field in the **Edit Mapping** window, selecting the **Create a contact based on the “from” address if one doesn’t already exist** checkbox will enable the auto-creation of contacts when no match is found in the system. (See **Mapping Message Fields to Issue Fields**)

When a contact is created, VIZOR will analyze the “from” address, and attempt to automatically associate the contact with a company. To achieve this, VIZOR looks at the e-mail domain (ex: bob@mycompany.com), and looks for a company that has a similar e-mail address. It knows to ignore common e-mail domains like Gmail, Hotmail, Yahoo, etc. To make modifications to the invalid e-mail domain list, see **Ignoring Specific E-mail Domains When Creating Companies**.
SENDING AUTOMATIC E-MAILS

From both the E-mail Integration Rules and the SLA Escalation Rules, you can send an e-mail message automatically as an action.

TO SEND AN AUTOMATIC E-MAIL AS AN SLA ESCALATION RULE ACTION:

Log on to Web Admin.

Click the SLA tab and the Service Levels section. Select a Project and a Service Level and click the Escalation Rules tab. Load an Escalation Rule, and click Send an e-mail as an Action.

Enter the e-mail information and click OK. This e-mail will be sent when the conditions of the SLA Escalation Rule are met.

Tip: Automatic SLA Escalation Rule E-mail Actions are useful for informing the Owner of when they need to resolve an issue by.

TO SEND AN AUTOMATIC E-MAIL AS AN E-MAIL INTEGRATION RULE ACTION:

Log on to Web Admin.

Click the E-mail tab and the Incoming Mail section. Select a Project load an E-mail Integration. Load a Mail Handling Rule, and click Send an e-mail as an Action.

Enter the e-mail information and click OK. This e-mail will be sent when the conditions of the Mail Handling Rule are met.

Tip: Automatic E-mail Integration Rule E-mail Actions are useful for replying to the person who sent the e-mail to tell them the number of the issue that the e-mail created so they can follow up on it at a later time.
SENDING E-MAILS FROM THE WEB VIEWS

TO SEND AN E-MAIL CONTAINING INFORMATION ABOUT AN ISSUE:

Log on to a Web view.

Load an issue and click on the button.

The E-mail Editor will open, with the default Current Issue Template. You can add the value of additional fields using the Field Value Macro.

Click the Send button.

This e-mail will be added to the issue’s Conversation if the Save to Conversation checkbox is selected.

SERVICE LEVEL AGREEMENTS (SLA) AND E-MAILS:

If the issue has an SLA agreement associated with it, the first time you send an e-mail from VIZOR to the Contact of the issue, the Actual Initial Response Date and Actual Initial Response Time fields in the issue will automatically be set to the date and time when the e-mail is sent (if they aren’t set already).
USING THE E-MAIL EDITOR

The E-mail Editor in VIZOR allows you and your users to create and send e-mail messages from the Web view. You can also configure e-mail to be sent automatically from SLA or E-mail Integration (for example, when VIZOR creates a new issue from an incoming e-mail, or when an SLA rule changes the Owner of an issue).

SENDING E-MAILS

EDITING THE TO, CC, AND FROM FIELDS
You can specify users by either looking up users and contacts in VIZOR, using **macros** or typing in the e-mail address directly.

To lookup users and contacts in VIZOR, beside the To, CC, or From box, click 🗿.

In the Select Users and Contacts dialog box, double-click the users and contacts you want to add.

The list of selected users and contacts is displayed under **Selected Users and Contacts**. You can edit this string of text, for example, to remove a user, or to add the e-mail address of a person who is not a user or contact.

---

**NOTES**

The text box beside the Find button allows you to display all users and contacts whose names start with the same letters. In the text box, type the first few letters of the name and then click Find.

To display the complete list of users and contacts again, delete all text from the box and then click Find.

Click Advanced to search for all users and contacts whose names contain the same string, or to search based on e-mail addresses.

If you would like to send separate e-mails to several recipients, select the Send e-mail to each recipient individually checkbox.
If you have recipients entered in the CC field, you will not be able to send individual e-mails.

---

**EDITING E-MAIL CONTENT**

You can type in any text you want, and you can use **macros** to insert the issue number, the name of the project, and the values of different fields (such as the Summary and Description Log).

If you prefer your e-mail body to be in HTML format, click the **HTML in Body** checkbox.
ATTACHING FILES

Beside the Attachments box, click .

In the E-mail Content Attachments dialog, click Browse and locate the file you want to attach. Click Upload or Link.

This adds the file to the list of files attached to this e-mail message. Every time the e-mail message is sent, the files are attached to the message.

E-MAIL CONVERSATION AND QUEUE

E-mail integration brings the ability to view support-related and other e-mails directly from the Web views. The E-mail Conversation and Queue are where you can view and manipulate these integrated e-mails.

THE E-MAIL CONVERSATION

The E-mail Conversation is where you can access all the e-mails related to a specific issue.

To access an issue’s E-mail Conversation:

Log on to the Web view where the issue can be found.

Find the issue using the search feature.

Select the issue from the summary list.

Click Conversation in the toolbar.
THE E-MAIL QUEUE

The E-mail Queue is where you can access and process all the e-mails pending assessment from a help desk analyst. These e-mails have not been associated to any existing issue.

To access the E-mail Queue:

Log on to a Web view of the desired Project. (Each Project has its own E-mail Queue.)

Click in the toolbar.

WORKING WITH E-MAILS IN THE UI (WEB VIEW)

The E-mail Conversation and Queue are where integrated e-mails can be processed, in the Web view. There, you can:

Send a new e-mail.

Reply to an e-mail.

Forward an e-mail.

Link an e-mail to an existing issue.

Create a new issue from an e-mail.

Emails are automatically linked to the ticket record when they contain a specific token in the subject or the body of the email.

The default tag is:

Issue ID: #

But you can change it in the settings area.

SENDING NEW E-MAILS

E-mails are created and sent using the e-mail editor (see Using the E-mail Editor).
You might be interested, for example, in sending an e-mail and keep a copy in an issue's E-mail Conversation and Activity Log.

New e-mails' fields will be completely blank with the exception of the From address which is determined by your E-mail Options, and the Subject which, for the Conversation only, is pre-filled with the respective issue number.

To send a new e-mail from an E-mail Conversation or the E-mail Queue, click New Mail.

REPLYING TO E-MAILS

E-mail replies are created and sent using the e-mail editor (see Using the E-mail Editor).

You might be interested, for example, in requesting more information from a customer after receiving a support e-mail.

E-mail replies are pre-filled with the original e-mail's content, and the From address is determined either by the original e-mail's Integration Account's (see Setting up E-mail Integration) e-mail address, or by your E-mail Options if the original e-mail didn't come from E-mail Integration.

To reply to an e-mail from an E-mail Conversation or the E-mail Queue, click Reply... or Reply All..., depending whether you want to reply only to the sender or to all the original recipients as well.

Note: see Sending E-mails From Web views to see how an E-mail Conversation reply can automatically update the respective issue’s Actual Initial Response Date and Time.

FORWARDING E-MAILS

Forwarded e-mails are created and sent using the E-mail Editor.

You might be interested, for example, in sending a copy of a customer e-mail to a colleague for second-line support.

Forwarded e-mails are pre-filled with the original e-mail’s content with the exception of the To recipient which is left blank. The From address is determined by your E-mail Options.

To forward an e-mail from an E-mail Conversation or the E-mail Queue, click Forward...
LINKING AN E-MAIL TO AN EXISTING ISSUE

Whether an e-mail is already in an issue's E-mail Conversation or still in the E-mail Queue, you might find out it is related to some (other) existing issue.

To link an e-mail to an issue, from an E-mail Conversation or the E-mail Queue, click Link to Issue…

After the e-mail is linked to this new issue, it can be found in this issue's E-mail Conversation.

CREATING A NEW ISSUE FROM AN E-MAIL

Whether an e-mail is already in an issue's E-mail Conversation or still in the E-mail Queue, you might decide a new issue needs to be created with regards to the information found in it.

To create a new issue from an e-mail in an E-mail Conversation or the E-mail Queue, click Create Issue.

After the issue is created, you will receive a message stating the new issue's number, and the e-mail will now be in this issue's E-mail Conversation.
E-MAIL MACROS

Macros are available when you use the E-mail Editor in the Web views and Web Admin.

Macros resolve values for information related to the issue so you don’t have to look it up manually.

Examples of email macros:

<table>
<thead>
<tr>
<th>Macro</th>
<th>Available In Fields</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Contact&gt;</td>
<td>To, CC, From</td>
<td>The person who is entered in the Contact field in the issue. This is usually the person who reported the issue.</td>
</tr>
<tr>
<td>&lt;Owner&gt;</td>
<td>To, CC, From</td>
<td>The person who is entered in the Owner field in the issue.</td>
</tr>
<tr>
<td>&lt;Previous Owner&gt;</td>
<td>To, CC, From</td>
<td>The person who was entered in the Owner field in the issue before it was reassigned to a new VIZOR user.</td>
</tr>
<tr>
<td>&lt;Submitter&gt;</td>
<td>To, CC, From</td>
<td>The person who is entered in the Submitter field in the issue. This is the person who entered the issue in VIZOR.</td>
</tr>
<tr>
<td>&lt;Work Team Members&gt;</td>
<td>To, CC</td>
<td>The people who belong to the work group that is entered in the Assigned Work Team field in the issue.</td>
</tr>
<tr>
<td>&lt;Reply To Sender&gt;</td>
<td>To</td>
<td>The person who sent the e-mail. This only applies when replying to an e-mail through the Conversation or Queue or from the E-mail Integration Actions.</td>
</tr>
<tr>
<td>&lt;Reply To CC&gt;</td>
<td>CC</td>
<td>The people who were CCed on the e-mail that was sent. This only applies when replying to an e-mail through the Conversation or Queue or from the E-mail Integration Actions.</td>
</tr>
<tr>
<td>&lt;Integration E-mail&gt;</td>
<td>From</td>
<td>The e-mail address specified for the E-mail Integration Account.</td>
</tr>
<tr>
<td>Tag</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td><code>&lt;Server Mail Sender From Admin Options&gt;</code></td>
<td>From</td>
<td>The e-mail address specified in the Mail Settings for who to Send Automatic E-mails Notifications From.</td>
</tr>
<tr>
<td><code>&lt;Value of Field:&gt;</code></td>
<td>Subject, Body</td>
<td>The value of a field in the issue.</td>
</tr>
<tr>
<td><code>&lt;Issue Number&gt;</code></td>
<td>Subject, Body</td>
<td>The number of the issue.</td>
</tr>
<tr>
<td><code>&lt;Project Name&gt;</code></td>
<td>Subject, Body</td>
<td>The name of the project the issue is in.</td>
</tr>
<tr>
<td><code>&lt;Link To Issue&gt;</code></td>
<td>Body</td>
<td>Generates a URL that you can include in the e-mail to allow people who have access to the Web views to log in to a specific view and automatically load the issue you specified.</td>
</tr>
<tr>
<td><code>&lt;Attribute of Person in Field:&gt;</code></td>
<td></td>
<td>Very flexible macro for resolving the value of a user indicated by a field of the dts record. You can use custom user fields. For example, if you want to add the email of the person that is the owner of a HelpDesk ticket, you would specify this: <code>&lt;Attribute of Person in Field:(Owner).(E-mail 1)&gt;</code> Format: <code>&lt;Attribute of Person in Field:(Caption of field which value is a person/user).(Caption of the field of the person/user to return)&gt;</code></td>
</tr>
<tr>
<td><code>&lt;Group Members:Admins&gt;</code></td>
<td>To, Cc, Bcc</td>
<td>Return the users/persons that are members of the specified group. E.g. <code>&lt;Group Members:Admins&gt;</code></td>
</tr>
<tr>
<td>Expression</td>
<td>Scope</td>
<td>Result</td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| `<Supervisor of:Caption of person field>` | Any | Return the supervisor of the user/person that is in the specified field, for the current record.  
E.g. `<Supervisor of:Contact>` |
| `<Job Title:Name of a job title>` | Any | Return the first user/person that has the job title specified.  
E.g. `<Job Title:CEO>` |
| `<Teacher of:Caption of field that points a student>` | Any | Return the teacher of the student that is in the field specified, in the context of the current record.  
E.g. `<Teacher of:Allocated to Person>` |
| `<Parent Email of:Caption of field that points a student>` | Any | Return the email of the parent of the student that is in the field specified, in the context of the current record.  
E.g. `<Parent Email of:Allocated to Person>` |
| `<Parent Name of:Caption of field that points a student>` | Body | Return the name of the parent of the student that is in the field specified, in the context of the current record.  
E.g. `<Parent Name of:Allocated to Person>` |
<p>| <code>&lt;Days from now:days&gt;</code> | Body | Returns a date a number of days in the future from today. |
| <code>&lt;Days ago:days&gt;</code> | Body | Returns a date a number of days ago from today. |
| <code>&lt;Asset Instance of this Action:Caption of field of the asset&gt;</code> | Body | Return information, the value of a field, of the asset being affected by an action, in the context of an action. |</p>
<table>
<thead>
<tr>
<th>Tag</th>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Asset Instance of this Action:Serial Number&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;Connect as&gt;</td>
<td>Body</td>
<td>Returns the credentials to use in a connection. Used for actions that connect remotely to an asset.</td>
</tr>
<tr>
<td>&lt;Base URL: &gt;</td>
<td>Body</td>
<td>Returns the Public URL of the VIZOR system. Usually this is as defined by the configuration item Public URL.</td>
</tr>
<tr>
<td>&lt;Value of Field:Caption of field&gt;</td>
<td>Any</td>
<td>Value of any field of the current record.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Value of Field:Owner&gt;</td>
</tr>
<tr>
<td>&lt;Asset Type Abbreviation&gt;</td>
<td>Any</td>
<td>The abbreviation of the asset type of the asset instance on context.</td>
</tr>
<tr>
<td>&lt;Next Asset Type Number&gt;</td>
<td>Any</td>
<td>The next automatically generated unique number (sequential) of the asset type of the asset instance on context.</td>
</tr>
<tr>
<td>&lt;Formatted Purchase Date:ymd&gt;</td>
<td>Any</td>
<td>Returns the purchase date of the asset instance, formatted using the argument.</td>
</tr>
<tr>
<td>&lt;Approvers per cost level&gt;</td>
<td>Any</td>
<td>Returns the list of people that are defined to be approvers depending on the cost of the asset type in context, the asset instance in context or the purchase in context.</td>
</tr>
<tr>
<td>&lt;Line Item Purchase Field:Caption of field&gt;</td>
<td>Any</td>
<td>Value of any field in the line item's related purchase record.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Example</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Line Item Purchase Field:Supplier&gt;</td>
</tr>
</tbody>
</table>
<Line Item License Field: Caption of field > | Any | Value of any field in the line item's related license record. Example: <Line Item License Field:Software Asset Type>

**USING MACROS INSIDE EMAILS**

Position your cursor in the e-mail where you would like the resolved macro to be inserted.

Click on the **Macros** tab.

Click on the macro you would like to insert. In the Web views, the macro will be resolved to the current value. In templates and in Web Admin, the macro will remain unresolved so that it can be resolved when the automatic e-mail is sent or when the template is applied to an e-mail.

**E-MAIL TEMPLATES**

Templates are available when you use the E-mail Editor in the Web views.

Use templates to store reusable e-mail content so that your users can quickly create e-mails when standard responses are required. A template can contain Subject, Body and Attachment information.

**TO CREATE AN EMAIL TEMPLATE**

All users who have access to the Web View – Manage E-mail Templates can create and edit templates.

To create a template, open the E-mail Editor to create a new e-mail. Click the **Templates** tab and click **Add a new template**.

By default, the new template is filled in with any subject, attachment and body text that was entered in the e-mail you added the template from.
Enter a **Name** for the template, as well as any subject, attachment or body text that you want in the template.

Click OK, and your new template will be available in the Templates list for all users who have the feature Web View – Manage E-mail Templates.

---

**LINKS WITHIN NOTIFICATION TEMPLATE**

It is possible to create a link within an email template. This is most useful for email notifications that use an email template. For example, most notifications have a link at the top right that brings the user to the issue when clicked on. Additionally, notifications can link to a survey a user can fill out once an issue is closed (See **Issue Closed Notification** in the templates tab).

To create a link to an issue, first go to the templates tab and either create a new template or edit an existing one. Enter the text you want the link to have, for example *View the ticket online*, and click on the Link button in the top toolbar (Make sure **HTML in Body** is checked in the bottom right to view the toolbar).

Within the Link Info tab, URL should be selected as the Link Type by default. For the protocol, select http:// or https:// depending on whether or not you have SSL enabled. Next, for the URL, enter something similar to this:

```
customer.VIZOR.cloud/connect?View=HelpDesk%2FEmployee&nId=<Issue Number>&Qry=22
```

Note that the `<Issue Number>` in the URL is a macro used to get the ID of the issue related to the notification being sent. If you prefer having this value encrypted, use `eld=<Encrypted Issue Number>` instead.

To link to a survey for the related issue, the steps will be the same as mentioned above, except the link will be like this:

```
customer.VIZOR.cloud/connect?View=HelpDesk%2FSurvey&eld=<Encrypted Issue Number>
```
You can copy the link from the View the ticket online link, but make sure View=HelpDesk%2FEmployee is replaced with View=HelpDesk%2FSurvey, and remove “&Qry=22” from the URL.

TO USE AN EMAIL TEMPLATE

All users who have access to the Web View – Manage E-mail Templates can use templates.

To use a template, open the E-mail Editor to create a new e-mail. Click the Templates tab and select the template you want to use. Click Apply the selected template.

PERSONAL E-MAIL OPTIONS

The Web view E-mail Options affect all e-mails created from the Web views, be it from the E-mail toolbar button, an issue’s E-mail Conversation or the E-mail Queue.

Two options are available to Web view users regarding e-mails:

The From address to be used when composing e-mails.

The requesting of read receipts.

By default, every user’s E-mail Options are:

From Address: their own e-mail address.

Read Receipts: requested.

To change your E-mail Options:
Log on to a Web view.

Click in the toolbar.

Click the E-mail tab to open it.

Perform the desired changes and click OK.

THE “FROM ADDRESS” E-MAIL OPTION

You have the option to use the e-mail address of your VIZOR user account or any other e-mail address, when sending e-mails from Web views.
No matter what this option is set to, replies to e-mails coming from an E-mail Integration Account will always have the respective account’s e-mail address as their From address.

THE “READ RECEIPTS” E-MAIL OPTION

You have the option to request a read receipt for all the e-mails you send from any Web view.

Depending on the From address of your e-mails and the E-mail Integration configuration, these read receipts can be processed automatically by the E-mail Integration feature.

Note that read receipts can be recognized by their subjects starting with “Read:”. 
CHAPTER 30 - BUSINESS & WORKFLOW RULES

ABOUT BUSINESS & WORKFLOW RULES

Business & Workflow rules allow you to define and enforce an issue handling process. Together with e-mail notifications, Business & Workflow rules help you automate the tracking and management of issues.

WHAT CAN YOU DO WITH BUSINESS & WORKFLOW RULES?

When a user selects a choice from a choice list, you can:

- Select choices in other choice lists.
- Change the possible choices in other choice lists.
- Hide fields.
- Disable fields.
- Make fields required.
- Hide tabs.

These are the basics of Business & Workflow rules. However, this explanation leaves out some important details:
By default, rules are applied when a user creates, saves, or loads an issue. You can also force rules to be evaluated when a user selects a choice.

Business & Workflow rules can also be based on more complicated conditions. For example, a rule may require that certain choices are selected from a number of different choice lists, or that the user is a member of a specific group, or both.

AUTOMATE BUSINESS & WORKFLOW

By controlling the possible values of the **Status** field, you can define and enforce a process.

**Simple Business & Workflow controlled by Status values**
Employee submits an issue (help request) and it enters the queue

New
(Open)

Help Desk group leader assigns issue to a Help Desk analyst

Assigned
(Open)

Help Desk analyst claims the issue and starts working on it

In Progress
(Open)

Help Desk analyst resolves issue

Resolved
(Closed)
EXAMPLES

EXAMPLE 1:

After an analyst starts work on an issue and marks it **In Progress**, you can enforce a process where only the analyst can mark the issue as **Dropped**, **Resolved**, or **To be Verified**.

When:

\[
\text{<User in Group>} = \text{Help Desk Analyst AND} \\
\text{Status} = \text{In Progress}
\]

The possible values are:
Status = Dropped
Status = Resolved
Status = To be Verified

Note that Status = In Progress is an implied possible value. A choice list can always be set back to its current value. For example, if a user is not a help desk analyst and an issue is marked In Progress, the Status list contains only one choice: In Progress.

This rule is an example of a possible values rule.

EXAMPLE 2:
You can prevent anyone except a group leader from assigning new issues.

When:

<User in Group> = Help Desk Group Leader AND
Status = New

The possible values are:

Status = Assigned

This prevents new issues from being resolved or dropped without first being assigned to an analyst by the group leader. If a user is not a group leader, the only possible choice is New.

EXAMPLE 3:
You can enforce a process where developers must forward issues to QA:

When:

<User in Group> = Developers AND
Status = Assigned

The possible values are:

Status = To be Verified

And where only QA can close issues (or assign them back to developers):
When:

\[ <\text{User in Group}> = \text{QA AND} \]
\[ \text{Status} = \text{To be Verified} \]

The possible values are:

\[ \text{Status} = \text{Fixed} \]
\[ \text{Status} = \text{Assigned} \]

Note that a choice list can always be set back to its current value. For example, if a user is not part of QA and an issue is marked \textbf{To be Verified}, the Progress list contains only \textbf{To be Verified}.

EXAMPLE 4:

You can prevent anyone except a manager from assigning new issues.

When:

\[ <\text{User in Group}> = \text{Managers AND} \]
\[ \text{Substate} = \text{New} \]

The possible values are:

\[ \text{Substate} = \text{Assigned} \]

This prevents new issues from being resolved or dropped without first being assigned to a developer by the manager.

CREATE RELATED CHOICE LISTS

You can define rules to create a relationship between two choice lists.

EXAMPLES

If \textbf{Problem Type} can be \textbf{Hardware}, \textbf{Software}, or \textbf{System}, \textbf{Problem Area} can be a type-specific list that displays a list of hardware components, software applications, or system components.

When:
Problem Type = Hardware

The possible values are:

Problem Area = Disk
Problem Area = Monitor
Problem Area = Keyboard
Problem Area = Memory

You need to create similar rules for software and system problems.

By default, Business & Workflow rules are evaluated when an issue is saved. For related choice lists like the ones in this example, you probably want to evaluate the rule whenever the Problem Type changes. Otherwise, users would have to select a Problem Type, save the issue, and then select the Problem Area.

---

UPDATE THE FUNCTIONAL AREA LIST DEPENDING ON THE TYPE

Available Types:

- Software Defect
- Hardware Defect
- Documentation Defect

When:

Type = Documentation Defect

The possible values are:

- Functional Area = Online Help
- Functional Area = User Guide
- Functional Area = Tutorials
- Functional Area = Readme

You need similar rules for software and hardware defects.

By default, Business & Workflow rules are evaluated when an issue is saved. For related choice lists like the ones in this example, you probably want to evaluate the rule whenever the Type changes. Otherwise, users would have to set the Type, save the issue, and then select the Functional Area.

---

SET FIELD VALUES
Instead of setting the possible values of a choice list, you can define rules that select choices from other lists. These type of rules are called a dependent values rules, because they make the value of one field depend on the value of another field.

**EXAMPLES**

This rule that assigns a default owner based on the **Problem Area**.

When:

```
Owner = <None> AND
Problem Area = SW - Outlook
```

The values to set are:

```
Owner = Erick Yanez
```

This rule assigns a default owner for new issues, but allows the issue to be reassigned. Without `<New Issue> = yes`, users could not change the owner of the issue. This rule assigns a default owner based on the Functional Area.

When:

```
<New Issue> = yes AND
Functional Area = Security
```

The values to set are:

```
Owner = Erick Yanez
```

**WHAT YOU SHOULD KNOW ABOUT BUSINESS & WORKFLOW RULES**

- **Rules work with single-choice list fields**

  You cannot define rules that apply to any other type of field, including multiple-choice list fields.
• **Rules are defined per project**

All Web views of a project share the same Business & Workflow rules. You cannot disable the Business & Workflow rules for specific Web views. The rules are either enabled for all views or disabled for all views.

• **Rules can impact performance**

Defining a large number of rules may impact the performance of Web views.

Using Business & Workflow rules to set default values is a good choice if you have a small number of rules and are not limited by resources (server, network, end-user computers).

• **Rules are evaluated when issues are loaded and created**

By default, Business & Workflow rules are evaluated when an issue is loaded or created (note that when you save an issue it is immediately re-loaded, triggering the Business & Workflow rules). You can force rules to be evaluated when a user changes the value of one of the fields specified in the condition. Evaluating rules on field changes has a potentially higher performance cost. However, if you want to implement dependent fields, you should evaluate the Business & Workflow rule on field changes.

• **Changes to choice lists can break Business & Workflow rules**

If you remove choices from a choice list, or change the meaning of a choice, rules that use the choice list may stop working or result in unexpected behavior.

• **By default, rules apply to all users**

To build group-specific rules, use the macro `<User in Group>` in your conditions.

• **The order of rules is important**

Rules are evaluated in the order they are listed in the Business & Workflow Editor. For example, in the default Workflow, the rule `Admins-<Any>` is the first rule in the list. This ensures that any member of the Admin group can make any change to the Status field.

If the `Admins-<Any>` rule is last, then an analyst who is also a member of Admins does not have full administrator permissions for changing the Status field. The stricter rules are evaluated first, limiting the changes the analyst can make. If the `Admins-<Any>` rule is last, a developer who is also a member of Admins does not have full administrator permissions for changing the Status field. The stricter Developer rules are evaluated first, limiting the changes the developer can make.
WHAT IS A BUSINESS & WORKFLOW RULE?

A Business & Workflow rule has this simple format:

if ( condition ) then
    action

The condition can test:

- If a user belongs to a specific group
- If a specific choice was selected from a choice list.

Multiple conditions can be joined with a logical AND. The only test operator available is the equal to operator (=).

If the rule is a possible values rule, the action can specify the possible values for one or more choice lists.
If the rule is a dependent values rule, the action can select choices from one or more choice lists.

They make possible the establishment and application of incident models alternatives. These can be generic with the use of macros or given specific values to specify for very specific sets of situations where combinations of values from different fields need to trigger a corresponding action rule.
CREATING RULE TEMPLATES

Before you can define any rules, you must create a template. Templates define the fields used in rules, and rules provide the values. For example, a template might look like this:

When:

<User in Group> = _ _ _ _ AND
Status = _ _ _ _

The possible values are:

Status = _ _ _ _

A template defines what the rules look like, while a rule fills in the _ _ _ _ parts with specific values.

To create a rule template:

1 Log on to VIZOR Web Admin. Click the Workflow tab. In the Project list, click a project.

Business & Workflow rules based on this template apply to all Web views of this project.

2 Click Template and click Add.

3 In the Add New Template dialog:
   - In the Template Name box, type a name for the template.
   - In the Template Description box, type a short description of the template.
   - Select the type of rules you want to define:

     A Dependent Values rule makes the value of one field depend on the value of another field.

     For example, if How Found = Reported by Customer then Priority = Highest.

     A Possible Values rule makes the possible values of one field depend on the value of another field.

     For example, if Type = Doc Defect then the possible values for Functional Area = Help, Readme, or Manual.

     A Hidden Fields rule makes the visibility of one or more fields depend on the value of another field.

     For example, if Substate = Cannot be Fixed then the Estimated Fix Time field will disappear.
A **Required Fields** rule makes the required state of one or more fields depend on the value of another field.

For example, if $Substate = \text{Duplicate}$ then $\text{Duplicate Issue}$ will become a required field.

A **Disabled Fields** rule makes the functional availability of one or more fields depend on the value of another field.

For example, if $Substate = \text{Cannot be Fixed}$ then $\text{Fixed by}$ will be disabled, preventing user input.

A **Hidden Tabs** rule makes the visibility of one or more tabs depend on the value of a field.

For example, if $Substate = \text{Cannot be Fixed}$ then the $\text{Fix}$ tab will disappear.

4. Click **OK**.

5. In the list of templates and rules, click the new template.

6. Under **Conditions**, click $\exists$. Then click the **Field** box three times and click a field whose value you want to test. Repeat for each additional field you want to test.

   **Conditions determine when a rule is applied. If all the field tests evaluate to True, the rule is applied.**

   **Note that the Field list contains single-choice fields only.**

7. If you created a **Dependent Values** template, click $\exists$ under **Dependent Values**, then click the **Field** box three times and click the field whose value you want to set. Repeat for each field whose value you want to set.

   **Note that the Field list contains single-choice fields only.**

   If you created a **Possible Values** template, click $\exists$ under Possible Values, then click the **Field** box three times and click the field whose possible values you want to specify. Repeat for each field whose possible values you want to specify.

   **Note that the Field list contains single-choice fields only.**

   If you created a **Hidden Fields** template, click $\exists$ under Hidden Fields. Once an empty field row has appeared, no further action is necessary. Multiple fields will be available for selection when **Defining Rules** defining rules.

   If you created a **Required Fields** template, click $\exists$ under Required Fields. Once an empty field row has appeared, no further action is necessary. Multiple fields will be available for selection when defining rules.

   If you created a **Disabled Fields** template, click $\exists$ under Disabled Fields. Once an empty field row has appeared, no further action is necessary. Multiple fields will be available for selection when defining rules.

   If you created a **Hidden Tabs** template, click $\exists$ under Hidden Tabs. Once an empty tab row has appeared, no further action is necessary. Multiple tabs will be available for selection when defining rules.
DEFINING CONDITIONS

DEFINING CONDITIONS BASED ON USER GROUPS

By default, a rule applies to all users. To build group-specific rules, use the macro `<User in Group>` in your conditions.

If a user belongs to a group for which there is no rule, then for possible values, the fields displays all possible values.

Rules that apply to the Users group apply to all users, because all users are members of the Users group. Rules for specific groups can override the base rule defined for the Users group.

Using user group conditions in a business rule of the type Disable fields described below to limit access to an incident’s information given a user’s membership to any given group is quite useful (e.g. a disabling rule for all fields triggered on condition that the incident ID=X will specifically limit access to that specific incident).

DEFINING CONDITIONS FOR NEW ISSUES

To define rules that apply only to new issues, use the macro `<New Issue>` in the condition. `<New Issue>` is equal to Yes only for issues that have never been saved.
DEFINING RULES

Defining a rule involves filling in the template with specific values.

Note that while you edit rules, you can edit the values, but you cannot add or remove fields. To add or remove fields you must edit the rule template.

To define a rule:

1 Log on to VIZOR Web Admin. Click the **Workflow** tab.

2 In the **Project** list, click a project, then click a rule template.

3 Click **Rule** and then click **Add**.

4 Under **Conditions**, specify the values to test. For each field, click the **Value** box three times and then click the field value you want to test for.

5 If you are defining a **Dependent Values** rule, then under **Dependent Values**, for each field, click the value you want to set. To use the value of another field, double-click the `<Values of Field???>` macro.

   If you are defining a **Possible Values** rule, then under **Possible Values**, for each field, select the check boxes for each possible value.

   If you are defining a **Hidden Fields** rule, then under **Hidden Fields**, for each field, select the check boxes for each field you wish to hide.

   If you are defining a **Required Fields** rule, then under **Required Fields**, for each field, select the check boxes for each field you wish to make required.

   If you are defining a **Disabled Fields** rule, then under **Disabled Fields**, for each field, select the check boxes for each field you wish to disable.

   If you are defining a **Hidden Tabs** rule, then under **Hidden Tabs**, for each field, select the check boxes for each tab you wish to hide.

6 Click **Apply** to apply the rule to the Web views of the project.

---

NOTES

You can also copy a rule and edit it. To copy a rule, click the rule, then click **Rule**, click **Copy**, and type a name for the new rule.
DELETING RULES

To delete a rule:

1. In the list, click a rule.
2. Click Rule and then click Remove.
3. Click Apply to apply the changes to the Web views of the project.

RENAMEING RULES

To rename a rule:

1. In the list, click a rule.
2. Click Rule and then click Rename.
3. Type the new name for the rule.

To change the default names for new rules:

1. In the list, click a rule template. Click Template and then click Properties.
2. In the Name rules according to box, type the new default name for rules.

By default, rule names are based on the condition values (the values entered in the Value column). The string %Value0% represents the value in the first row of the condition, %Value1% represents the value in the second row, and so on.

If you use a text string (such as WorkflowRule) as the default rule name, rule names are formed by appending a number to the string.
USING MACROS IN RULES

<Any>

Use the <Any> macro in conditions to define a rule that applies to any value of a field, including <Empty>. For example, in the default workflow, the Admins-<Any> rule allows members of the Admins group to set any value in the Status field.

<Empty>

Use the <Empty> macro in conditions to define a rule that applies when a field is empty.

>User

>User> represents the current user (the user currently logged on to the Web view). You can use <User> in conditions, as a possible value, and as a dependent value.

>New Issue

>New Issue> is used to create rules that apply only when an issue is created.

For example, to ensure all issues submitted by managers have high priority by default, a rule like this can be created:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Dependent Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;New Issue&gt; = Yes</td>
<td>Priority=High</td>
</tr>
<tr>
<td>&lt;User in Group&gt; = Managers</td>
<td></td>
</tr>
</tbody>
</table>

If the <New Issue> condition is not included, the manager would not be able to change the priority because the rule would reset the value to High when the issue is saved.

<Value of Field???>

This macro allows you to define a Dependent Values rule that assigns the value of a field to another field. For example, when an issue is fixed, a workflow rule could set the value of the Fixed By field to <Value of Owner>.
When you add a dependent values rule, you'll see the <Value of Field???> macro in the Values column of the Dependent Values table. Double-click <Value of Field???> and then select the field whose value you want to use.

By default, the Submitter field is not enabled. To use the field in the <Value of Field ???> macro, you must enable it using the Field Editor in VIZOR Admin.
SETTING POSSIBLE VALUES

When you set the possible values of a field, you don’t have to include the current value of the field in the list. For example, given this rule:

When:

\[ \langle \text{User in Group} \rangle = \text{Employees AND Status} = \text{Waiting} \]

The possible values are:

- \text{Status} = \text{Dropped}
- \text{Status} = \text{In Progress}
- \text{Status} = \text{Resolved}

When \text{Status} is set to \text{Waiting}, the \text{Status} list contains \text{Dropped, In Progress, Resolved, and Waiting}.

When:

\[ \langle \text{User in Group} \rangle = \text{Developers AND Substate} = \text{Assigned} \]

The possible values are:

- \text{Substate} = \text{To Be Verified}

When \text{Substate} is set to \text{Assigned}, the \text{Substate} list contains \text{Assigned} and \text{To Be Verified}.

CHANGING WHEN RULES ARE EVALUATED

By default, Business & Workflow rules are evaluated when an issue is loaded and when issues are created. However, you can force rules to be evaluated when a user changes the value of one of the fields specified in the condition. Keep in mind that evaluating rules on field changes can have a potentially higher performance cost.

To evaluate rules on field changes:

1. In the list, click a template.
2. Click Template and then click Properties.
3 Select the **Evaluate rules when users change field values** check box.

4 In the Template Properties dialog, click **OK**.

5 Click **Apply** to apply the change to the Web views of the project.

---

**CHANGING THE ORDER OF EVALUATION**

Rules are evaluated in the order they are listed in the Workflow Editor. You cannot change the order of rules in a template (except by creating them in the desired order), but you can change the order of the rule templates.

**To change the order of evaluation of rule templates:**

1 In the **Templates** list, click a template.

2 Click 🖇️ or 🖈️ to move the template up or down in the list.

3 Click **Apply** to apply the change to the Web views of the project.

---

**APPLYING BUSINESS & WORKFLOW RULES**

When you edit a rule, define a new rule, define a new group of rules, or change the group options, you must apply the changes. **Apply** automatically enables the group of rules. If you enable the rules, but don’t apply them, nothing happens.

**To apply Business & Workflow rules:**

1 In the list, click a template.

2 Click **Apply**.
NOTES

Web view users must log out and then log back on before the changes take effect.

DISABLING BUSINESS & WORKFLOW RULES

You can disable all the rules based on a given template.

To disable Business & Workflow rules:

1  In the list, click a template.

2  Click Template and then click Properties.

3  Clear the Enable in all Web views of the project check box, and click OK in the message box that appears.

4  In the Template Properties dialog, click OK.

5  Click Apply to apply the change to the Web views of the project.
ABOUT SERVICE LEVEL AGREEMENTS

A service agreement is an agreement between the help desk and users. It defines a required level of service for the users.

A service agreements can be with individual users (contacts), with all users in a department, or all users in a company.

A service level is a guarantee of a certain level of service. For example, a basic service level may provide 9-to-5 service during the regular working week, while a more comprehensive service level might provide 24 hour service, 7 days a week.

Each service level has its own hours of service, target response and closure times for issues, and escalation rules.

A Web view used by help desk analysts has an SLA tab. This tab contains information about the service level agreement that applies to the issue.

For example, when employee submits new issue, the Escalation State is automatically set to On, and the Problem Area is set based on the Service Type selected by the employee. Based on the service type, priority, and the employee’s contact information (name, department, and company), VIZOR sets the Target Initial Response Time, Target Closing Time and Associated SLA fields.
SETTING UP SERVICE AGREEMENTS

1. Define companies and departments, so you can create service level agreements with groups of users. When you create an agreement, it can be either with a specific user or with all users in a department or in a company.

2. Define the escalation levels.

3. Define the service types.

4. Define service levels. Each service level is defined by the following:
   - Target times
   - Escalation Rules
   - Operational Hours

5. Define service agreements.

TARGET TIMES

A service level defines target response and closure (resolution) times for each possible priority value.

**Target Initial Response Time** The time it takes to initially respond to a new issue. When a help desk analyst responds to an issue, the analyst has to enter the response date and time on the SLA tab of the Web view.

**Target Closure Time** The time it takes to resolve the issue, either by fixing the problem or providing an acceptable workaround. When an issue is resolved, VIZOR automatically enters the date and time into the issue.

When you create a service level, the level gets the default target times.

**To edit the target times:**

1. In the **Service Level** list, click a service level.

2. On the **Target Times** tab, click a row (for example, to edit the target times for the Highest priority, click that row).

3. Click **Edit**.

4. In the Edit Target Times dialog, type the target times in the **Initial Response Time** and **Closure Time** boxes.

   **The target times must be integer values, such as 2, 7, or 10. You cannot enter decimal values, such as 2.5.**

   You can change the time units between minutes, hours, and days. For example, to change from hours to minutes, **click hour(s) and then click minute(s) in the pop-up list.**
ESCALATION LEVELS

Escalation levels allow the help desk to better identify, query, report, and monitor priorities and urgent issues. By default, VIZOR defines five escalation levels. Level 1 is the lowest level; Level 5 is the highest.

Time-based escalation rules are used to define a sequence of escalation levels. For example, when a new issue is first submitted to the help desk, the issue is at Level 1. If the help desk does not respond to the issue within the target initial response time, the issue is escalated to Level 2. As more time goes by without either a response or a resolution, the escalation level of the issue is raised, until it reaches the highest escalation level.

Escalation rules and SLAs are enforced only for issues where the Escalation State is set to On. Escalation State is a field on the SLA tab of a Web view. By default, escalation is on, but help desk analysts can pause or disable escalation.

To edit the escalation levels:

1. In VIZOR Web Admin, click the Choices tab.
2. In the Project list, click a project.
3. In the Choice List list, click Escalation Level.
4. Edit the escalation levels:
   - To edit an escalation level, click the escalation level and then click ✎.
   - Click 📂 to create a new escalation level.
   - To delete an escalation level, click the escalation level and then click ✗.
   - To reorder the list, click an escalation level and then use ✔️ and ▲ to move it.
ABOUT ESCALATION RULES

Escalation rules change the escalation level of an issue. Each service level has its own escalation rules.

An escalation rule consists of conditions and actions. If all the conditions are true, then all the actions are executed.

To define an escalation rule:

1. In VIZOR Web Admin, click the SLA tab.
2. In the Project list, click a project.
3. Click Service Levels.
4. Click the Escalation Rules tab.
5. Click Add, or click an existing rule and then click Copy.
6. In the Escalation Rule Name box, type a name for the rule.
7. Define the condition that triggers the rule.
8. Define an action that changes the escalation level when the condition is met.
9. Click the check box to enable the condition.
ORDER OF EVALUATION

Escalation rules are evaluated in the order they are listed on the **Evaluation Rules** tab. The first (top) rule is evaluated first, then the next rule below it, and so on.

You can change the order of evaluation by using the Up and Down buttons.
CONDITIONS

You can define multiple conditions. When you have multiple conditions, all conditions must be satisfied before the corresponding actions are executed.

Note that you must select the check box adjacent to a condition; otherwise the condition is disabled.

TARGET TIME CONDITIONS

You can define conditions based on the target response and closure times. For example, an escalation rule can escalate an issue if the issue has not been assigned to a help desk analyst within the guaranteed response time for that service level.

Alternatively, an escalation rule can send an e-mail reminder when an issue has not been resolved within the guaranteed response time.

<FIELD> = <VALUE>

For convenience, the Add Escalation Rule editor allows you to easily add conditions that test the values of up to five choice list fields.

MEETS THE QUERY <VALUE>

For more complex conditions, you can use queries built with the Query Editor in VIZOR Admin. Queries can use any number and type of field to determine whether to escalate an issue.

For any given record, VIZOR can carry out automatic assignment or reassignment (to users or groups), can carry out automatic escalation using the its SLA component, and even notify concerned parties based on any field (Be it based on changes, a particular SLA in force, an override or even a specific value for a important field like Category. Escalation rules can perform the following actions:

- Change the issue priority, owner, assigned work team, or escalation level.
• Send an e-mail message.

• Run a program.

SENDING E-MAIL MESSAGES

To send an e-mail message

1. Under Actions, click Send an e-mail.

2. In the E-mail Content editor, complete the To, Subject, and Body of the message. You can also attach files.

EDITING THE TO, CC, AND FROM FIELDS

You can use the macros or you can specify users.

To insert a macro:

1. Click in the To, CC, or From box.

2. Under Available Macros, click the macro you want to insert.

The Contact is the person who reported the issue, while Submitter is the person who entered the issue into VIZOR. For example, if a help desk analyst takes a support call, the contact is the person who called, and the analyst is the submitter.

Previous Owner is useful when you send an e-mail message because an issue is reassigned.

To add users to the To, CC, and From lists:

1. Beside the To, CC, or From box, click 🔄.

2. In the Select Users and Contacts dialog box, double-click the users and contacts you want to add.

The list of selected users and contacts is displayed under Selected Users and Contacts. You can edit this string of text, for example, to remove a user, or to add the e-mail address of a person who is not a user or contact.

NOTES
The text box beside the Find button allows you to display all users and contacts whose names start with the same letters. In the text box, type the first few letters of the name and then click Find.

To display the complete list of users and contacts again, delete all text from the box and then click Find.

Click Advanced to search for all users and contacts whose names contain the same string, or to search based on e-mail addresses.

EDITING E-MAIL CONTENT

You can use macros to insert the issue number, the name of the project, and the values of different fields (such as the Summary and Description Log).

To insert the value of a field:
1. In either the Subject box or the Body box, click where you want to insert the field value.
2. Under Available Macros, click Field Value.
3. In the Field Value dialog, click the field whose value you want to insert.

If you want to insert the issue description, insert the Description Log field, not the Description field.

To switch to HTML format:

- Select the HTML in Body check box.

ATTACHING FILES

To attach files to an e-mail message:

1. Beside the Attachments box, click .
2. In the E-mail Content Attachments dialog, click Browse and locate the file you want to attach. Click Link.

This adds the file to the list of files linked to this e-mail message. Every time the e-mail message is sent, the linked files are attached to the message.
RUNNING PROGRAMS

To run a program, type the location and name of the program in the Run Program box. You can include command-line arguments for the program.

The default working directory for programs is the Windows system folder (for example, C:\Windows\system32).

NOTES

Programs must not have a user interface or require any user input. The programs are run silently by the Mq.Evaluator service. By default, the programs are run under the credentials of the same user who runs the Mq.Evaluator service (CensusUser by default). You can check this in the Services dialog (Administrative Tools > Services, open the Properties for the service, and then go to the Log On tab).
SPECIFYING OPERATIONAL HOURS

The operational hours define when the service level agreement is in effect. The service level clock stops running outside of those hours.

For example, if the hours of operation are from 9 to 5, Monday to Friday, then a new issue submitted at 4:59 p.m. on Friday is not going to trigger any escalation rules during the weekend. If the service level specifies an initial response time of 30 minutes, then the help desk has until about 9:29 a.m. on Monday before any escalation rules are triggered.

Note also that help desk analysts can stop the clock for specific issues (by setting the Escalation State to Paused). For example, the analyst may “hit pause” while waiting for more information from the end user.

To set the operational hours

1 In VIZOR Web Admin, click the SLA tab.

2 In the Project list, click a project.

3 Click Service Levels.

4 Click the Operational Hours tab.

5 In the Start Time and End Time boxes, enter the working hours during which the service level is in effect. Type the times in the format 9:00 AM or 5pm.

6 Enter the number of working hours in a day.

7 Add holidays and other exceptions to the standard working hours.

   a Click Add.

   1 Click the day you want to add.

   2 Click OK.
DEFINING SERVICE LEVELS

To define a service level:

1. In VIZOR Web Admin, click the SLA tab.
2. Click Service Levels.
3. In the Project list, click a project.
4. Beside the Service Level box, click .
5. In the Add Service Level dialog, type a name and a description for the service level.
CREATING SERVICE AGREEMENTS

A service agreement is an agreement between the help desk and users. The service agreement defines a required level of service for the users.

A service agreement can be with individual users (contacts), with all users in a department, with all users in a company or apply to everyone (Global).

GLOBAL SERVICE LEVEL AGREEMENTS

If you would like to define an agreement that will be applied for all issues that don’t fall under other agreements for users, departments or companies, select Global for who the agreement is with. To override the global agreement for specific scenarios, you can still define agreements for certain users, departments or companies.

To create a service agreement:

1. In VIZOR Web Admin, click the SLA tab.
2. In the project list, click a project. (Each project has its own service agreements.)
3. Define a service type. (Each agreement covers a specific type of service, such as Network, Software, or Hardware service.)
4. In the Service Agreements section, click Add.
5. In the Add Service Agreement dialog, enter the required information:

   Agreement Name The name used to identify the agreement.

   Agreement Description Allows you add some notes or comments related to the agreement. Note that you can also attach documents to an agreement.

   Agreement is with a A service agreement can be with individual users (contacts), with all users in a department, all users in a company or everyone (Global).

   Agreement Customer Depending on whether the agreement is with a contact, a department, or a company, this list includes all the possible users, departments, or companies. If the agreement is global, this list is disabled.

   Reporting Period Choose whether reports for this agreement are weekly, monthly, quarterly, semi-annual, or annual. The reports are available from the Service Agreements section of the SLA tab (click the Reports
button).
APPLYING SERVICE AGREEMENTS TO ISSUES

You can apply a service agreement to the issues that are already in the project database. To do this, use a query to specify the issues to which the service agreement is applied.

**To apply a service agreement:**

1. In VIZOR Web Admin, click the **SLA** tab.
2. In the project list, click a project.
3. In the Service Agreements section, click a service agreement.
4. Click **Apply**.
5. In the Apply Service Agreement dialog, click a query. The agreement is applied to the issues returned by that query.
DISABLING SERVICE AGREEMENTS

To disable a service agreement:

1  In VIZOR Web Admin, click the SLA tab.

2  In the project list, click a project.

3  In the Service Agreements section, click a service agreement.

4  Click Edit.

5  In the Update Service Agreement dialog, clear the Service Agreement is enabled check box and then click OK.
SERVICE LEVEL REPORTING

VIZOR includes a set of service level reports to help you monitor and measure help desk performance against service level objectives,

To view a service level report:

1  In VIZOR Web Admin, click the SLA tab.

2  In the project list, click a project.

3  In the Service Agreements section, click Reports. (If the Reports button is disabled, click a service agreement.)

4  In the Service Agreement Reports dialog, click the report you want to view, and then click OK, or double-click the report.

5  In the toolbar of the Crystal Reports viewer, click to print the issue. Click to save the report as PDF, Word, or Excel.
SERVICE TYPES

A service type identifies a type of service delivered by the help desk to help desk customers. The Service Type (for example, software or hardware) is set when an issue is submitted.

VIZOR includes default Business & Workflow rules that base the Problem Area on the Service Type.

To edit the list of service types:

1. In VIZOR Web Admin, click the SLA tab.
2. In the Project list, click a project.
   
   Each project has its own list of service types.
3. In the Choice List list, click SLA Service Types.
4. Edit the service types:
   - Click 📝 to create a new service type.
   - To delete a service type, click the service type and then click ✗.
   - To rename a service type, click the service type and then click 🔍.
   - To reorder the list, click a service type and then use ✔️ and 🔽 to move the service type.
CHAPTER 32 - E-MAIL NOTIFICATIONS

ABOUT NOTIFICATIONS

VIZOR can generate notifications as email messages in order to inform team members, customers and any stakeholder about important events. Notification messages are sent through the native e-mail system.

Automation at its most basic starts with automated notifications to keep your team members up to date with changes to reported issues. They don’t have to run queries, inspect issues, and review revision histories to find out about changes. Instead, they get e-mail messages whenever new issues are assigned to them, whenever someone edits an issue already assigned to them and much more.

You should try to keep the number of notifications to a minimum. Defining too many notifications for field updates can overwhelm users with e-mail, resulting in users missing important notifications. Use notifications for changes to fields like **Owner**, **Status**, and **Priority**.

WHAT CAN YOU DO WITH NOTIFICATIONS?

You can send notifications to specific users or contacts, or to the current owner, the previous owner, or the contact (the person who reported the issue).

To trigger notifications, use simple when conditions that test for changes to an issue:

- Sending a notification when an issue is reassigned

  **When an issue is reassigned, you can use the** `<Owner>` **and** `<Previous Owner>` **to send notifications to both the new and the previous owner.**

  **Send Notification To:**
  `<Owner>;<Previous Owner>`

  **When:**
  Owner Update
The when condition in this example tests for updates to the Owner field.

- Sending a notification when a field is updated

You can use the Update test to send a notification when a field is updated.

When:
- Priority Update AND
- Revision Number > 1

In this when condition, the Update test checks for changes to the Priority field.

Testing the Revision Number allows you to distinguish between new issues and existing issues that have had their priority changed. Without the Revision Number > 1 test, a Priority Updated notification would be generated each time someone sets the Priority when they submit a new issue.

- Sending a notification when a field is set to a specific value

You can send a notification when the priority of an issue is changed to ASAPHighest. To do this, use a when condition that looks like this:

When:
- Priority Update AND
- Priority = ASAPHighest

This when condition sends a notification when Priority is changed. Without the test, a notification would be sent every time an issue with the specified Priority is saved.

- Sending a notification when a new issue is submitted

Each issue has a revision number that increases by one each time it is saved. When an issue is first submitted, this revision number is set to 1, so you can test the revision number to find new issues. For example:

When:
- Revision Number = 1 AND
- Submitted Date = <Today> AND
  Priority = ASAP OR Priority = Today Priority = Highest OR Priority = High

This when condition looks for new issues submitted today with the highest priorities.

- Sending a notification when certain users update an issue

If employees mark the issues they reported as Dropped or Resolved, you can notify the owner of the issue using this test:

Send Notification To:
When:  
<User in Group> = Employees AND  
Status Update

The <User in Group> macro allows you to test for user group membership. When a manager changes the priority of an issue, you can notify the owner of the issue.

Send Notification To:  
<Owner>

When:  
<User in Group> = Employees AND  
Status Update

• Sending a notification when an issue is resolved

You can use the <Contact> macro to notify the submitter when an issue is resolved, or dropped. For example:

Send Notification To:  
<Contact>

When:  
Status Update AND  
(Status = Resolved OR  
Status = Dropped )

To send an e-mail with a different subject for each possible case (for example, Issue resolved, and Issue dropped), define a separate notification for each Status value.

You can configure VIZOR to automatically generate notification messages that inform users of changes to the databases. Notifications work by monitoring one or more fields in the database and then sending e-mail messages to the contact, the owner, the previous owner, or a specific user when a change occurs.

Notifications are sent using the native e-mail system. They can be used to keep users up-to-date with changes to issues avoiding the need to run queries, inspect issues, and review revision histories to find out about changes.

Use notifications for changes to fields like Owner, Status, and Priority. Defining too many notifications can overwhelm users with e-mail, and result in them missing important notifications.
THE AUTO – CLOSE NOTIFICATION

The auto close tickets notification evaluates a specific ticket condition to close it. This can be useful in many cases such as managing deadlines or avoiding unresolved tickets from accumulating if not attended. This is a special "notification" that doesn't send any emails out, but rather closes the tickets when the preset criteria is met.

To set up the auto close feature, follow the steps below:

1. Open VIZOR Admin and select the HelpDesk project
2. Click on the "Project" menu and select the Notification Editor
3. In the notification Name, select the "Auto-close Tickets"
4. In the "When" drop down menu, click on the "..." button to open the "When Editor"

![When Editor](image)

5. Set up the conditions you want the feature to work by and click on apply

EDITING NOTIFICATIONS

VIZOR Admin provides a Notification editor for editing notifications. To open the editor, click Notification Editor on the Project menu. With the Notification editor, you can:

Specify who receives the notification. Select the names of one or more users from the Send Notification to list.

- Define when you want the system to send the notification. Click the When list button to define the condition.
- Specify what you want to include in the notification message. The body of a notification message can include information from the issue or the revision history.
- Specify the reason for the notification. Type a one-line description in the Notification Description box. You can include this description in the body of the e-mail message.
SPECIFYING NOTIFICATION RECIPIENTS

While you can send notifications to specific VIZOR users and contacts, it is more useful to send notifications to the users listed in the **Owner** and **Contact** fields of an issue. You can do this using macros. For example, to send a notification to the owner of an issue, click the `<Owner>` macro in the **Send Notification To** list.

**<Owner>** The user whose name is currently entered in the Owner field.

**<Previous Owner>** The user who owned the issue before it was reassigned.

**<Dev Owner>** In projects based on XSupportBugTrk, `<Dev Owner>` is the developer assigned to an issue, and `<Owner>` and `<Previous Owner>` are the current and previous support owners.

**<Contact>** The person whose name is currently entered in the Contact field.

**<Purchase Stakeholders>** Useful for notifications for Purchase Line Items. It will send to the Stakeholders of the Purchase Line Item, as well as the Contact, Stakeholders and Business Owner of the Line Item's related License.

DEFINING WHEN CONDITIONS

When conditions determine when VIZOR sends notifications. A when condition is a test. If an issue satisfies the test, VIZOR sends a notification for that issue. You typically use when conditions to:

- Test for updates of a given field. For example, a when condition can generate a notification when issues are reassigned (by testing if the **Owner** field has been updated).

- Test for updates by a specific user or by users in a specific group. For example, a when condition can generate a notification when anybody except a manager updates the **Priority**.

To edit the when conditions for a notification, use the When editor. Like the Query editor, the When editor allows you to combine multiple conditions with parentheses and the **And** and **Or** operators.

**To open the When Editor:**

Click ☑️ beside the **When** field in the Notification editor.
SENDING NOTIFICATIONS OF FIELD UPDATES

To send a notification when someone edits a field, use the Update test.

To send Update notifications for a field, select the Maintain Revision History check box for that field (in the Field Editor).

BASING NOTIFICATIONS ON USERS

The Field Name list includes the macros <User> and <User in Group>. Use these macros together with = and <> to test who updated an issue. For example, the following condition sends a notification when any employee updates the Status of an issue.

SPECIFYING NOTIFICATION CONTENTS

In general, the contents of the email notification sent can be of two kinds:

- Pre-defined mail contents.
- Based on an email template.
A notification message can include information about the event and entity that generated the notification. For example, if VIZOR generates a notification when a new high priority issue is submitted, the message can include a brief description, such as New high priority issue.

Notifications generated because of changes to a field can include entries from the Revision History that show the changes. The notifications can also include either a summary or a complete copy of the issue.

---

**PRE-DEFINED MAIL CONTENTS**

To specify the contents, you select one or more of the following from the Include list:

- **Notification Description** is the text entered in the Notification Description box of the Notification editor.

- **Detailed** is a copy of the issue.

- **Revision Record** is the entry from the Revision History for the change that generated the notification.

- **Summary** is a brief summary of the issue.

The Notification Description, Revision Record, and Summary are included as text in the message body. Detailed is included as a separate attachment.

To change the information included in the Summary section, edit the Notification - Summary report. For the Detailed attachment, edit the Notification - Detailed Record report.

By default, the Detailed attachment is an HTML file. If you use Crystal Reports for listing reports, the Detailed attachment is an RTF file. See Viewing Reports for more information on using Crystal Reports for listing reports.

The subject of an e-mail notification message is automatically generated, and has this format:

Notification [<project>]: Record <issue number> <notification name>

For example:

Notification [VIZOR]: Record 11 Status Updated
BASED ON EMAIL TEMPLATES

To specify the contents of the email, you can also select one existing email template. In the notifications editor, select Advanced and then the option for the list of email templates. Select the desired one from the list.

The email notification will be sent out using the email template Subject, Message Body and Attachments, with any macros resolved automatically.

THE SUBJECT OF THE EMAIL

The subject of the email can be set controlled in different ways:

1) By default, notifications that do not use an email template have the subject of the email set to:
   Notification [<project name>] : Issue <entity ID> < Notification Description>
   e.g.:
   “Notification [HelpDesk]: Issue 13031 Issue reassigned”

   Emails that contain one of the pre-defined mail contents: Notification Description, Detailed, Revision Record or Summary, do not use an email template by default.

2) The subject of the email can be set to simply be the same as the text of the Notification Description entered in the Notification Editor.
   e.g.:
   “Issue reassigned”
   If this is desired, you can set the target area of the mail content Notification Description to be 1 (subject) in the tblMailContent table.

3) To have an email notification containing one or more of the default mail contents: Notification
Description, Detailed, Revision Record or Summary, and with the subject customized, you need to mix pre-defined contents + an email template.

e.g.:

“Custom notification for ID# 2423 – Urgent!” + Revision Record in the email body.

To implement this you need to edit directly the table tblNotifications:

1. Using the Web email template editor, create an email template that only has a Subject. Keep the email body empty.
2. Open the Notification Editor and create a notification using the email template created above (Advanced > Email Template).
3. Configure the rest of the notification as needed, setting the recipients of the email, the mail contents, etc. Save and close the Notification Editor.
4. In SQL Management Studio, open the table tblNotifications in edit mode in the DEF database of the project in question.
5. Look for the desired notification to change. Each email notification has one row.
6. Add “Mail Template” to the field “tMailContent”. Separate the values with a “;”. For example, “Mail Template;Revision Record”.
7. Save the changes and close the table. You can test the notification now.

MANAGING WORKFLOW WITH NOTIFICATIONS

The Status of an issue indicates where the issue is in your issue tracking system. As the status of an issue changes from New to Assigned to In Progress to To be Verified to Resolved, different team members become responsible for the issue.

For example, when the issue is assigned to a help desk analyst, you can use update notifications to help manage your help desk workflow. To do this, define a notification that is sent to <Owner> when the issue is assigned and the Status field set to Assigned.

When the help desk analyst marks the issue an In Progress, you can send a notification to the employee who submitted the issue. Similarly, the an Employee updates the issue (for example, by adding more details to the description), you can have VIZOR notify the help desk analyst of the change. Each time the
current owner changes the Substate and reassigns the issue, VIZOR sends a notification to the new owner. For example, suppose a developer fixes an issue:

14. The developer sets the Substate to Fix To Be Reviewed and reassigns the issue to the person responsible for reviewing the fix (the code reviewer).
15. The code reviewer receives a Substate update notification telling them that they need to review the fix.
16. After the code review, the reviewer then sets Substate to Reviewed and reassigns the issue back to developer responsible for the fix. The reviewer can also add notes and comments in the Fix Information field of the issue record.
17. The developer receives a Substate update notification telling them that the fix is reviewed and accepted.
18. The developer then checks in the fix, sets Substate to To Be Verified, and reassigns the issue to a tester.
19. The tester receives the Substate update notification and reviews the fix. After the fix is verified, the tester sets the Substate to Fixed and the issue is closed.

Related Topics

SETTING UP NOTIFICATIONS

To set up notifications for VIZOR Web, use:

- VIZOR Web Admin, a Web-based administration utility.
- VIZOR Admin, a Windows-based administration tool.

To set up notifications:

1  Set up the notification service.

2  In VIZOR Admin or in VIZOR Web Admin, set the Mail Server options. These options configure the mail server used to send notifications, and specify how often the notification services checks for new notifications to send. For more information, refer to Mail Settings.

3  In VIZOR Admin, define the notifications you want to send.

SETTING UP THE NOTIFICATION SERVICE
VIZOR installs a Microsoft Windows service named **Mq Issue Agent**. This service runs on the server where you installed Vizor Web, and takes care of generating and sending e-mail notifications.

In the Windows Services, you can specify whether you want the service to start automatically whenever the server boots or you want to start the service manually.

---

**TO SET UP THE NOTIFICATION SERVICE**

1. Open the Windows **Control Panel**. Double-click **Administrative Tools**, then double-click **Services**.
2. In the right pane, right-click the **Mq Issue Agent** service, and then click **Properties**.
3. On the **Log On** tab, select **This account** to choose a user account. Type the password for the account in the **Password** and **Confirm password** fields.
   
   *The account must be a valid domain user account and have permissions through the network.*
4. Click **Apply**.
5. On the **General** tab, stop and start the service.

---

**SETTING THE MAIL SERVER OPTIONS**

You can set the outgoing e-mail server options in VIZOR Admin or in VIZOR Web Admin.

---

**TO SET THE MAIL SERVER OPTIONS IN VIZOR ADMIN:**

1. Click **Options** on the **Tools** menu.
2. Set the server mail options. These options are used when sending notifications.
3. If you use an SMTP mail system, click **Test** to check your settings.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Configuration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Server Mail Sender</td>
<td>Name of sender for SMTP e-mail. Some SMTP mail servers require the sender name to be a valid e-mail address. Note that this name does not appear in the From field.</td>
</tr>
<tr>
<td>SMTP Server</td>
<td>Name or IP address of your SMTP mail server. You can test your settings by clicking Test.</td>
</tr>
<tr>
<td>Server SMTP Port</td>
<td>The port for the SMTP server.</td>
</tr>
<tr>
<td>Server Mail Interval</td>
<td>Specifies how often (in minutes) VIZOR generates notifications.</td>
</tr>
<tr>
<td>Send Invalid Notifications To</td>
<td>If the Maximum Notification Retries is surpassed, the notification will be sent to this address. If there is no address specified, the notification service will continue trying to send to the original recipient.</td>
</tr>
<tr>
<td>Maximum Notification Retries</td>
<td>The maximum number of retries for e-mail notifications. Once surpassed, the notification will be sent to the address specified in the Send Invalid Notifications To option.</td>
</tr>
<tr>
<td>Mail Program to use for Notifications</td>
<td>Enter 1 to use the default mail sender. Enter 2 to use the Chilkat mailer.</td>
</tr>
</tbody>
</table>

To set the mail server options in Web Admin, refer to Mail Settings.

HANDLING NOTIFICATION FAILURES

If VIZOR is unable to send a notification, it tries to resend the notification. By default, the maximum number of retries is 100. When the maximum number of retries is reached, the notification is sent to the e-mail address specified by the Send Invalid Notifications To option.

To change the Maximum Notification Retries option or the Send Invalid Notifications To option, click Tools>Options in VIZOR Admin.
EXAMPLES

SENDING A NOTIFICATION WHEN A NON-OWNER UPDATES A HELPDESK ISSUE.

1. Open the Notification Editor.
2. Click the New Notification button.
3. As a notification name, enter Owner Issue Edited.
4. Click OK.
5. Click the Send Notification To dropdown, select <Owner>.
6. Click the [...] button next to the When field.
7. Click the New When button.
8. As the when name, write Non-owner updated the issue.
9. Click OK.
10. Click the Field Name cell in the first When Condition row, and select the value Revision Number.
11. In the Test cell, select >.
12. In the Value cell, type 1.
13. In the Operator cell, select And.
14. Click the Field Name cell in the second When Condition row, and select the value Owner.
15. In the Test cell, select <>
16. In the Value cell, select <User>.
17. Click Apply.
18 Click OK.

19 Click the When dropdown, and select the newly created Nonowner updated the issue entry.

20 Set the Include field to <All>.

21 In the Description field, write Someone edited your issue – see the included revision history changes.

22 Click Apply.

Log in, and create a new issue in the HelpDesk system, and make yourself the owner. Log in with another user, and then modify your issue. An e-mail should be sent to the e-mail address associated with your user account shortly.

---

SENDING A NOTIFICATION WHEN VIP ISSUES ARE UPDATED

For this exercise, we're going to be treating the users “Jean Manager” and “Jean Developer” as VIP users.

1 Open the Notification Editor.

2 Click the New Notification button.

3 As a notification name, enter VIP Update Notification.

4 Click OK.

5 Click the Send Notification To dropdown, select <Owner>.

6 Click the […] button next to the When field.

7 Click the New When button.

8 As the when name, write VIP user updated highest priority issue.

9 Click OK.

10 Click the Field Name cell in the first When Condition row, and
select the value Revision Number.

11 In the Test cell, select >.
12 In the Value cell, type 1.
13 In the Operator cell, select And.

14 Click the Field Name cell in the second When Condition row, and select the value Priority.
15 In the Test cell, select =.
16 In the Value cell, select Highest.
17 In the Operator cell, select And.

18 Click the Field Name cell in the third When Condition row, and select the value Submitter.
19 In the Test cell, select =.
20 In the Value cell, select Jean Manager.
21 In the Operator cell, select Or.

22 Click the Field Name cell in the fourth When Condition row, and select the value Submitter.
23 In the Test cell, select =.
24 In the Value cell, select Jean Developer.

25 Select the row you created in steps 24-26 and click the Add () button.

26 Click Apply.
27 Click OK.

28 Click the When dropdown, and select the newly created VIP user updated highest priority issue entry.

29 Set the Include field is set to <All>.

30 In the Description field, write A VIP issue has been updated!
31 Click Apply.

Log in as “Jean Manager” or “Jean Developer” (no password), and create a new issue in the
HelpDesk system. Log in as “admin”, and modify this issue to have Priority of *Highest*, and
change the Owner to *admin*. After saving the issue, further edits should trigger the notification.
SENDING A NOTIFICATION BEFORE THE EXPIRATION OF A PURCHASE (E.G. SUBSCRIPTION)

In this notification we mean a purchase in the generic term, although in reality the notification will be applied to a Purchase Line Item. This is because the End Date is a field of the line item.

For this example we will use the PurchasesAgreements project. In this project, both a Purchase and a Purchase Line Item are main records of the project. This means that when notifications are evaluated, the conditions you specify are evaluated for each Purchase and for each Line Item inside all purchases.

Why is End Date a field of the Line Item and not of the Purchase record?

A purchase in VIZOR can represent a real invoice, a purchase order or a purchase requisition in your organization. Sometimes, a single purchase may include multiple items, potentially of different types.

For example, you may purchase 3 subscriptions in the same “purchase”:

- Microsoft Office 365 E3
- Microsoft Office 365 E5
- Microsoft Exchange Online

And it may be that each line item expires in different dates:

- Microsoft Office 365 E3 until 23-SEP-2021
- Microsoft Office 365 E5 until 21-SEP-2021
- Microsoft Exchange Online until 20-SEP-2021

And thus the End Date is per line item.

The condition in a notification sent 60 days before expiration would look like this:

To create the notification:

1 Open the Notification Editor
2 Click the New Notification button.
3 As a notification name, enter “60 Before the Expiration of a Purchase”. 
4 Click OK.

5 Click the Send Notification To dropdown, select the macros:

<Contact>

.Business Owner>

.Stakeholders>

For this test, ensure the users you use in the Contact, Business Owner or Stakeholders have valid email addresses.

6 Click the [...] button next to the When field.

7 Click the New When button.

8 As the when name, write “60 Before Expiration”.

9 Click OK.

10 Click the Field Name cell in the first When Condition row, and enter this condition

   End Date = <60 Days From Now>
   Type = Line Item

* <60 Days From Now> is one of the built-in time macros available in VIZOR.

11 Click Apply.

12 Click OK.

13 Click the When dropdown, and select the newly created entry.

14 Set the checkboxes “Use Advanced Options” and “Use Mail Template”.

15 Select the desired email template from the list.

16 Click Apply.

17 Test the notification.
CHAPTER 33 - GENERATING WEB VIEWS

WHAT IS A WEB VIEW?

Web views are different views of a VIZOR project. Each Web view of a project can display different records and different fields.

A project is database of records of the main data you are tracking in that project (and their revision histories). Example of projects and their records can be: Help Desk – Issues, Resources – Assets, Users & Contacts - Employees

For example, employees don’t need to see all the issues in the database, just the ones they reported. Also, they don’t need to see internal notes and other information entered by the support staff. Support staff, on the other hand, need access to all the information in the issue database.

VIZOR can break down the complete record database into simpler sets based on their purpose, origin and/or category. This will help to better adequate or personalize your experience for more streamlined processes which will end up in increased efficiency for all the parties involved.

When logging in, the user will be greeted by a homepage like this (Different companies may have different homepage:

![Homepage Image]
• Clicking on any of the links in this part of the homepage will take us to its web view. For this example, we will use the “Assets” link.

• Once we click on it we will be taken to the Assets web view:

• Queries within the web view will determine what records the user is able to retrieve from the project database.
For example, if an IT manager would like to know how many assets are in process of repair, the “assets out for repair” query will retrieve the asset instances that are currently on repair, giving the IT manager easy access to the specific information needed.

ABOUT THE WEB VIEW EDITOR

Use the Web View Editor to create, edit, and generate Web views.

To start the Web View Editor from the Start menu:

- Click Start > Programs > Vector > VIZOR > Web View Editor. On the Start menu, point to Programs, click Vector VIZOR, and then click Web View Editor.

To start the Web View Editor from VIZOR Admin:

- On the Tools menu, click Web, then click Web View Editor.

The Tools > Web > Web View Editor command is also available when the Web View editor is installed on the same computer where you are running VIZOR Admin.
Example Web View Editor window.
ADDING/REMOVING FIELDS IN A WEB VIEW

Adding a field:

While on the Web View Editor, follow the steps below:

1. Click on the fields option in the left side of the window.
2. Choose the view you want to add the field to in the Project/View dropdown.
3. Choose the tab where the field will be located within your database records (Asset, issue, contact, etc. depending on your project database).
4. Select the field you want to include on your view from the “available” field list.
5. Click on the button move the selected field into the “Export to View” list.
6. Click on the button to generate your web views to update them and include the new field.

Removing a field:

...
While on the **Web View Editor**, follow the steps below:

1. Repeat steps 1 – 3 from the “Adding a field” section.
2. Select the field you want to remove from the “Export to View” list.
3. Click on the button to move the field into the “Available” field.
4. Click on the button to regenerate your web view.
CREATING WEB VIEWS

To create a new Web view, you must run the Web View Editor on the Web server. Web View Editors installed on other computers can only edit and regenerate existing Web views.

You can either create a new, blank Web view or you can copy an existing web view. Copying allows you to reuse all the settings in the existing Web view. For example, when you copy a Web view, all the field attribute settings are copied.

To create a new, blank Web view:

1. Run the Web View Editor on the Web server.
2. Click New View, type the name of the Web view, and click OK.
3. In the Project Name list, click a project.
4. In the View Type list, click the type of view you want to generate.
5. Set the group access permissions for the view.
6. Set the Web view attributes.
7. Export fields to the Web view.
8. Export queries to the Web view.
9. Click 📋 to save your settings and generate the Web view.

NOTES

• To log on to the Web view, click 📽.

• Click 📌 to save your settings without generating the Web view.
GENERATING WEB VIEWS

To generate a Web view:

1. In the Project / View list, click a Web view.

2. Click 🕹️ to generate the Web view.

3. To log off all users before generating the Web view, click Yes. If you click No, users logged on to the Web view do not see the changes until they next log on.

4. Click Yes to overwrite the existing files.

5. After the Web view is generated, click 🕹️ to log on to the Web view and test it.

NOTES

- Always run Web View Editor with a user with elevated permissions.

- You can generate Web views without using the Web View Editor. On the Web server computer, click Programs > Vector > VIZOR > Vizor Tools > Generate Web Views.

COPYING WEB VIEWS

You can create a Web view based on an existing Web view. Note that if you copy a view and then change the project, all view settings are cleared.

To copy a Web view:

1. In the Project / View list, click a Web view.
2 Click **Copy**.

3 Type a name for the new Web view.

The Web View Editor creates a new Web view that is an exact copy of the selected Web view.

---

**DELETING WEB VIEWS**

**To delete a Web view:**

1 In the **Project / View** list, click a Web view.

2 Click **Delete**.

Deleting a view deletes all the generated files and folders (used by that Web view) on your server.

---

**SHOULD I DELETE A DEFAULT WEB VIEW?**

You should never delete default web views. If you don't want to use them, remove access to the user groups in the web view editor, this will make the views disappear from VIZOR and prevent user access.

---

**RENAMING WEB VIEWS**

**To rename a Web view:**

1 In the **Project / View** list, click a Web view.

2 Click **Rename**.

3 Type a new name for the Web view.
TYPES OF WEB VIEWS

NORMAL VIEWS

Normal views allow users to submit and update issues, to view the history and e-mail conversation of the issue, to view reports and summary lists, and more. This type of Web view has more features available than the other types and every user session (from logon to logoff) takes up one license.

READ-ONLY VIEWS

Read-only views allow users to review existing issues, but not to edit them. All fields are read-only, and users cannot create or submit new issues.

KNOWLEDGE BASE VIEWS

Knowledge Base views allow users to look through Knowledge Base Articles that have already been published by VIZOR analysts. These views are equipped with a quick search feature, as well as the ability to load a specific article by ID.

The administrator can choose whether to create a Knowledge Base view that requires a logon, or not. If the view will not require the user to login, one privileged user account must be associated with the view.

For more information, refer to Knowledge Base Views.

FREQUENTLY ASKED QUESTIONS VIEWS

Frequently Asked Questions views provide a list of articles from the Knowledge Base, specifically, all of those that have Article Type set to FAQ. These views feature a quick search feature, and the ability to open multiple FAQs right in the search results.
The administrator can choose whether to create a FAQ view that requires a logon, or not. If the view will not require the user to login, one privileged user account must be associated with the view.

For more information, refer to FAQ Views.

**SUBMIT-ONLY VIEWS**

Submit-only views are used to only submit new records. A submit-only view is basically just a form and a Submit button. Users cannot run queries or edit (or even view) existing records. A typical example is for submitting HelpDesk tickets, where users may only open new tickets or issues but nothing else.

A submit-only view allows an unlimited number of users to submit issues. All you need is a single VIZOR user account. Users automatically log on to the view with this account (in fact, users never see the logon window, they go straight to the view).

This user account must belong to a group that has permission to open the Web view, and to add and update contacts. The account is used to set the Submitter field.

If you have more than one submit-only view for the same project, you may want to create separate accounts for each view. This allows you to distinguish between issues submitted from different views.

The user submitting the issue is considered the contact. Users must enter their contact information (name, e-mail, and so on) the first time they submit an issue.

**SELF-SERVICE VIEWS**

Self-Service views are a type of Web view to be used by either internal or external VIZOR users to enter issues and be able to view (and possibly edit) the issues they have submitted. You can choose to allow them to edit certain fields in issues that they have submitted (for example, the Description field); or allow them to edit fields that were left empty when they submitted the issue; or simply view their submitted issues in a read-only format.

For more information, refer to Self-Service Views.

**HOW LICENSES ARE USED DEPENDING ON THE TYPE OF WEB VIEW**

Each user session in a Normal Web view takes up one concurrent or floating license.
Submit-Only views do not take up any license.

Unlike normal Web views, the Knowledge Base, FAQ, Self-Service and Read-Only Web views follow a slightly different licensing model: for each concurrent license that is available, 5 logons will be allowed.

For example, if you have 20 concurrent licenses, and 15 licenses are already being used in Normal Web views, that means there are 25 logons (5 free concurrent licenses times 5) available to the Knowledge Base, FAQ, Self-Service or Read-Only views. These 25 logons are shared across all four Web views - which means you could have a scenario where all logons are used up with the Knowledge Base view using 6 logons, the Self-Service view using 8, the Read-Only view 4, and the Submit-Only view 7.

If you have 20 concurrent licenses and none of them are in use, there are 100 logons available to the Knowledge Base, FAQ, Self-Service or Read-Only views.

Reserving Licenses

It is possible to reserve licenses for specific users.

For more information, refer to Reserving Licenses.

SETTING WEB VIEW ATTRIBUTES

To set Web view attributes:

1. In the shortcut bar, click  Web View.

2. Click  (beside Attributes) to open the Web View Attributes dialog:

AUTO REFRESH SUMMARY LIST

Frequency (in seconds) to automatically refresh the Summary List. Enter 0 to turn off auto refreshing.

By default, the summary list will refresh every 300 seconds (5 minutes).

If you change this attribute, you must regenerate the Web view.

CONTACT TAB IN RECORD DETAILS
Whether the fields exported on the Contact tab should appear in the record details section (tabs section) or just in the user details pop-up.

If you change this attribute, you must regenerate the Web view.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the Web view. Displayed in the list of Web views that appears when a user logs on. The default description is the Project / View name. To include the project and view names in the description, use the macros <code>&lt;ProjectName&gt;</code> and <code>&lt;ViewName&gt;</code>. If you change this attribute, you must regenerate the Web view.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISPLAY ALL READ-ONLY FIELDS AS TEXT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read-only fields can be displayed as text (Yes) or as disabled controls (No). In a read-only Web view, all fields are read-only. In normal and submit-only Web views, read-only fields have been disabled through the Field editor. If you change this attribute, you must regenerate the Web view.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INCLUDE VSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adds the Version Control tab to the Web view. This tab allows users to link issues to source files in a Microsoft Visual SourceSafe database, and to perform version control operations such as check out and check in directly from a Web view.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ISSUES PER PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of issues to show per page in the Summary List.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIMEOUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of minutes of inactivity before the browser session times out and the user is logged off.</td>
</tr>
</tbody>
</table>
LOAD ISSUES NOT IN QUERY

If Yes, users can load any issue by typing the issue number in the Issue box of a Web view. If No, users can load only the issues shown in the Summary List.

WEB VIEW TEXT

Text that will appear above the fields on the first tab of the web view.

If you change this attribute, you must regenerate the Web view.

WEB VIEW TEXT CSS CLASS

CSS Class to use for the Web View Text. For more information, see Applying CSS Styles.

If you change this attribute, you must regenerate the Web view.

WEB VIEW THEME

Which theme to use for the web view. Themes alter visual elements like icons, text, etc.

This is an advanced attribute, and usually does not need to be changed.

If you change this attribute, you must regenerate the Web view.

SETTING GROUP ACCESS PERMISSIONS

You can control access to Web views on a group-by-group basis. When users try to log on, they see only the Web views that they have permission to access. The Web View Editor is thus a tool which can be used to define security and control for who can access authorization features like the approvals view when only a membership to a specific group is supposed to grant such clearance.

To set group access permissions:
1. In the shortcut bar, click **Web View**.

2. Click **Groups Allowed to Open** to open the View Permissions dialog.

3. In the **Groups** box, click the groups you want to be able to access the Web view.

   *If you allow the Users group to open the Web view, then all users can open the Web view.*

The **Groups** box lists the groups that are allowed to open the project (as specified in VIZOR Admin).

---

**HOW TO HIDE CERTAIN BUTTONS IN WEB VIEWS**

Some buttons are not controlled by features but are visible or not based on whether the user has access to the Web view. Use the Web View Editor to set the group access permissions that control who can log on to the Web views.

<table>
<thead>
<tr>
<th>WEB VIEW</th>
<th>BUTTON</th>
<th>VIEW TO SET PERMISSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td>Add Assets</td>
<td>Resources / AddGrp</td>
</tr>
<tr>
<td></td>
<td>Manage Asset Types</td>
<td>Resources / Manage</td>
</tr>
<tr>
<td></td>
<td>User Assets</td>
<td>Users&amp;Contacts / EmployeeAssets</td>
</tr>
<tr>
<td></td>
<td>Import</td>
<td>Configuration / Configuration</td>
</tr>
<tr>
<td><strong>CHECK IN / CHECK OUT</strong></td>
<td>User Assets</td>
<td>Users&amp;Contacts / EmployeeAssets</td>
</tr>
<tr>
<td><strong>SOFTWARE LICENSES</strong></td>
<td>Software Assets</td>
<td>Resources / SWAssets</td>
</tr>
<tr>
<td></td>
<td>Software Asset Types</td>
<td>Resources / SWAssetTypes</td>
</tr>
<tr>
<td>Category</td>
<td>Resource</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Software Installations</td>
<td>Installations / Library</td>
<td></td>
</tr>
<tr>
<td><strong>WEB VIEW</strong></td>
<td><strong>Button</strong> View to set permissions</td>
<td></td>
</tr>
<tr>
<td>SOFTWARE ASSETS</td>
<td>Add Assets Resources / AddGrp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software Asset Types Resources / SWAssetTypes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software LicenseManager / Licenses</td>
<td></td>
</tr>
<tr>
<td>SOFTWARE ASSET TYPES</td>
<td>Software Installations Catalog InventoriedSoftware / Catalog</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hidden Asset Types Resources / HiddenAssetTypes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software LicenseManager / Licenses</td>
<td></td>
</tr>
<tr>
<td>SOFTWARE INSTALLATIONS</td>
<td>Software Installations Catalog InventoriedSoftware / Catalog</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software LicenseManager / Licenses</td>
<td></td>
</tr>
<tr>
<td>SOFTWARE INSTALLATIONS CATALOG</td>
<td>Software Installations Installations / Library</td>
<td></td>
</tr>
<tr>
<td>HIDDEN ASSET TYPES</td>
<td>Manage Asset Types Resources / Manage</td>
<td></td>
</tr>
</tbody>
</table>
### KNOWLEDGE BASE VIEWS

Knowledge Base views, or KB views, are a type of Web views used to openly publish specific information about certain issues. KB views act like Read-Only views only they are accessible by everybody. They can be designed to give customers and/or users such information as:

- Solutions to known problems
- Project-related news
USING KNOWLEDGE BASE VIEWS

To use Knowledge Base views:

In your browser, type or paste the KB view URL given to you by your VIZOR administrator.

Type in a search word or phrase and click Go.

Find the article (issue) in the summary list.

Click an article in the summary list to open it and view its details.

To integrate a Knowledge Base view to your website:

Open the HTML file corresponding to the webpage in which you want the KB view link to appear.

At the proper location, type `<A href="URL">LINK TEXT</A>`, where URL is the address specified in the Web View Editor, and LINK TEXT is the text you want to appear as the link.

Browse to this webpage in your website and click on the new link to verify that it is functional.

CREATING AND UPDATING A KNOWLEDGE BASE VIEW

To create or update a Knowledge Base view:
Create a user account to be used as the KB view logon account (see Creating User Accounts).

Note:
The user specified in the Web View Editor must belong to a group who has access to the Ad-hoc Query feature.

Use the Web View Editor to create or update KB views (see Creating Web Views).

Set the proper username and password for the KB view account by clicking beside the View Type list.

Export to the view the desired fields to be displayed, including the Add To Knowledge Base field.

To change the list of articles (issues) published to a KB view:

Update the KB Query to filter the issues as desired (see About Queries).

To change the information (fields) displayed in a KB view's summary list:

Update the KB Layout to include the desired fields (see About Layouts).

Update the KB Sort to have the summary list ordered the desired way (see About Sorts).

THE ADD TO KNOWLEDGE BASE FIELD

Knowledge Base views use their Project's KB Query by default. This Query controls which articles (issues) are accessible through the KB view. The Add to Knowledge Base field helps define this Query and allows VIZOR analysts to easily specify if an issue is to be accessible as a KB article. By default, the KB Query returns all the issues where this field is set to either Internal or Public.

The Add to Knowledge Base field is found in the Resolution tab of the HelpDesk view by default. You will have to use the Web View Editor to export this field to other Web views if needed. Please note that this field must be exported to KB views when it is used in the KB Query; the Query will fail otherwise.

Typically, you will set this field to "No" to prevent the opened issue from being published in the KB view, and set it to anything else to have it published.
SELF-SERVICE VIEWS

Self-Service views are a type of Web view to be used by either internal or external VIZOR users to enter information and make minor changes to restricted records. For example, a Self-Service for HelpDesk tickets allows users to submit new tickets, be able to view and possibly edit the issues they have submitted. You can choose to allow them to edit certain fields in issues that they have submitted (for example, the Description field); or allow them to edit fields that were left empty when they submitted the issue; or simply view their submitted issues in a read-only format.

USING SELF-SERVICE VIEWS

To use Self-Service views:

Log on to the VIZOR Web views and select the HelpDesk / Employee view.

You will be able to create new issues and view any issues that you have submitted.

By default, you will be able to edit the Description and Attachments fields of the issues that you have submitted. You will be able to edit the Computer Name field of the issues that you have submitted if there is no value already entered.

CREATING AND UPDATING A SELF-SERVICE VIEW

To create or update a Self-Service view:

Use the Web View Editor to create or update Self-Service views. Please refer to the Generating Web Views section for further details on this procedure.

To ensure the logged in user will only see the issues they submitted:

Only export the My Reported Issues query to the Self-Service view.

To specify which fields the user should be able to edit after the issue has been saved:
Click beside the View Type box to open the Editable Fields dialog.

The fields that are exported to the Web view will be available in the list.

Select the fields that the user should be able to edit after their issue is saved (up to a maximum of 2 fields).

Click OK and generate your Web view.

To specify which fields the user should be able to edit if the field is empty:
The fields that are exported to the Web view will be available in the Help Desk/Employee view. The user will be able to edit only if the field is still empty (up to a maximum of 10 fields).

Select the fields that the user should be able to edit after their issue is saved, if the field is still empty (up to a maximum of 10 fields).

Click OK and generate your Web view.
EXODUSING FIELDS

To export fields:

1. In the shortcut bar, click Fields.

2. In the Tab list, click a tab (a tab is a group of related fields).

3. In the Available list, click a field and then click . This moves the field to the Export To View list, which lists the fields included in the Web view when it is generated.

4. Use and to change the order of the fields in the Export to View list. The order of the fields in the list determines the layout of the fields in the Web view.

NOTES

- Click to move all fields in the Available list to the Export To View list.

- Required fields are exported by default. You can remove the fields—just ignore the warning.

- The Field list in Ad-hoc Query editor lists exported fields only, plus the Issue field

- Layouts show only exported fields.
EXPORTING QUERIES

Queries control which issues a user can see in a Web view. For example, if **My Submitted Issues** is the only query available in a Web view, users can see only the issues they submitted.

To ensure that users cannot access any issues other than the ones found by the exported queries, you should hide the ad hoc query editor. The Ad-hoc Query editor allows users to see any issue (for example, by running a query like **Issue Number > 0**, which returns all issues).

In the **Queries** section, the **Available** box lists all the queries that you can export to the Web view. The **Export to View** box lists all the queries selected for export to the Web view.

**To export queries:**

1. In the shortcut bar, click **Queries**.
2. In the **Available** list, click a query.
3. Click to move the query from the **Available** box to **Export To View**.

**NOTES**

- To move all queries from **Available** to **Export To View**, click .

  - To make a query the default for the web view, click **Make Default**. This query will be automatically selected when a new user first logs in; however, their preferences will take precedence from that point on.

ADDING THE CHILD ISSUES TAB

Web views can have a **Child Issues** tab that allows users to link one or more child issues to a parent issue.

**To add the Child Issues tab:**
1. In the shortcut bar, click **Fields**.

2. In the **Tab** list, click **Child Issues**.

3. In the **Available** list, click the **Child Issues** field and then click ▶.

   The Child Issues field is a special grid control that allows users to build a list of child issues.

4. If you want to allow users to control whether child issues can have a different Status value than their parent, export the **Status controlled by parent** field (Details tab).

   By default, child issues have the same substate as their parent. Users can set Status controlled by parent to No to override this default behavior.

5. Regenerate the Web view.
EDITING FIELD ATTRIBUTES

The fields on a Web view are arranged in a two-column layout inside an HTML table. The order of the fields is determined by the order in which they are listed in the Export to View list.

The appearance and layout of the fields can be customized through field attributes, which control options such as alignment, width, and height.

To edit field attributes:

1. In the shortcut bar, click Fields.

2. In the Tab list, click a tab. In the Export to View list, click a field.

3. Click Attributes to open the Attribute editor.

   The Attribute editor displays the attributes for the selected field.

4. After you open the Attribute editor, you can edit the attributes for another field by clicking the field in the Field Name list.
USING FIELD VARIABLES

Field variables allow you to insert the name, value, or id of a field into an attribute. The field variables are particularly useful with the **Html code after control and URL** attributes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inserts</th>
</tr>
</thead>
<tbody>
<tr>
<td>%fieldvalue%</td>
<td>The current value of the field. For choice lists, %fieldvalue% is the ID of the choice.</td>
</tr>
<tr>
<td>%fieldname%</td>
<td>The name assigned to the input control (for example, cbo_18_cboPriority).</td>
</tr>
<tr>
<td>%fieldid%</td>
<td>The numeric ID of the field (this is the nID of the field in tblDtsFields).</td>
</tr>
</tbody>
</table>

ADDING POP-UP EDITORS

A Memo field such as the **Detailed Description** field has an Editor attribute that controls how the content of the field is edited.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;None&gt;</td>
<td>The Memo field is an editable text area in the Web view.</td>
</tr>
<tr>
<td>HTML</td>
<td>The contents of the Memo field are edited in a pop-up HTML editor.</td>
</tr>
<tr>
<td>Text</td>
<td>The contents of the Memo field are edited in a pop-up Text editor.</td>
</tr>
</tbody>
</table>
ALIGNING FIELDS

Alignment

Aligns a field (both the caption and the input control). Possible values are Left, Right, or Center. By default, all fields are left-aligned.

Vertical Alignment

Sets the vertical positioning of a field (both the caption and the input control). Possible values are: Top, Middle, and Bottom. The default is Top.

AUTOMATICALLY UPDATING CHOICE LISTS

Automatically Update List

If Yes, the choice list is updated each time a user logs on to the Web view. To turn on the automatic update of choice lists, you must regenerate the view.

If No, the choice list is updated only when the Web view is regenerated.

NOTES

Automatically updating a large number of choice lists may affect performance. You should automatically update only the choice lists that change frequently.
CHANGING FIELD CAPTIONS

The **Caption** attribute specifies a text label for a field. Note that reports and the **Field** list in the Ad-hoc Query editor still use the original field name, not the value of the **Caption** attribute.
SPANNING COLUMNS

FIELDS

Set Column Span to 1 to have the field span a single column, or 2 to have the field span the entire width of the page.

To make a field span 2 columns, you must also set the CSS Class to MemoFieldWidth. Use the SpanTwoWidthOne class if you want a field to span two columns but still be one column wide (that is, be alone on a line).

For example, in the default VIZOR Web view, the Priority field uses the SpanTwoWidthOne class. For example, in the default BugTrk / Customer view, the How Found field on the Detail tab uses the SpanTwoWidthOne class.

CAPTIONS

Set Caption Span to 1 to have the caption span a single column, or 2 to have the caption span the entire width of the page.

APPLYING CSS STYLES

CSS Class

Name of a style class defined in the cascading style sheet (CensusMain.css) used by the Web view. This class is applied to the controls (for example, the <input> form element for a text box). By default, fields use the classes ComboBoxWidth, MemoFieldWidth, and TextFieldWidth. These classes set the width and border of the control. ComboBoxWidth, and TextFieldWidth set the width to one column, and MemoFieldWidth sets the width to two columns.

The CSS Class attribute does not apply to read-only/disabled fields. These fields use the readOnlyStyle class.
DISPLAYING READ-ONLY FIELDS

You can display read-only fields as either text or as disabled controls.

**Read-only field displayed as text**

```
Contact: demo
```

**Read-only field displayed as a disabled control**

```
Contact: demo
```

In a read-only Web view, all fields are read-only. In normal and submit-only Web views, read-only fields are fields that have been disabled through the Field editor.

**To set the default for all read-only fields in the Web view:**

1. In the shortcut bar, click **Web View**.
2. Click **Attributes** to open the Web View Attributes dialog.
3. Set **Display All Read-Only Fields As Text** to **Yes** or **No**.

   By default, this setting applies to all read-only fields in the Web view.

**To override the default for a specific read-only field:**

1. In the shortcut bar, click **Fields**.
2. In the **Tab** list, click the tab that contains the field.
3. In the **Export to View** list, click the field and then click **Attributes**.
4. Change **Display Read-Only Field As Text** to **No** or **Yes**.

   When **Display Read-Only Field As Text** is set to **Default**, the field uses the value of the Web view attribute **Display All Read-Only Fields As Text**.

**NOTES**

- If you display a read-only memo field as a disabled control, the scroll bar is disabled, so the user may not be able to see everything in the field.
- You must regenerate the Web view after you change the Web view attribute or the field attribute.

**WIDTH**

Width in characters of a single-line text box, or width in pixels of a list box.

The CSS classes assigned to text boxes and list boxes override the **Width** attribute. These CSS classes (**TextBoxWidth** and **ComboBoxWidth**) specify the widths of the input controls.

**INSERTING CUSTOM HTML CODE**

**HTML code before/after control**

HTML inserted before and after the control in the generated HTML page. Must be a single line of text. For example, suppose you want to add a help icon that displays a tooltip.

```html
Priority: Today
```

A simple way to implement field-level tooltips is to put this HTML in the **HTML code after control** attribute:

```html
<img src="help.gif" title="Tooltip text goes here">
```

This inserts a help icon that displays a tooltip when a user points to the icon.

A more generic approach would be to write a javascript function in CustomCode.js that returns a string of HTML.

```javascript
function getHelpIcon ( tooltip ) {
    var str;
    str = '<img src="help.gif" title="' + tooltip + '">
    return str;
}
```

The **HTML code after control** would then call this function to get the HTML:

```html
<script type="text/javascript" language="javascript">document.write(

    parent.objCustomCode.getHelpIcon( 'Tooltip text')

);```

You must declare your function in CustomCode.js. Look for the public declarations at the bottom of the file, and add this line:

```javascript
this.getHelpIcon = getHelpIcon;
```

### NOTES

In the Html code before/after control attributes, you can use the string `%fieldname%` to refer to the name of the control. (The name of a control is the value of the name attribute on the form element.) For example, you could pass `%fieldname%` into the getHelpIcon() function, which would then return the help for that field.

### ADDING URL BUTTONS

URL buttons open a new browser window and load the document specified by the URL attribute. A URL button is associated with a field, and can use the field value as part of the URL.

For example, suppose you wanted to record the ID number of a Microsoft KB article that explains how to resolve a problem.

**MSKB Article:** 303928

To add a URL button that opens the specified KB article in a browser window, set the URL and URL Button CSS attributes as follows:

- **URL**: `http://support.microsoft.com/default.aspx?scid=kb;en-us;%fieldvalue%`
- **URL Button CSS**: `URLButton`

In the URL attribute, `%fieldvalue%` is a placeholder for the KB article ID number entered in the field.

If you omit the `http://` prefix from the URL, VIZOR automatically adds it when you generate the Web view.

The URL Button CSS attribute identifies the CSS classes used for the button. VIZOR includes several different URL button classes you can use:
URL buttons always open a new browser window, even when you specify a URL like mailto:xsupport@company.com.
TEXT BOXES

**Number of Characters**

Maximum number of characters per line in the text box.

MULTI-CHOICE LISTS

**Number of Visible Items**

Number of items visible in a multi-choice list. Users can always see items that are outside the visible window by scrolling the list box.

**Show Selected Items In Text**

![Example multi-choice list]

Shows a comma-separated list of the selected items in a text box above the multi-choice list. This helps users see what items are selected.

**Show Selected Items In Tooltip**

Shows a comma-separated list of the selected items in a tooltip. This helps users see what items are selected in a multi-choice list.

![Example multi-choice list with selected items]

CONFIGURING CHOICE LISTS
The tblUser table can contain a large range of entries. For example, a big organization can have several thousand users and contacts, whereas a smaller organization may have only a few tens of entries. Use the Select from dialog attribute to specify the method which support staff can use to make a selection from single- or multi-choice lists populated from the tblUser table.

**To specify the type of choice list control you want to use:**

1. In the Web View Editor, select the Web View that contains the fields you want to work with.
2. Select **Fields** in the shortcut bar.
3. Select a field you want to customize, and click the **Attributes** button. For example, to select the control type for the **Contact** field in the Console's **Overview** tab, select **Contact**.
4. Choose a control option:

   - **To display the data in a search dialog, click the Select from dialog attribute and click Yes.** A browse button is displayed alongside the field to enable users to open the Search dialog. (Select from dialog = Yes is used by default.)

   - **To display the data in a drop-down list, click the Select from drop-down list attribute and click No.**

   We recommend you select the **No** option only when the field can contain fewer than 100 entries as it can take several minutes to populate a large drop-down list.

5. Click **Close** to save your changes.

---

**LINKING USER DETAILS**

When dealing with issues, support staff often need to request more information from users or ask them to perform checks on their computers. To help support staff contact users, you can configure VIZOR to make user details available through a dialog linked to the **User**, **Contact** or **Company** fields.

**To link to user details:**

1. In the Web View Editor, select the Web View that contains the fields you want to work with.
2. Select **Fields** in the shortcut bar.
3. Select **User** and click the **Attributes** button.
4. Click the **Link to user details** attribute and click **Yes**.
5. Click **Close** to save your changes.
The contents of the field are underlined when users mouse over it in the Web View. This indicates a link to the contact details of the selected person.

HIDING FIELDS

Setting Visible to No hides the field in the Web view. The field is still included in reports and listed in the Field list of the Ad-hoc Query editor.

POINTING USERS TO WEB VIEWS

The URLs for a normal or read-only Web view are displayed in the Web View Editor. The VIZOR Logon URL is for users with VIZOR users accounts. The Windows Integrated Logon URL is for users whose Windows user accounts have been imported into VIZOR.

The default page at the URL is logon.asp.

For Submit-only and Knowledge Base views, you have to add the logon.asp file name and a query string to the URL displayed in the Web View Editor. For example:

http://server/census/logon.asp?View=BugTrk%2FKB

The query string (the part after the question mark) specifies the project and view:

View= <project>%2F<view>

%2F is the escape sequence for a forward slash (/). Spaces in the view name are replaced with the escape sequence %20.
CHANGING URLS AND DIRECTORIES

A Web view is accessed through a URL like //server/vit, where server is the name of the Web server computer, and vit is the name of a virtual directory.

On a Web site hosted by Microsoft Internet Information Services (IIS), a virtual directory is an alias (a short, descriptive name) that is mapped to a directory on the Web server.

The Web View Editor includes a Web View wizard to help you:

- Change the URL (for example, change //nan/vit to //nan/CallTracking) by changing the virtual directory. Change the URL (for example, change //nan/BugTrk to //nan/bugs) by changing the virtual directory.
- Change the directory where the Web view is published.

There are two ways to change the URL. You can create a new virtual directory, or you can use an existing virtual directory.

To change the URL by creating a new virtual directory:

1 In the shortcut bar, click URL.

2 Click to open the Web View Wizard and then click Next.

3 Click Advanced, click Create a new URL and a new Directory, and then click Next.

4 Type the name of your Web server and click Next.

5 In the Web Site list, click the Web site where you want to create the virtual directory.

6 In the Virtual Directory box, type the name of the new virtual directory.

7 In the Path box, select the directory where you want to put the generated Web view files.

8 If you need to change the user account used for anonymous access to the virtual directory, select the Show advanced options check box.

9 Click Next and then click Finish.

To change the URL by using a different virtual directory:

1 In the shortcut bar, click URL.
2 Click 
 to open the Web View Wizard and then click Next.

3 Click **Use existing URL** and click Next.

4 In the **Web Site** list, click the Web site that contains the virtual directory you want to use.

5 In the **Virtual Directory** list, click the virtual directory you want to use.

   By default, the Virtual Directory list contains only the virtual directories used by VIZOR Web views. To show all the available virtual directories, select the Show all virtual directories from IIS check box.

6 Click Next and then click Finish.

To change the directory:

1 In the shortcut bar, click URL 🌐.

2 Click 
 to open the Web View Wizard and then click Next.

3 Click **Advanced**, click Update existing virtual directory, and then click Next.

4 Click Next and then click Next again.

   This assumes you want to change just the directory, not the Web server, Web site, or virtual directory.

5 In the **Path** box, select the new directory where you want to put the generated Web view files.

6 If you need to change the user account used for anonymous access to the virtual directory, select the **Show advanced options** check box.

7 Click Next and then click Finish.
CHANGING THE WINDOWS ACCOUNT

VIZOR needs a Windows domain account to use for:

- Anonymous access to the virtual directories on the Web server.

  Anonymous access is required to run any Web view or VIZOR Web Admin, which are all stored in virtual directories on the Web server.

- Access to VIZOR databases in a distributed configuration, where the databases are not on the Web server.

- Access to attachments, which may be stored on a different computer than the Web server.

- Access to Vector Asset Management site databases

By default, VIZOR uses the CensusUser account, which is created when you install VIZOR. The default password for the CensusUser account is nd5kvmWJ.

The CensusUser account is a Windows domain account.

NOTES

If you change the password for the CensusUser account, or delete the user account and use another one, you must update the virtual directories in the Internet Service Manager (Windows) or Internet Services Manager (Windows 2003, 2000, XP).

To change the Windows account used for anonymous access to a virtual directory:

1. Open the Web View editor. In the shortcut bar, click URL 🌐.

2. Click ⌁ to open the Web View Wizard and then click Next.

3. Click Advanced, click Update existing virtual directory, and click Next.

4. Click Next until you get to the Virtual Directory Properties dialog.

5. Select the Show Advanced Options check box.
6 In the **User Name** box, enter the name of the user account.

   **Click Browse to locate a domain user account.**

7 In the **Password** box, type the user account password.

You can also use VIZOR Admin to change the Windows account.

**To change the Windows account used by VIZOR:**

1 Open VIZOR Admin.

2 On the **Tools** menu, click **Windows Account**.

3 Enter the name and password of the domain user account you want to use.

This user account is used for anonymous access by all subsequent Web views you generate.

---

**NOTES**

When you change the user account used for anonymous access with the Web View Editor or VIZOR Web Admin (Notifications tab), all required permissions and rights are automatically set.

---

**SETTING DEFAULT VALUES FOR A WEB VIEW BASED ON USERS OR GROUPS**

**To set default values for a Web view:**

1 Log on to the Web view.

2 In the Web view toolbar, click **Defaults**.

3 In the Default Values dialog, set the field values you want to use as defaults for new issues.

4 Click **Apply**.

**This creates a file named MqDefaultValues.js in the folder**

CensusWebVD\<project>\_<view>\Users\<logon-name>

where **<logon-name>** is the name you used to log on to the Web view.

5 Copy the file
\CensusWebVD\<project>_\<view>\Users\<logon-name>\MqDefaultValues.js to
\CensusWebVD\<project>_\<view>\Users\MqDefaultValues.js

The folder Users\Users applies to all users that log on to the Web view.

6 Copy Users\MqDefaultValues.js to the CustomizedFiles folder.

For example, if you want the default values to apply to all Web views of the HelpDesk project, copy MqDefaultValues.js to:

CUSTOMIZEDFILES\#Project#HelpDesk\#AllWebViews#\Users\Users

If you want the default values to apply only to the HelpDesk_HelpDesk view, copy MqDefaultValues.js to:

CUSTOMIZEDFILES\#Project#HelpDesk\#WebView#HelpDesk_HelpDesk\Users\Users

**NOTES**

- Users can override these default values by setting their own defaults.

- You can remove the **Defaults** button from Web views by disabling the Default Value Editor feature.
CHAPTER 34 - TEMPLATES AND THE CUSTOMIZEDFILES FOLDER

The files that make up a Web view (such as .JS, .CSS, .HTML, and .ASP files) are generated from templates. If you edit the original templates, your customizations apply to all Web views. In addition, if you edit the generated files for a Web view, you must reapply your changes every time you generate the view.

To customize specific Web views without editing the generated files, you put your customized files in a special CustomizedFiles folder. Each time you generate the view, the Web View Editor copies your customized files from the CustomizedFiles folder into the view.

HOW ARE THE FILES IN THE CUSTOMIZEDFILES FOLDER TEMPLATE USED?

1. CustomizedFiles will only contain files modified by the customer.
   - In 2.3.2.306, it has default old files. These files should not be removed.

2. SPTemplates contains special template files that are part of VIZOR. Like the Templates folder, these are installed by the Setup program and should not be modified directly.

3. All files in Templates are copied to the root of the runtime folder first (CensusWebVD).
4. All files in the SPTemplates are copied after, ALWAYS replacing any file in the runtime folder and following the template folders wildcards rules.
5. Files in the CustomizedFiles are copied after, replacing any file in the runtime folder ONLY if the version in CustomizedFiles is newer. The process also follows the template folders wildcards rules.
6. All files in the Logos folder of CustomizedFiles are copied to the runtime folder.
The source folder is: ".\CustomizedFiles\#AllProjects#\Theme\images\logos"

CHECKING CUSTOMIZATIONS BEFORE UPDATING TO A NEW VERSION

If you have made customizations by adding files to the CustomizedFiles folder, they need to be reviewed before updating VIZOR to a new version to check if the customization needs to be updated to be compatible with the new version or discarded.

To determine if there are customized files, search in the CustomizedFiles folder and look for any file modified/updated more recently than 1-jan-2019.

We can ignore all the files older than this date.

If there are files in that folder modified after this date, report and consult with our Technical Services before updating the VIZOR server.

WHAT HAPPENS AFTER AN UPGRADE OF VIZOR?

After an upgrade, it is likely that old CustomizedFiles will not be copied to the runtime folder and therefore not be ‘active’.

This is by design. With the exception of logos, files in CustomizedFiles need to be analyzed and make compatible with the new version explicitly.

The new version of the file needs to have a more recent modified date than the file it is replacing, once it has been tested for compatibility.

Often customizations can be discarded if they have been incorporated into the product. The customized file needs to be checked by an expert of VIZOR to determine if the customization has been incorporated and, if not, to modify the old customization to be compatible with the new version. By default old customized files are not used by VIZOR.
CUSTOMIZING WEB VIEW FILES

To customize Web view files:

1. In the `<ConnectServer>\CensusWeb` folder, create a `CustomizedFiles` folder. `<ConnectServer>` represents the folder where your VIZOR Server is installed.

2. In the `CustomizedFiles` folder, create a folder structure to hold the customized files.

   To customize files for all Web views of all projects, create this folder structure:

   ```
   CustomizedFiles
   \#AllProjects#
   \#AllWebViews#
   ```

   To customize files for all Web views of a specific project, create a folder structure like this:

   ```
   CustomizedFiles
   \#Project#HelpDesk
   \#AllWebViews#
   ```

   and replace `connect` with the name of the project.

   To customize files for all Web views accessed through a given URL, create a folder structure like this:

   ```
   CustomizedFiles
   CensusWeb
   \#AllWebViews#
   ```

   and replace `CensusWeb` with the last part of the URL. (For example, if the actual URL is `http://SERVER/connect`, replace `CensusWeb` with `VIZOR`).

   Use this approach if you generate Web views outside the `ConnectServer` folder.

3. Copy the files you want to customize from the view into the `CustomizedFiles` folder.

   You must recreate the same folder structure. For example, if you want to customize files in the HTML, JS, and Reports folders of Web views of the VIZOR project, you must create this folder structure:
CUSTOMIZING SHARED WEB VIEW FILES

You can also customize the files that are shared by Web views accessed through the same URL. These are the files found in the CensusWebVD folder, such as logon.asp.

To customize the files in CensusWebVD for all Web views:

Put the files in the folder

CustomizedFiles\#AllProjects#

-or-

CustomizedFiles\<virtual directory>

To customize files for all Web views accessed through a given URL:

Put the files in the folder

CustomizedFiles\<virtual directory>

For example, if the URL is //server/vit, then put the customized files in a folder named CustomizedFiles\vit.

Use this approach if you generate Web views outside of the ConnectServer folder.
To override the customizations in #AllWebViews# for a given Web view, you can create a #WebView#<project>_<view> folder. For example:

```text
CustomizedFiles
  #AllProjects#
    #AllWebViews#
    #WebView#HelpDesk_HelpDesk
```

The files in #WebView#VIZOR_VIZOR override all #AllWebViews# customizations.

You can create a #WebView#<project>_<web view> folder in any of the three customization folders (#AllProjects#, #Project#<project>, and CensusWeb).

---

CUSTOMIZING THE WEB VIEW INTERFACE

You can customize most of the HTML and ASP pages that make up a Web view. If you edit the templates, make sure to backup the original files before you begin your customization.

---

CENSUSMAIN.CSS

Style sheet for a Web view. The `normalfield`, `requiredfield`, and `disabledfield` classes define the appearance of the fields.

---

TMPLCENSUSMAIN.HTM

Defines the frame structure for the frames that make up the Web view page. You can change the size and position of each frame, add and remove scrollbars, and set the frame border size.

---

TMPLTOOLBAR.HTM

Defines the Web view toolbar.
TMPLSUMMARYLIST.HTM
Defines the Summary List. **You cannot customize this page.**

TMPLSQE.HTM
Defines the Ad-hoc Query Editor.

TABS.ASP
Defines the layout of the tab navigation buttons.

TMPLCMDBAR.HTM
Contains the navigation controls.

When editing these files, do not change references to file names, the `<WC@ ... >` tags, or any of the Javascript code.
OVERVIEW OF SECURITY TOPICS

There are several topics around security in VIZOR.

For example,

- Security and access control to authorized data in VIZOR
- Security and access control to authorized features in VIZOR
- Authentication to log in to VIZOR
- Secured sessions while using the VIZOR application
- Security and access control to external resources using VIZOR

VIZOR has many security controls in place to allow only authorized staff and users to view, open, modify, authorize and in general work with data based on their role.

VIZOR security enables managing user access to data (assets, purchases, incidents, etc.) and features (be able to add a new asset, delete an asset, etc.).

VIZOR's security is based on the user groups.

Users can be created within VIZOR or imported/synchronized with an external system, such as Active Directory. When the users originate in an external system, you can also define what VIZOR group the members of an external group are imported into in VIZOR.
Each user is a member of one or more groups. Access to VIZOR features and projects is based on group membership. You can enable and disable features and projects on a group-by-group basis. A user can only access a feature or project if the user is a member of a group where the feature or project is enabled.

To control access to VIZOR features, you assign users to the groups based on their roles and responsibilities in the process. For example, a help desk group leader or analyst who is also responsible for administering VIZOR must be a member of the **Admins** group.

### SECURITY AND ACCESS CONTROL TO AUTHORIZED DATA IN VIZOR

Use the Web View Editor to set the group access permissions that control who can log on to the Web views of a VIZOR project.

### CONTROLLING ACCESS AND SECURITY OF A FIELD

VIZOR has multiple ways to control access to your data. Since data is mostly stored in fields, controlling access and security of a field is paramount.

Methods to control access and security of a field:
- Visible or Hidden, in the Field Editor
- Disabled or Read-only, in the Field Editor
- Read-only for specific user groups, in the Field Editor
- Visible or Hidden per Web View, in the Web View Editor
- Read-only per Web View, in the Web View Editor
- Visible or Hidden under custom conditions, using the Business Rule Workflow Editor
- Read-only under custom conditions, using the Business Rule Workflow Editor
- Create custom macros using scripting programming language to reflect unique or complex conditions.
- Because access to Web views can be controlled per user group, and you can create any number of Web views, you can combine all these to defined essentially any possible security, access or authorization situation.

### SECURITY AND ACCESS CONTROL TO AUTHORIZED FEATURES IN VIZOR
The main mechanism to authorize users to use features in VIZOR is via the VIZOR Features. Features allow users to create new assets or delete assets, for example.

The following is an example of all the features that a user can be granted access/authorization to:
In VIZOR, access to the information is usually via the Web UI.

VIZOR user accounts always belong to one or multiple User Groups, which give them different profiles or security roles. VIZOR Accounts can also be integrated with Windows AD domain accounts, individually per user or via mapping AD Security Groups or OUs to VIZOR User Groups.

This architecture gives powerful and comprehensive control on access to the data to different users. VIZOR can be configured to limit access to individual users to specific computers or groups of computers, specific fields per device, the ability to make certain changes to the device information, etc.

By default, VIZOR includes the following user Groups (you can think of them as roles):

<table>
<thead>
<tr>
<th>User Group</th>
<th>Access to Views</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Software Managers</strong></td>
<td>Software Licenses</td>
</tr>
<tr>
<td></td>
<td>Agreements &amp; Purchases</td>
</tr>
<tr>
<td></td>
<td>Employees</td>
</tr>
<tr>
<td></td>
<td>My Actions</td>
</tr>
<tr>
<td><strong>IT Asset Managers</strong></td>
<td>Assets</td>
</tr>
<tr>
<td></td>
<td>Employees</td>
</tr>
<tr>
<td></td>
<td>Locations</td>
</tr>
<tr>
<td></td>
<td>Agreements &amp; Purchases</td>
</tr>
<tr>
<td></td>
<td>My Actions</td>
</tr>
<tr>
<td></td>
<td>Roles &amp; Policies</td>
</tr>
<tr>
<td><strong>IT Managers</strong></td>
<td>Assets</td>
</tr>
<tr>
<td></td>
<td>Software Licenses</td>
</tr>
<tr>
<td></td>
<td>Employees</td>
</tr>
<tr>
<td>Role</td>
<td>Tasks</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Locations</td>
<td></td>
</tr>
<tr>
<td>Agreements &amp; Purchases</td>
<td></td>
</tr>
<tr>
<td>My Actions</td>
<td></td>
</tr>
<tr>
<td>Roles &amp; Policies</td>
<td></td>
</tr>
<tr>
<td>Approve Change Requests</td>
<td></td>
</tr>
<tr>
<td>Help Desk Incidents</td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>Request Assets</td>
</tr>
<tr>
<td></td>
<td>Search KB</td>
</tr>
<tr>
<td></td>
<td>Submit a HelpDesk Ticket</td>
</tr>
<tr>
<td>Helpdesk Analyst</td>
<td>Help Desk Incidents &amp; Problems</td>
</tr>
<tr>
<td></td>
<td>Change Requests</td>
</tr>
<tr>
<td></td>
<td>Search KB</td>
</tr>
<tr>
<td>HR Manager</td>
<td>New Employee Onboard</td>
</tr>
<tr>
<td></td>
<td>Batch Onboard</td>
</tr>
<tr>
<td></td>
<td>Terminate Employees</td>
</tr>
<tr>
<td></td>
<td>Employees</td>
</tr>
<tr>
<td></td>
<td>Locations</td>
</tr>
<tr>
<td></td>
<td>Roles &amp; Policies</td>
</tr>
<tr>
<td>Release Manager</td>
<td>Release Management</td>
</tr>
</tbody>
</table>
AUTHENTICATION TO LOG IN TO VIZOR

Users can log into VIZOR using accounts from the following authentication types:

- Vizor user accounts.
- Active Directory user accounts.
- Azure / Microsoft user accounts.
- Windows user accounts.

For the last 3, your users can authenticate using SSO (Single-Sign On), that is, your users never need to log on to VIZOR with their Windows or Network/Active Directory accounts again if the Web browser or Windows is already logged in.
SECURED SESSIONS WHILE USING THE VIZOR APPLICATION

VIZOR sessions via the browser communicate to the Web Server using the HTTP/HTTPS protocol.

By default, HTTPS is used and recommended, which ensures communication between the VIZOR Web and the server is secure and encrypted.

SECURITY AND ACCESS CONTROL TO EXTERNAL RESOURCES USING VIZOR

You can control access and authorization of users to a 3rd party, external system via the Request Portal and custom VIZOR Actions. These VIZOR Actions interact with the external system and grant or remove access to features depending on the configuration.

ACTIVE DIRECTORY ACTIONS

VIZOR can also control security aspects of your network or external systems via the AD connector. The following actions can be automated via the native AD adapter.

- Add user to Security Group
- Assign user to OU
- Change user password
- Create user account
- Delete user account
- Disable user account
- Enable user account
- Remove user from Security Group
- Reset user password
SECURITY IN VECTOR DISCOVERY

This section only applies to customers using the Vector Discovery, not when integrating with Microsoft ECM, LanSweeper, SolarWinds, etc.

The Vector Discovery Server (a.k.a. Vector Asset Manager) communicates with regular Vector Discovery Clients using the HTTP protocol. The server uses IIS for both receiving and sending requests to and from the client.

IP PORTS

By default, this communication occurs over port 443 (for https) but it can be configured to use any port designated by the organization.

SERVER-SIDE PROCESS

Once the information is sent to the server (offline or caching area), the data is parsed and converted into information that is then added to the SQL Server database. This process is performed by the Vector Scheduler Windows Service, which runs under a Windows account designated during installation, which must have read/write permissions to the Offline Area, and SQL access to the database.

CLIENT DEPLOYMENT

Administrator privileges are required to install the Vector Client.

Vector provides tools to push the client to be installed remotely, however, a number of security conditions need to be met in order for this to be successful (Admin$ share, local administrative permissions for the client push installer account, etc.).
For most environments, those where computers belong to an AD domain, Group Policy client installation and software update-based client installation methods offer a secure and simple method of installation.

Including the Vector Client as part of the Computer OS image is also a secure way, provided you have access controls on the person who performs the installation/deployment of the OS.

**WINDOWS ACCOUNT ON CLIENTS**

By default, the Vector Discovery Client runs as a Windows Service. The service is called Vector Asset Management Agent and it is run using the Local System account by default. No additional Windows User Account is needed; however, it is possible to run the service with a different Windows user, ostensibly created solely for the Vector Discovery function. Keep in mind that if the user is changed, the user must have elevated privileges, and essentially be a local administrator, plus it needs to be valid in the computers where the client runs and a domain user account may not be valid for computers outside the LAN.

**INTERNET - DEPLOYMENT OUTSIDE THE ORGANIZATION’S NETWORK**

The Vector Discovery Client can be installed on a computer outside the organization’s LAN or WAN. If your VIZOR is in the Cloud and/or hosted by Vector Networks, then all your computers are in this case.

When the Vector Discovery Client is outside the network, the client communicates with the server(s) via the Internet.

In this environment, it is highly recommended to protect the Vector Discovery (a.k.a. Vector Asset Manager) Server behind a firewall and use TSL/SSL (https protocol) for the communication between the client and the server. The server can be in a DMZ network or the LAN.

The firewall should be configured to use the designated port (80, 443, etc.) and it can be restricted to permit only inbound connections started from the outside.

For increased security when exchanging information between the client and server, an encrypted security key is used which is unique to the site, and can be modified by the server.
In addition, you can also use public key infrastructure certificates for client communications. In this case, the IIS where the Vector server runs must be configured for HTTPS only and deploy the certificates to the clients. It is also possible to add SHA-256 signature or fingerprint.
CHANGING THE DATE AND TIME FORMATS FOR WEB VIEWS

The format of the dates and times entered and displayed in a Web view are controlled by the Regional Settings of the Web server, not the Regional Settings of the local computer.

Web views use the short date format.

SETTING UP THE CURRENCY

Among the general languages or cultures supported by VIZOR, it may be needed to change some regional settings, like for the currency.

If the server uses the same currency settings as the VIZOR default resources, there is no need to change any setting in VIZOR.

For example, the culture for English in VIZOR is “en-US”, which uses “$” as the currency symbol. If VIZOR will be running in the UK and not using the dollar for currency, the Windows server, the SQL Server and the VIZOR resources need to be changed to use “£”.

To facilitate this, you can just copy the file located in:

\ConnectServer\CensusWeb\Templates\Project\localization\optional\uk\ResourcesCust.e
n-US.js

And copy it to the customized files:

\ConnectServer\CensusWeb\CustomizedFiles\#AllProjects#\Localization\en-US\n
Then generate fully one web view (this files is shared among all Web views). Users may need to clear the cache of the Web browser to see the changes.
ADMINISTERING VIZOR ON THE WEB

VIZOR Web Admin is a Web-based administration tool that allows you to:

- Add and edit users and contacts.
- Define workflow rules.
- Create new tabs.
- Set up choice fields.
- Enable e-mail notifications.
- Migrate projects to SQL Server and move projects to different SQL Server computers.
- Move attachments to a different computer.
- Integrate InventoryLink VSS databases to VIZOR projects.

LOGGING ON

You can log on to VIZOR Web Admin directly from the Web View Editor, using the same logon account you used for the Web View Editor.

To log on to VIZOR Web Admin

Do one of the following:

- In your Web browser, go to //server/vitadmin, where server is the name of your Web server.
- In VIZOR Admin, click Tools > Web > Web Admin.
• At the Web server, click **Start > Programs > Vector > VIZOR > Vizor Web Admin**

• In the Web View editor, click **Admin** and then click **Log On**.

---

**GENERATING VIZOR WEB ADMIN**

When you install the VIZOR Web Server, the setup program generates a copy of VIZOR Web Admin. If necessary, you can generate another copy of VIZOR Web Admin. For example, you may want to change the URL used to access VIZOR Web Admin.

**To generate VIZOR Web Admin:**

1. In the Web View editor, click **Admin**.

2. If required, change the URL and directory for VIZOR Web Admin.

3. Click **OK**.

---

**WINDOWS PERMISSIONS**

When you log on to VIZOR Web Admin, it uses your Windows credentials to run tasks if you are a member of the CensusAdminsGroup group or the local Administrators group on the VIZOR Server computer. Otherwise, VIZOR Web Admin runs tasks as CensusUser.

Members of the CensusAdminsGroup group (or of the local Administrators group on the VIZOR Server computer) have the required permissions to perform any task with VIZOR Web Admin. The CensusUser account, on the other hand, cannot perform IIS-related tasks such as unloading virtual directories (when logging off users), and may not be able to relocate databases to other computers.

During installation, the Setup program creates the CensusAdminsGroup group and adds all members of the domain Administrators group to the CensusAdminsGroup group. Setup also adds the CensusAdminsGroup to the local Administrators group on the VIZOR Server computer. The purpose of the CensusAdminsGroup is to control access to Web Admin.

---

**CONTROLLING THE FREQUENCY OF SERVICE TASKS**
Settings for controlling the intervals of tasks executed from the Windows Service Mq Issue Agent:

**EXECUTE ACTIONS INTERVAL (ID 14)**

How often to execute Actions of type Provisioning and Deprovisioning. The value is in minutes. A negative value will turn off the task.

**CALCULATE LICENCES INTERVAL (ID 15)**

How often to calculate software licenses and compliance, based on software assets, installations and entitlements. The value is in minutes. A negative value will turn off the task.

**SEND EMAILS INTERVAL (ID 214)**

How often to send emails from the internal outgoing emails queue. The value is in seconds. A negative value will turn off the task.

**ASSETS VERIFICATION INTERVAL (ID 455)**

Verify and create assets from purchases. Evaluate software licenses and compliance. The value is in minutes. A negative value will turn off the task.

**EVALUATE NOTIFICATIONS INTERVAL (ID 202)**
How often to evaluate notifications in the different projects. The value is in minutes. A negative value will turn off the task.

RELOCATING DATABASES TO SQL SERVER

VIZOR uses Microsoft SQL Server as the primary database backend. In addition, you can also run all or some databases in Jet/MSAccess.

You can relocate (migrate) databases from Jet/MSAccess to SQL Server, or from one SQL Server to another.

There are two types of databases you can relocate:

- Global databases are the databases shared by all projects: the users database (users.mdb), the Web views database (censusweb.mdb), and the licenses databases (licenses.mdb).
- Project databases contain issues and project definitions (such as the definitions of fields, queries, and reports).

To relocate databases to SQL Server:

1 Log on to VIZOR Web Admin:
   - In VIZOR Admin, click Tools > Relocate > Databases to log on to VIZOR Web Admin, where you can use the Relocation tab to relocate databases to SQL Server.
   - In your Web browser, go to //server/vitadmin, where server is the name of your Web server.

2 On the Relocation tab, under Databases to relocate, select the databases you want to relocate.

3 In the Relocate databases to this SQL Server list, click the computer to which you want to relocate the databases. In the Relocate databases to this SQL Server list, click the Web server computer. MSDE 2000 databases must be on the same computer as VIZOR.

   To relocate to a SQL Server instance, click Add a SQL Server to this list and then type the instance name using the syntax <computer name>\<instance name>.

4 In the New location for database files box, enter the name of a folder on the Server where the database files (*.mdf, *.ldf) can be stored.

   The new location must be the path as seen from the Web server. If the SQL Server is in a different computer, enter a UNC, otherwise, enter a local path.
5 Click **Apply** to relocate the databases.

6 During the relocation, you may be prompted for the password for the **sa** SQL Server login account. VIZOR needs the password so it can initialize the SQL Server.

7 After the databases are relocated, regenerate your Web views.

**If you relocated the global databases, regenerate all Web views. If you relocated project databases, regenerate the Web views of the relocated projects.**

---

**NOTES**

- We recommend that all databases be stored on the same SQL Server computer. This improves performance by reducing the amount of data sent over the network.

- When relocating databases from one SQL Server to another, the locations of the physical data files (.mdf,.ldf) on both the source and target computers must be accessible from the Web server. Also, the user running VIZOR Web Admin must have full permission to move and create files on the locations.

- Relocating databases logs off users and prevent users from logging on, so choose a time when there is little or no activity on VIZOR.

- When you relocate a database to SQL Server, VIZOR creates a SQL Server database with one data file and one log file. After the database is created and is accessible in SQL Server, database administrators can add more files or configure the database as required.

- VIZOR creates a SQL Server login account named **censusapplication**, which is used to connect to the SQL Server.

---

**TROUBLESHOOTING RELOCATIONS**

If VIZOR Web Admin cannot contact or initialize the SQL Server during relocation:
- Check the SQL Server is running.

- Check the SQL Server is configured to use SQL Server and Windows authentication (Mixed Mode authentication).

- Verify that the SQL Server login account \texttt{sa} exists, is not disabled, and has permissions to log into the master database in the SQL Server. \texttt{sa} must be system administrator in SQL Server.

- Stop any antivirus software that is running on the SQL Server computer or the Web server computer.

- Verify that the VIZOR Web Server computer and the SQL Server computer can communicate through the network (for example, use Ping to test connectivity).

- Try using the IP address instead of the computer name to identify the SQL Server computer.

- To relocate to a SQL Server instance, click \texttt{Add a SQL Server to this list} and then type the instance name using the syntax <computer name><instance name>.

- Verify that both the SQL Server and the Web server are using the same protocol (by default, TCP/IP). To do this, use the SQL Server Server Network Utility on the SQL Server computer, and the SQL Server Client Network Utility on the Web server.
RELOCATING ATTACHMENTS

When users upload attachments, the attachments are stored on the Web server. For example, the files attached to issue #3 in the VIZOR project are stored in the folder 

ConnectServer\vit\Data\Attachments

For security purposes, you may want to move the attachments to a separate file server.

To relocate attachments:

1 In VIZOR Admin, click Tools > Relocate > Attachments. 
   This logs you on to VIZOR Web Admin, where you can use the Relocation tab to move (relocate) attachments.

2 In VIZOR Web Admin, click the Relocation tab and then click Relocate Attachments.

3 Under Relocate the attachments for these projects, select the projects whose attachments you want to move.

4 In the New location for attachments box, type or paste the name of an existing folder on another computer.
   - The Windows account (by default, CensusUser) must have (full) permissions on the new location.
   - The new location must be a UNC path (for example, \sharename\Attachments) that the Web server can access.
   - The new location is the root folder where VIZOR creates folders to store the attachments. For example, if the new location is
     //fileserver/vitWeb
     then attachments to the VIZOR project are stored in
     //fileserver/VIZORWeb/vit/Data/Attachments
     If you created your own attachment field, then attachments are stored in
     //fileserver/vitWeb/vit/Data/<fieldname>

5 Click Apply to relocate the attachments.

6 After the attachments are relocated, regenerate the Web views of the projects whose attachments were relocated.
Relocating attachments logs off users and prevent them from logging on, so choose a time when there is little or no activity on VIZOR.
DELETING ISSUES, ASSETS AND OTHER RECORDS

VIZOR allows authorized users to delete issues (helpdesk tickets), assets, software records, purchases, service requests or any other record from the database.

You can delete them from two locations - the web views, and VIZOR Admin.

To delete individual records in VIZOR (issues, helpdesk tickets, assets, software, etc.) from the web view, users need to be part of a group that has been given access to the feature. For more information about granting access to features, see Defining User Groups.

To delete a range of issues in one operation, users must have access to VIZOR Admin. Both approaches come with the ability to recycle issue numbers, allowing them to be repurposed for future records.

Unless your organization has a specific requirement to recycle the IDs for tickets, assets or purchases, you probably do not need to recycle them.

TO DELETE RECORDS FROM WITHIN THE WEB VIEWS:

1. In the VIZOR view locate the record you wish to delete in the summary list. You need to select a query that includes that record.

2. In the summary list, click on the icon to Delete.

3. Depending on the project, you may have the option to reuse the record number for a future ID.
TO DELETE RECORDS USING VIZOR ADMIN:

1. In VIZOR Admin, click **Delete** on the **Project** menu.
2. In the Issues to delete box, type the numbers you want to delete.

You can type a specific issue number, a comma-separated list of issue numbers (for example: 1, 5, 7), or a range (for example, 1-25). When specifying a range, both the start and the end numbers of the range would be deleted.

3. If you want to reuse the issue numbers of deleted issues, select the **Recycle Issue Numbers** check box.

Recycled issue numbers are assigned to new issues.

DELETING MANY RECORDS

You can delete multiple records quickly by setting the field "To_Be_Deleted" to 1.

This can be done using a sql statement.

Records with this value set to 1 will be delete by a backend process. In particular, this is done from the "Mq Issue Agent" service, in every cycle of the evaluation of notifications.
LOGONS EDITOR

VIZOR Admin includes a Logons editor (on the Tools menu) that lists all users logged on to Web views, VIZOR Admin, VIZOR Web Admin, and the Web View Editor.

The Logons editor displays the following information for each logon session:

**Name**
Logon name of the user.

**Date/Time**
Date and time that the user logged on.

**Workstation**
The user’s IP address or computer name.

**Project**
If the user is logged on to a Web view, the name of the project is displayed.

**Virtual Directory**
If the user is logged on to a Web view, the virtual directory is displayed. The virtual directory is the final part of the URL used to access the Web view. For example, if the virtual directory is named vit, then the URL is http://server/vit. You can use the Web View Editor to determine which views are at the specified URL.

Virtual directories such as connect00, connect01, and connect02 are all accessed through the //server/vit URL.

**Application**
The component you want to work with. For example: Web View, Web View Editor, Admin, or Web Admin.
LOGGING OFF USERS

To log off a specific user:

1. On the Tools menu, click Logons Editor.
2. In the list of users, click a user.
3. Click Log Off.

To log off all users:

1. On the Tools menu, click Logons Editor.
2. Click Log Off All.

Before logging off a user, a Web view displays a message telling the user that VIZOR is shutting down. You can give users a bit more time by sending an immediate message. To do this, set the Send immediate shutdown message project option to Yes.
SETTING THE MONITOR INTERVAL

The Monitor Interval option (Tools > Options) controls how long (in seconds) VIZOR waits before:

- Checking for messages from a Web view
- Checking for user activity in a Web view
- Terminating a user session when logging off users.

The default interval is 60 seconds. If your Web server is on a slow Internet connection and you want to reduce network traffic, you can increase the monitor interval. Too large an interval, however, affects the time administrators have to wait when performing an action that involves logging off users.
ABOUT THE INTEGRITY EDITOR

The Integrity editor (available from the Tools menu) allows you to remove database locks and validate the integrity of your databases. The integrity tasks apply to both SQL Server and Microsoft Access databases.

REMOVE LOCKS

LOCKS ON PROJECT DEFINITIONS

Removes locks on project definitions, such as reports, queries, fields, and sorts.

If the locked by another user message is displayed when you try to use VIZOR Admin, run the Remove Locks task to remove the locks.

LOCKS ON USERS AND LOGON SESSIONS

Removes locks on users and logon sessions. Users are locked while someone is editing a record in the users database (the users.mdb file or, in SQL Server, the USERS_MDB database).

Sessions shown in the Logons editor can be locked. For example, you may not be able to remove a logon that is several weeks old because it is locked. Run Remove Locks to unlock the logon.
VALIDATE INTEGRITY OF FIELDS

This task verifies that the issue database and the project definition database are synchronized and have the same set of fields. The task also checks primary keys and indexes.

By running the Validate Integrity of Fields task, you can synchronize the backup issue database with the current project definitions database.
VALIDATE RELATIONSHIPS

This task verifies that built-in related fields are set correctly in the issue database. In the VIZOR project, the only built-in related fields are **State** and **Status**.

**Validate Relationships** does not apply to field relationships created with the Workflow editor.
VALIDATE INTEGRITY OF ISSUES

This task verifies that the issue database and the revision history are in-sync, by checking the revision numbers stored in the different tables of the database.

ENABLING AUTO REPAIR

If you have problems running VIZOR Admin, use the Enable Auto Repair option on the Tools menu.

Enable Auto Repair tries to repair VIZOR Admin by fixing broken references, linking tables, and recreating objects.

To turn on auto-repair, click Enable Auto Repair in the Tools menu, then exit VIZOR Admin and log back on. While auto-repair is turned on, VIZOR Admin runs in repair mode, which may be slower than normal mode.

To turn off auto-repair, click Enable Auto Repair again.
RELEASING DATABASES

Some VIZOR administrative tasks start a shutdown process. Examples of such tasks include relocating databases, creating projects, applying changes in the Field Editor, generating Web views, and running integrity tasks.

The shutdown process logs off users and releases databases. If you see a Still releasing databases message during the shutdown process, you can:

- Click **Cancel** to stop trying to release the databases, and start logging off users. Do this only if you are sure that no one is using the databases.

- Try to manually release the databases and then click **OK**. To release the databases:
  - Unload the virtual directories used by VIZOR.
  - Stop the Mq Issue Agent service.
  - Exit all VIZOR programs.
  - Exit any programs (such as Microsoft Access or SQL Server Enterprise Manager) that may be accessing the databases.

Note that if you set the option **Tools > Options > Always verify locked databases** to **No**, VIZOR does not try to release databases during the shutdown process. In general, setting **Always verify locked databases** to **No** is not recommended, unless you know there is a process that regularly accesses the databases but does not affect VIZOR.

UPLOADING LARGE ATTACHMENTS

On Windows Server 2003 systems, the default size limit for uploaded files is 4096 KB. If a user tries to upload an attachment that exceeds this limit, the user may get "The page cannot be displayed" or "Cannot find server or DNS Error" error messages.

To increase the upload limit for attachments:

1. Using a text editor, open:

   \Program Files\Common Files\MetaQuest\Scripts\IIS\MqWVDConfig.vbs

2. Set the constant UPLOAD_FILE_MAX_SIZE to the maximum size (in bytes) for uploaded attachments. For example:
3 Re-create the virtual directories where you want the new size limit to apply. Note that re-creating virtual directories logs off users.

a  Start the Web View Editor.

b  In the shortcut bar, click URL 🌐.

c  Click ☑️ to open the Web View Wizard.

d  In the Web View Wizard, click Next until you get to the last page of the wizard, then click Finish. This recreates the virtual directories associated with the existing URL.

e  Click Yes each time the Wizard asks if you want to re-create a virtual directory and reset its properties.

A URL (such as //Server/vit) has several associated virtual directories (for example, vit, connect00, connect01, and connect02).

FIXING 404 ERRORS

When VIZOR is installed on a Windows Server 2003 system, users may get 404 errors (File not found) when trying to open attachments. This is because IIS 6.0 on Windows Server 2003 only accepts requests for static files with extensions that it recognizes. You can prevent this problem by adding the extensions to MIME Types settings of the IIS server.

To define a MIME type for a specific extension:

1  Open Internet Information Services.

2  In the console tree, right-click the virtual directory used for attachments, then click Properties.

3  On the HTTP Headers tab, click MIME Types.

4  Click New.

5  In the Extension box, type a file name extension (for example, ini).

6  In the MIME Type box, type the MIME type of the file (for example, text/ini).

7  Apply your changes.
NOTES

- You may need to restart the World Wide Web Publishing Service before your changes take effect.

- For more information on MIME types, see MIME Types in the IIS 6.0 Manager Help.

- The URLScan tool can also be configured to block processing of certain file name extensions. Verify these settings.

FINDING THE CURRENT VERSION

Keeping your VIZOR up to date is important to access to the newest features and the best functionality possible as new upgrades roll in, knowing your current build will help you determine if your VIZOR needs an update soon.

We can use your browser’s “Inspect” or “View source code” features to check your current VIZOR build. Follow the steps below:

1. Go to your VIZOR logon page by entering your organization’s URL. The most common format is https://myorganization.vizor.cloud/connect
2. Right click anywhere on the web page, this will display a menu with the options “View page source” and “Inspect”.

The difference between these two options is that “View page source” will show the HTML code used to build the page initially. “Inspect” will show the elements in their current state along with any changes made by the page’s code.
3. Click on any of the two options before.
   - **View page source** will open a new window with the HTML code of the current page
   - **Inspect** will open a console within the current page

4. To find the current version in both options, click anywhere on the displayed code and press **ctrl + F** to open your browser’s search box functionality and search for “build”. A line in the code in the format below will indicate the current version:

   `<meta name="build" content="7.7.0.XXX.XXX">`

For example, the line `<meta name="build" content="7.7.317.007">` shows us that the current version is 2.5.2.317, indicated by the “317“ in the "7.7.317.007" portion of the code line.
A line like `<meta name="build" content="7.7.0.318.006">` indicates a 2.5.2.318 version, and so forth.

View page source option

```
<html lang="en-US">
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />  
  <meta http-equiv="X-UA-Compatible" content="IE=edge" />
  <meta name="viewport" content="width=device-width, user-scalable=no, initial-scale=1.0">
  <meta name="apple-mobile-web-app-capable" content="yes">
  <meta name="apple-mobile-web-app-title" content="VIZOR Login">
  <link rel="apple-touch-icon" href="theme/images/images/apple-touch-icon.png">
  <link rel="icon" type="image/png" href="theme/images/images/Census.png" sizes="32x32">
  <link rel="shortcut icon" href="theme/images/images/Census.ico" type="image/ico">
  <meta name="build" content="7.7.0.318.006">
  <link rel="stylesheet" href="https://use.fontawesome.com/releases/v5.2.0/css/all.css">
  <link rel="icon" type="image/png" href="theme/images/images/Census.png" sizes="32x32">
  <meta name="build" content="7.7.0.317.007">
</head>
```

Inspect option

In some cases when using the “inspect” option, clicking on the `<head> </head>` line will be required to open the portion of the code in between to find the current build.

```
<html lang="en-US">
<head>
  ...
</head>
<body class="LoginBody" onload="onLoad()">...
</body>
</html>
```
CHAPTER 37 - IMPORTING DATA
ABOUT IMPORTING DATA

VIZOR stores most of its issue data in the tblDts table of the issue database (<project>01.dat for Microsoft Access, <project>01_DAT for SQL Server). To import issue data into this table, use the Import Records command in the File menu of Vizor Admin. VIZOR stores most of its issue data in the tblDts and tblFixInformation tables of the issue database. tblFixInformation stores the information entered in the Fix tab (note that not all projects use the Fix tab). The Import Issues dialog shows the following information:

Source table

You import issues from a source table, which could be in Microsoft Access, SQL Server, a delimited text file, or a number of other formats.

Source fields

Source fields are the fields imported from the source table

Destination fields

Destination fields are the fields in the VIZOR database table tblDts.

Mapped fields

You map source fields to destination fields. When you click Start, the mapping determines how the source fields are copied to the destination fields.

To import issues:

1. Prepare your issue data and the VIZOR database.
2. Import issue data into a source table.
   A source table is an intermediate table that holds the issue data you want to import into tblDts and tblFixInformation.
3. Map the fields in the source table to the fields in tblDts and tblFixInformation.
4. Click Start to create new records in tblDts and tblFixInformation and to copy the imported issues from the source table into these new records.
WHAT CAN YOU IMPORT?

The main tool to import and synchronize with external data is the VIZOR Import Manager tool.

With it, you can import from sources like:

- CSV files
- Excel files
- Active Directory (AD) If using AD logon authentication and/or synchronizing the information of user and employee accounts.
- LDAP directories Similar to AD if using LDAP directories for logon authentication and/or synchronizing the information of users and employees. It can be in addition to AD.
- Inventory / Asset Management / CMDB For automatically displaying hardware and software information of the computer experiencing the incident to the IT analyst/technician from HelpDesk, including the latest changes in the system.
- Remote Control Using PC-Duo to allow IT analysts/technicians to connect remotely directly from HelpDesk/VIT to the employee desktop for troubleshooting.
- Microsoft Dynamics CRM, if synchronizing the information of contacts, users and employees. It can be in addition to AD.
- Microsoft Dynamics GP, for procurement, purchasing information.
- SugarCRM, for contacts, customers and related records.
- MailChimp, for contacts, customers and related records.
- HR Systems, for employee information.
Most data integrations involve the following:

- Create an import rule

- Define the source type

<table>
<thead>
<tr>
<th>Type</th>
<th>File Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Excel</td>
<td>Country Locations - Import Template.xls</td>
</tr>
</tbody>
</table>

- Define the exact source
• Configure the import settings

**Import Settings**

Configure the settings for how the C:\Program Files [x86]\Vizor\ConnectServer\Import\ExternalData\Locations - Countries\Country Locations - Import Template.xls -- Country Locations from Excel data should be imported.

<table>
<thead>
<tr>
<th>Import Settings</th>
<th>Import</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="on" alt="Check box" /></td>
<td><img src="on" alt="Check box" /></td>
</tr>
<tr>
<td><img src="on" alt="Check box" /></td>
<td><img src="off" alt="Check box" /></td>
</tr>
</tbody>
</table>

You can also use VIZOR Admin, which uses a Microsoft Access layer to import data. In this case, you can import from any of the formats and applications supported by Microsoft Access:
Delimited text (values separated by commas, tabs, or other characters)

- Fixed-width text (values arranged so that each field has a defined width)
- Microsoft Excel (versions 2.x, 3.0, 4.0, and 5.0)
- SQL databases, using ODBC drivers
- Microsoft Access (databases other than the open database)
- HTML

With VIZOR, you can import data into any of the fields in the tblDts table. This table contains most of the issue data.

You cannot use VIZOR to import data into the following tables:

- tblUser, which contains user information such as the user's logon name, full name, e-mail address, and telephone number.
- tblAttachment, which contains the names of the files attached to different issues.
- Any of the tables that contain the possible values for choice lists.

HOW RECORDS ARE CREATED

When you click the Start button, VIZOR creates new records in tblDts and tblFixInformation, and copies the data from the source table into the new records.

In general, if there is no mapping for a field or the imported data is invalid, VIZOR leaves the field blank. However, there are exceptions. The following summarizes how VIZOR handles fields when it creates new issues.

**Issue Number**

You cannot import issue numbers. VIZOR automatically assigns issue numbers to issues.

**Owner (nUserID)**
You can import the full name of a user or the ID of the user in tblUsr.

If there is no mapping or the user name is not found in tblUsr, the field is left blank.

**Submitter (nSubmitterID)**

You can import the full name of a user or the ID of the user in tblUsr.

If there is no mapping or the user name is not found in tblUsr, the name of the current user is stored in the field.

**Contact (nOriginatorID)**

You can import the full name of a user or the ID of the user in tblUsr.

If there is no mapping or the user name is not found in tblUsr, the name of the current user is stored in the field.

**Status**

You can import the ID of a choice value or the choice text. If there is no mapping for a choice list field, VIZOR sets the **Status** field to the choice with ID = 0 (by default, **New**).

**State**

You cannot import **State** values. Sets the **State** field based on the **Status** field.

**Time and Date fields**

You can import time and date values. If you do not map a date or time field, VIZOR sets the field to the current date or time. See the tblSubstate choice table for the mapping of Status values to **State** values.

The **Closed Date** field value is imported only if the **State** is **Closed**.

Imported date values should use the format yyyy/mm/dd.

Imported time values should use the time format specified in the Regional Options of Windows Control Panel.

**Choice lists**

You can import either the choice ID (the nID of the choice in the VIZOR choice table) or the choice text.

BEFORE YOU IMPORT
ADD FIELDS FOR IMPORTED DATA

Compare the issue data you want to import against the fields in tblDts and tblFixInformation. If you want to import additional issue data for which there are no corresponding fields in these two tables, use the Field editor to add the required fields.

CREATE A NUMBER FIELD TO HOLD IMPORTED IDS OR RECORD NUMBERS

If you want to import the IDs or record numbers of your data records, create a numeric field in VIZOR. You can then map your record IDs to this field when you import your data.

CREATE USERS AND CONTACTS

Add users and contacts in VIZOR before importing data that contains user names.

When you import user names into the Owner, Submitter, and Contact fields, the names must match the full names assigned to the users in VIZOR. You must use the users’ full names, not their logon names.

For example, if you import a set of issues owned by a user for whom no entry is defined, the Owner field is left blank.

Note that you can import the numeric ID for a user in the tblUser table (users database).

CUSTOMIZE VIZOR CHOICE LISTS TO MATCH THE IMPORTED DATA

In VIZOR, customize choice lists to match the values you want to import. You could also change the values in the imported data to match the VIZOR choice lists. You could do this in the original issue data, or you could use Microsoft Access to modify the source table created when you imported the original issue data.

IF YOU ARE IMPORTING TEXT FILES
If your issue data is in a text file, the first data record should contain the field names. Otherwise, VIZOR assigns the fields the names 1, 2, 3, and so on. This makes it harder to map the fields.

Also, the first data record should have no blank fields. Microsoft Access uses the first data record to determine the data types of the fields. For example, if a date field is blank, Microsoft Access imports it as a text value, and you will be unable to convert the field into date format.

BACK UP PROJECTS

Make a backup copy of the issue database before you import any data. If you make a mistake mapping the fields, having a backup copy allows you to change the mapping and try again.

LOG OFF USERS

Make sure no one is using the project database while you import issues. Ask all users to exit VIZOR before you start to import issues.

THE SELF SERVICE IMPORT ASSISTANT

Beside the import manager, the new VIZOR version has implemented the Self service import assistant. The assistant will let you import from an excel file. To import using the self service import assistant, follow the steps below:
1. On your Home Page, click on the “Users” link to access the “Users” web view:

![Users web view]

2. Once in the “Users” web view, click on the “Import” button to open the Self-Service Import assistant

![Import assistant]

3. The Import assistance will open, follow the instructions:

   a. Download the template from the link provided and fill in the user information to import.

      • The template will look like this. Update it with your user’s information

      | A | B | C | D | E | F | G |
      |---|---|---|---|---|---|---|
      | First Name | Last Name | Unique ID | Company Name | Category | Email 1 | Email 2 |

      • As seen on the image before, you will be asked to fill in your user’s information in the following fields:

      1. **User’s First and Last name**
      2. **Unique ID**: This is the ID of the person in the external source from where they were imported. For example, if the user was imported from an HR system, this would be the employee number
      3. **Company name**: The user’s company of origin
      4. **Category**: This includes several values as
         • Contractor
         • Consultant
         • Employee
         • Intern
         • Etc
      5. **Email**: The user’s email address.
      6. **Fields highlighted in blue are mandatory, fields in black are optional.**

   b. Click on Import files and then upload the file you want to import.
   c. If the “Enabled” slider is set to No, set it to Yes
   d. Once completed, if you aren’t planning to import additional users again soon, set Enabled to No
4. Once the import is completed, the assistant will give you a rundown of the users imported. In this example, 424 users were processed, 423 were synchronized and 1 of them was a brand new addition.

| Total Processed: | 424 |
| Total Added:     | 1   |
| Total Synchronized: | 423 |
| Total Errors:    | 0   |

Log: Importing from UserImportTemplate-DEMO315rev1_run3.xlsx

Wednesday, March 17, 2021 11:19:50 AM

5. Your users should have been imported.
IMPORTING ISSUES INTO A SOURCE TABLE

You don't import issues directly into the VIZOR tables. Instead, you import the issues into a source table. VIZOR copies the imported data into its tables after you define a mapping between the fields in the source table and the VIZOR fields.

To import issues from a file:

1. On the File menu, click Import Issues.

2. Click New Source Table to import data from a text file, spreadsheet, or database table into a Microsoft Access table (the source table).

3. In the Files of Type list, click the file format you want to import.

   To import issues from another VIZOR database (or from any other Microsoft Access database), click Microsoft Access.

4. Click the file you want to import, and then click Import.

   To import issues from a VIZOR Access database, select the project01.dat file.

5. In the Import Objects dialog, select the import options you want.

   If you are importing from a text file or spreadsheet, select the First Row Contains Field Names check box.

   If you are importing from a Microsoft Access database, select the tables you want to import.

6. Click OK to import the data.

   VIZOR creates a source table named after the file you selected.

7. To import another file, repeat steps 4 and 5. When you've finished importing, click Close.

To import issues from a SQL database:

1. On the File menu, click Import Issues.

2. Click New Source Table.

3. In the Files of type list, click ODBC.

4. In the Select Data Source dialog, click the Machine Data Source tab.

5. Find the SQL Server data source and click OK.
6 In the SQL Server Login dialog, type your SQL Server login ID and password.

7 Click **Options**, and in the **Database** list, click a database.

To import issues from a SQL Server database, click the issue database.

8 Click **OK**.

9 In the Import Objects dialog, select the tables you want to import.

For SQL Server databases, the table to import is `dbo.tblDts`.

10 Click **OK**.
COMBINING MULTIPLE SOURCE TABLES

When you import issues into VIZOR, you work with one source table at a time. If your issue data is stored in two or more tables, you'll need to combine those tables into a single source table before you can map the source fields to the destination fields.

First, use the Import Issues dialog to import each file into a separate source table, then use Microsoft Access to define a query that joins these source tables into a single table.

IMPORTING ISSUES FROM PROJECTS

In VIZOR projects, issue data may be split across two tables (tblDts and tblFixInformation) in the issue database.

You need to merge the two tables before you can map the fields.

To import issues from Microsoft Access .dat files:

1. Click Add tblDts and tblFixInformation to the list of source tables.
2. In the Source Table list, click qryMergeCensusTables.
   This query adds the combined fields from tblDts and tblFixInformation to the Source Fields list.
3. Click Auto Map, and then click Start.

To import issues from a SQL Server issue database:

1. Add dbo.tblDts and dbo.tblFixInformation to the list of source tables.

   The source tables are named dbo_tblDts and dbo_tblFixInformation.
2. Create a new query to merge dbo_tblDts and dbo_tblFixInformation.
3. In the Source Table list, click the new query.
   This query adds the combined fields from dbo_tblDts and dbo_tblFixInformation to the Source Fields list.
4. Click Auto Map, and then click Start.

CREATING QUERIES TO MERGE SOURCE TABLES
The `qryMergeCensusTables` query merges two source tables named `tblDts` and `tblFixInformation`. If the source tables you want to merge have different names, you need to create a new query based on `qryMergeCensusTables`.

**To create a new query for merging source tables:**

1. Exit VIZOR Admin and open `Program Files\Vector\ConnectTools\Admin.mdb` in Microsoft Access.
2. In the **Objects** list, click **Queries**. Click `qryMergeCensusTables` and click **Design**.
3. In the **View** menu, click **SQL View**.
4. In the SQL statements, replace all occurrences of `tblDts` and `tblFixInformation` with the names of the source tables you want to merge.
5. In the **File** menu, click **Save As** and type a name for the new query.
7. Open `Program Files\Vector\ConnectTools\Admin.mde`.
8. Open the table `tblImport` and add a new record. In the `tName` column, type the name of the query. In the `nID` column, type a unique, numeric ID for the query (use the next available `nID`).
10. The new query is now available in the **Source Table** list of the Import Issues dialog.
MAPPING IMPORT FIELDS

After you create a source table, you must define a mapping between the fields in the source table and the fields in tblDts and tblFixInformation. VIZOR uses this mapping to copy the imported data into the new records it creates in tblDts and tblFixInformation.

To map a source field to a destination field:

1. Click a field in the Source Fields list.
2. Click a field in the Destination Fields list. The data in the source field is copied to this field when you click the Start button.
3. Click the right arrow button to map the fields.

To remove a mapping:

1. In the Mapped Fields list, click a mapping.
2. Click the left arrow button.

MAPPING TEXT FIELDS

Text fields, such as tBriefDescription, have a limit of 255 characters. Memo fields store large numbers of characters (in Access, up to 64000 characters; in SQL Server, up to maximum length of 231-1 (2,147,483,647) characters).

MAPPING MEMO FIELDS

Import data into the mDetailedDescription and Activity$Log fields, not into the Description$Input and Activity fields. Import data into the mDetailedDescription and Notes$Log fields, not into the Description$Input and Notes$Input fields.

IMPORTING CHOICE LISTS
Import either the choice text or the numeric ID of the choice in the choice table.

**IMPORTING USERS, SUBMITTERS, AND CONTACTS**

Import either the full name of a user, or the numeric ID for that user in the tblUser table (users database).
CHAPTER 38 - INTEGRATION WITH OTHER SYSTEMS
INTEGRATIONS

VIZOR is a very flexible and open IT platform and it has multiple integrations with external systems.

Integrations are usually connecting and leveraging information that is produced or consumed by VIZOR. Integrations are key to having a clean and efficient IT service in an organization, avoiding duplication of data and assigning clear responsibilities to the data entities and processes.

From the perspective of data flow, there are three types of integrations:

1. Data is input to VIZOR, sourced from the external system
   An example of this integration is Solarwinds, in which VIZOR imports and synchronizes the server information collected by Solarwinds, but Solarwinds is not modified in any way by the integration.

2. Data is output from VIZOR and sent to the external system
   An example of this is the integration with some software deployment tools, which are controlled or triggered by VIZOR Actions to automate the allocation of software to users.

3. Data is input and output to/from VIZOR and to/from the external system
   An example of this integration is with Active Directory, in which VIZOR imports and synchronizes the accounts from AD, but VIZOR can also modify AD, creating accounts, resetting passwords, etc.

VIZOR offers various alternatives for integrations. You may use one or several approaches in your project, depending on your requirements.

1. Via Email (simple configuration)
2. Data Layer Integration
3. Programming Extensions within VIZOR (intermediate)
4. Web Browser API (advanced)
5. Web Server API (advanced)
6. Application Server COM API (advanced)
7. Web View Settings & Configurations (advanced)

INTEGRATION VIA EMAIL

Many systems have the ability to send or receive emails. VIZOR can take advantage of this and ‘talk’ to the external system to either continue a process in real time, trigger an event on the system, or send/receive data at the time of the event. One example is when a purchase is created in an accounting system and part of the information is sent in an email to a predefined email address that VIZOR monitors. VIZOR then converts the email and can potentially import data, create a ticket or trigger a custom workflow process.
INTEGRATION VIA DATA LAYER

VIZOR has a solid framework for integrating data with an external system, especially for data input into VIZOR so it is imported and maintained synchronized.

The framework supports out-of-the-box SQL Server databases, MySQL databases, Excel worksheets, CSV and XML sources. You need to define the following elements when integrating with via the Data Layer:

- Define the entity in VIZOR for which the external data should relate to (asset, software license, incident, user, contact, etc.)
- Define the primary key of the external system
- Define any fields or attributes from the external system that will be mapped to VIZOR fields.
- Define any default values that should be added.
- Define any unique fields that exist in the external system, relevant to the integration.
- Define how often the integration should be executed.
- Define any special conversions of data or adjustments needed in the mapping of fields from the system external into VIZOR.

You will likely create a rule in the VIZOR Import Manager tool. The following tables in the USERS db will be relevant to define the schema and the behavior of the rule:

- tblImport_ImpRule
- tblDefaultValue_ImpRule
- tblFieldMap_ImpRule

Please contact Vector Networks support for more details about doing these integrations.
CHAPTER 39 - VIZOR LICENSE

VIEWING YOUR LICENSE INFORMATION

To check the number of available licenses, the license keys and related information, log on to VIZOR Web Admin and go to the Licenses tab.

**Evaluation licenses** allow you to use VIZOR for a specified period of time. At the end of that period, you can no longer run VIZOR unless you provide a valid license key.

**Concurrent licenses** are permanent licenses that allow a specified number of users to use VIZOR simultaneously. With concurrent licensing, you only need licenses for the maximum number of simultaneous users. For example, if you have 30 users who need access to VIZOR, but no more than 20 log on at the same time, you need only 20 licenses. When all 20 licenses are in use, no additional users can log on until someone logs off.

**Named licenses** are per-user licenses. Each license is dedicated to a specific user. VIZOR automatically assigns named licenses to users as you create and disable user accounts. With named licensing, you cannot create more users than named licenses (for example, if you have five named licenses, then you can have at most five user).

**NUMBER OF LICENSES**

Shows how many users can run VIZOR concurrently. The Access Enabled license key determines the number of concurrent users (to see the number of concurrent users, click Access Enabled in the Product list).
LICENSE TYPE

Evaluation licenses are temporary licenses that have an expiration date. Concurrent licenses are permanent licenses that allow a specified number of users to use VIZOR simultaneously.

EXPIRATION DATE

Shows the date at which the evaluation license expire and after which users will not be able to log into VIZOR.

ENTERING LICENSE KEYS

1) Login to Web Admin: http://< Server Name >/connectadmin (Different from the main VIZOR URL http://< Server Name >/connect)

2) Log in with an admin account (the default admin remains valid for this)

3) Select the Licenses & Logons tab
4) Click on the bottom right View / Edit licenses... button

![View/Edit Licenses... button]

5) Paste the new key in the popup box

![License key entry and Add button]

6) Click “Add”

7) Click “Close”

RESERVING LICENSES

VIZOR offers the ability to assign licenses to specific users. This way, the latter will always have access to Web views regardless of the number of users currently accessing the system.

For example, if you have 10 licenses, and you wish to reserve 1 for a specific user (For example, 'Employee'), this means you will only have 9 licenses left for other users to use. When 'Employee' logs in, VIZOR will automatically use his reserved license. If 'Employee' logs in a second time, while still using his reserved license, VIZOR will use one of the unreserved (floating) licenses.
To assign reserved licenses to a user, set a value for the *Number of Reserved Licenses* field. This is done via the Users and Contacts editor, as described in [Editing User Information](#).

For information on how concurrent licenses are handled, see [Types of Web Views](#).

To view how the licenses are distributed, or whether or not they are in use, go to the **Licenses** area in the Web Admin.
CHAPTER 40 - VIZOR PROJECTS
WHAT IS A VIZOR PROJECT?

In VIZOR, projects are used to keep data in separate databases. How you organize your VIZOR projects is up to you. You can have one project for tracking a new type of process that is unique and not similar to any existing database. To create and manage VIZOR projects, use Vizor Admin.

A VIZOR project includes:

- A database of data records or process and their revision histories, attachments, agreements, aprovals and e-mails.

- A set of project-specific definitions, which include styles (queries, sorts, layouts, reports, and report pages), the fields, e-mail templates, choice lists and notification definitions. These definitions are shared by all users of a project.

PROJECT STRUCTURE

Creating Projects

Typically, you start a new project because you want to tracking a completely different item or type of record or process in a new database.

New projects are always based on an existing project. When you create a new project, you can copy the data records, styles, notifications, Web views and the fields from the base project.
To create a project:

1. Start VIZOR Admin, and click **New Project** in the **File** menu.

2. In the **Project Name** box, type the name of the new project.

3. In the **Base Project** list, click the project you want to use as a template for the new project.

4. In the **Groups Allowed to Open Project**, click the user groups that are allowed to access the project through VIZOR Admin, VIZOR Web Admin, the Web View Editor, or Web views.

   **Note that access to individual VIZOR components can be selectively disabled. For example, a group can have access to Web views of a project, but no access to Vizor Admin, Vizor Web Admin, and the Web View Editor.**

5. Under **Global Styles and Notifications**:
   
   - Click **None** to create a project with no queries, sorts, layouts, reports, or notifications. Only the fields are copied from the base project.
   
   - Click **Copy from the Base Project** to copy the definitions of fields, queries, sorts, layouts, reports, and notifications to the new project.

   **If you are creating your first project, we recommend you use one of the sample projects that come with VIZOR as the base project. Copy the styles and notifications, but do not copy the issues and revision history. Also, read Building a Project Template before you start tracking issues.**

6. If you want to copy the issues from the base project, click the **Copy issues and revision history from base project** check box.

7. If you don’t want to copy the Web views from the base project, clear the **Copy Web views from the base project** check box.

   **Copying Web views from the base project can save time. For example, copying the Web views from VIZOR means you don’t have to manually set up timestamping in a new Web view.**

---

**COPYING DEFINITIONS AND STYLES**

A new project is always based on an existing project. The new project can start **empty** or **take a copy** of the styles, notifications, and fields in the base project. In the New Project dialog, select the option that corresponds to what you want to do with the new project:

- **None**
Clear the styles and notifications so you can build your own. Copy the fields from the base project and use it as a starting point.

- **Copy from the Base Project**

Copy the styles, notifications, and fields from the base project and use them as a starting point, or template, for the new project. This is the suggested way.

**WHY COPY STYLES AND NOTIFICATIONS?**

Copying styles and notifications allows you to configure your new project faster by making changes on existing styles instead of creating them from scratch. For example, a new report may be very similar to a report that exists in the base project, with the only difference being that you need to add or replace new fields that only exist in the new project. In this case, it is faster to copy the styles, and therefore the reports, from the base project and then create the new fields and update the report in the new project.

**BUILDING A PROJECT TEMPLATE**

Before you start using VIZOR to track issues, you should build a project template. A project template is a project that acts as the base for all new projects. The project template contains styles and definitions common to all projects.

For example, a project template can define a standard set of queries, reports, and notifications. In addition, a project template can include a set of fields customized to match your company’s process and terminology.

Using a project template allows you to reuse custom styles, notifications, and fields. Each new project can copy the styles and definitions from the project template.

Before you build a project template, you must evaluate your issue tracking and reporting requirements. For example, you should decide:

- Which custom fields and choice lists are required.
- Which standard queries and reports you want in each project.
- Which notifications are needed to the workflow in your process.
To build the actual project template, create a new project based on the VIZOR project, then customize the issue fields and define the custom styles and notifications you need.

DELETING PROJECTS

TO DELETE A PROJECT:

1. In VIZOR Admin, click a project in the **Project** list.
2. On the **File** menu, click **Delete Project**.

EDITING PROJECT PROPERTIES

The project properties are displayed when you click a project in the **Project** list.

PROJECT LOCATION

Location of the project files, which includes the definitions database.

DEFINITIONS DATABASE

The name of the project definitions database. The definitions database contains the definitions of the fields, queries, sorts, layouts, reports, and notifications for the project.

DATABASE ENGINE

Specifies whether the project uses Microsoft Access or SQL Server for the issue database.
GROUPS ALLOWED TO OPEN PROJECT

List of user groups that are allowed to open the project. Groups allowed to open a project can:

- Log on to Web views of the project (if they also have permission to open the views).
- Edit the project in VIZOR Admin (depending on what features are enabled for the group).
- Edit views of that project in Web View Editor, or generate new views of that project.

If the Users group is allowed to open the project, then all groups can open the project. The Admins group is always allowed to open projects.

CURRENT USERS

Displays the users currently logged on to Web views of the project.

Name
Logon name of the user.

Date/Time
Date and time that the user logged on.

Workstation
The user’s IP address or computer name.

Project
The user is logged on to a Web view of this project.

Virtual Directory
The virtual directory is the final part of the URL used to access the Web view. For example, if the virtual directory is named vit, then the URL is http://server/vit.
Virtual directories such as connect00, connect01, and connect02 are all accessed through the //server/vit URL.

**Application**

This is always *WebView*. The **Logons Editor** also lists the Web View Editor and Web Admin.
CHAPTER 41 - PLANNING AND DEPLOYING A CUSTOM PROJECT

PLANNING

Before you can set up your VIZOR system, you need to understand your business structure and have a clear idea of the process you want to implement. The following sections illustrate the sort of information required to set up a typical VIZOR installation.

INFORMATION RECORDING AND TRACKING

- What information do you want to record and track for each issue?
- How do you categorize issues?
- Do you want to provide different views of the issue data?

For example, do you want a summary view optimized for logging issues and categorizing problems, and a detailed view for recording things such as how the issue was resolved, and how long it took?

- Do you want to be able to link issues? VIZOR supports parent-child relationships between issues.

WORKFLOW

- What is your help desk process?

Can you represent the path of an issue through the process as a sequence of steps, or decisions, such as New, Assigned, Verified, Resolved?

- Do you want to enforce this workflow process?
- Who needs permission to make decisions? Who is responsible for carrying out each step in the process?

- Do you need e-mail notifications to enforce ownership and accountability? When issues are submitted or resolved, who needs to be alerted?

---

**ROLES AND RESPONSIBILITIES**

- What are the different roles and responsibilities of the people that use VIZOR? Can you identify different groups of users?

- Do different groups have different requirements of the issue tracking system? Do you need to restrict access to the system based on group membership?

  *For example, you probably want to restrict most users to the ability to submit and track issues. Support staff, on the other hand, require greater access to the system.*

- Do you need to manage and coordinate work teams? VIZOR allows you to define work teams and the assign issues to them rather than a specific individual.
IMPLEMENTATION ROADMAP

This roadmap outlines the major steps in implementing an issue tracking system. Performing the steps in the sequence recommended here save time and simplify the process.

STEP 1. CREATE A PROJECT

A project defines the fields, queries, sorts, layouts, and reports that you see in a Web view.

1  Create a new project.

2  Customize the fields in the project.

3  Edit and define the queries, reports, sorts, and layouts to match the set of fields defined in the project.

STEP 2. DEFINE USER GROUPS AND CREATE USER ACCOUNTS

1  Define user groups and set group permissions to control access to data and administrative features.

2  Create user accounts so people can log on. You can either import user accounts from Active Directory (or from a Windows domain), or create user accounts in VIZOR.

3  Assign users to groups.

4  Define work teams and assign users to work teams.

STEP 3. DEFINE AND GENERATE WEB VIEWS

After you generate and test your Web views, you can perform more advanced customizations, such as defining workflow and notifications.

STEP 4. DEFINE FIELD DEPENDENCIES (OPTIONAL)
Use the workflow editor in VIZOR Web Admin to make the possible values in one choice list depend on the choice selected from another list.

You can apply changes made in the workflow editor without regenerating the Web view.

---

**STEP 5. DEFINE A WORKFLOW (OPTIONAL)**

Use the workflow editor in VIZOR Web Admin to define workflow rules to emulate your process. For example, you can enforce a sequence of steps by controlling the possible values of the **Status** field.

You can also define rules that set the value of a field when another field changes. For example, you can define rules that assign an owner based on the problem area:

When (Problem Area = Outlook), then set this value: (Owner = Resident Outlook Wiz).

---

**STEP 6. DEFINE SERVICE LEVEL AGREEMENTS**

A **service agreement** is an agreement between the help desk and users. The service agreement defines a required level of service for the users.

A service agreements can be with individual users (contacts), with all users in a department, or all users in a company.

A service level is a guarantee of a certain level of service. For example, a basic service level may provide 9-to-5 service during the regular working week, while a more comprehensive service level might provide 24 hour service, 7 days a week.

Each service level has its own hours of service, target response and closure times for issues, and escalation rules.

---

**STEP 7. IMPORT EXISTING DATA (OPTIONAL)**

After you finalize the set of fields in a project, you can import information from existing databases.
STEP 8. DEFINE AND SET UP NOTIFICATIONS

You can define and set up notifications after you generate your Web views, but you should do this before people start using the Web views to submit issues.

STEP 9. GO LIVE

Make your Web views available for general use.

STEP 10. SYSTEM MAINTENANCE (ONGOING)

You should regularly backup your projects, databases, Web views, and other system files.
CREATING A PROJECT

A project defines everything you see in a Web view: the fields, queries, reports, sorts, and layouts.

HOW MANY PROJECTS DO YOU NEED?

Normally, you don’t need to create a custom VIZOR project. However, if you need to track different data, or design your own custom processes that are separate and in addition to Assets, HelpDesk Tickets, Software Licenses, Locations and People, then VIZOR is a great platform to create your own custom system.

Each VIZOR project has its own database. In fact, two databases: one used for the data or process you want to track and another one for the schema and definitions of the VIZOR Project (fields, notifications, business rules, etc.)

In most cases, it is recommended to reuse the existing VIZOR Projects. For example, you can record different types of issues in the same HelpDesk database by configuring Web views and queries. Separate projects are usually not needed, only if the requirements to customize the fields, queries, sorts, layouts, and reports, are significantly different from the default VIZOR projects.

However, using separate VIZOR projects has some disadvantages:

- It is difficult to generate reports across projects.
- You need to maintain a new set of fields, business rules, etc.
- You cannot create a single view that covers all projects.
- It is difficult to link items from different projects
- People who work with all three types of issue can find that separate projects are inefficient and time-consuming.

CHOOSING A BASE PROJECT
A base project serves as a starting point for a new project. The new project inherits the fields defined in the base project, and can optionally inherit the styles (queries, reports, sorts, layouts, and notifications) and Web views as well.

VIZOR includes a default VIZOR project you can use as the base project. Before you create a new project based on VIZOR, you should familiarize yourself with the fields included in VIZOR, and understand what you can and cannot do when customizing fields.

Designed for use in development projects, VIZOR allows you to record and track project-related tasks, feature and enhancement requests, user suggestions, and change notices.

VIZOR includes over 60 fields, along with a complete set of reports, queries, sorts, layouts, and notifications based on those fields. Some of the default fields cannot be deleted, so even if you don’t use these fields, they take up extra space in your database.

Before you delete a field, you must remove it from any report, query, sort, layout, or notification that references it. Deleting unused fields helps minimize the size of your database.

CUSTOMIZING FIELDS

You can edit and delete most fields in VIZOR. For example, if a field is the right data type and size, but has the wrong caption, you can change the caption. Similarly, you can replace some or all of the entries in choice lists.

Before customizing a project, you should familiarize with the fields, and determine:

- Which of the existing fields you can use as is, or by changing the label, choice table, or tab
- Which fields you need to add
- Which the existing fields you want to delete

You should also familiarize yourself with what you can and cannot do when editing fields.

YOU CAN:

- Add new fields.
- Change field labels.
• Change the list of choices for a choice list and update the queries that test the choice values.

If you change the Status choice list, you should either disable or update the default workflow rules because the default workflow is based on this list.

• Delete most fields.

To delete a field, you must first remove it from any queries, sorts, layouts, reports, and notification that use the field.

Before you delete a field, go through the different queries, sorts, layouts, reports, and notification conditions and either remove the field or delete the style.

• Create linked choice lists so that the contents of one list depends on a selection in another list.

• Move fields between tabs.

• Change tab names, and reorder the tabs.

• Disable fields (make read-only) either for all users or for specific user groups.

• Hide fields. Note that when you hide a field, it is hidden in all Web views.

YOU CANNOT:

• Change field types.

For example, you cannot change a single choice field into a multi-choice field, or a Number field into a Text field.

• Change the field size.

For example, you cannot change the size of a text box from 20 to 30.

• Delete certain fields. Some fields, such as Owner, State, and Status, cannot be deleted.

When you generate a Web view, you can choose not to include specific fields. So even if you cannot delete them, you can remove them from all views. Of course, the fields still take up space in your
Use multi-choice lists in workflow rules.

Use multi-choice lists in formulas, charts, or cross-tabs when building custom reports with Crystal Reports.

NOTES

- If you need to change the type or the size of a field, the best thing to do is to copy the field and delete the original. When you copy a field, you can edit its type and size. Note that copying a field does not copy the stored data, and deleting a field destroys any stored data.

WHAT HAPPENS TO STYLES

Styles such as queries and reports are based on fields. For the most part, VIZOR Admin automatically updates styles when you customize the fields, but there are some exceptions.

When you add a new field, you need to add it to the following reports:

- Current Issue - Detailed
  
  Used to print the current issue in a Web view.

- Notification - Detailed Record, Notification - Summary
  
  Used to format the contents or attachments to e-mail notification messages.

NOTES

- In a Web view, these reports show only the fields exported to the view.
WHEN YOU RENAME A FIELD

When you change the label appearing on choice lists, VIZOR Admin automatically updates any reports and layouts that use the field name as a title.

If you change just the Field Caption label, VIZOR Admin does not update any reports and layouts that use the field name as a title.

If you rename a field such as the Status field, you may want to rename any sorts, queries, and layouts whose names are based on the name of the field.

WHEN YOU EDIT A CHOICE LIST

If you delete a choice from a choice table (for example, Assigned from tblSubstate, the Status choice table), then you have to update any queries that test the choice value. The same is true if you change the choice text (for example, from Assigned to Started).

You may also have to update custom reports that use the choice list. For example, when you change the choice text, custom reports that use a specified sort order add the new choice to the Others category.

You should also check the workflow rules if you edit the Status choice list.

WHEN YOU DELETE A FIELD

Custom reports that use the deleted field do not display properly. For example, if a custom report uses the field for calculations, or as a chart axis, then deleting the field invalidates the report. In many cases the report still works, but the data does not make sense.
CREATING GROUPS AND GRANTING PERMISSIONS

Groups enable you to restrict access to Web views or administrative features. Typically, groups match the different roles in a process. For example, if you have separate groups for employees, help desk staff and asset managers, you can prevent employees from opening the same Web views used by the help desk team and the asset managers.

VIZOR includes several built-in groups that cannot be deleted: Users and Admins. It also includes several sample groups that reflect basic help desk roles: Employees, HelpDesk-Analysts, and IT Managers.

A person can be a member of two or more groups. If for example a help desk analyst is also responsible for administering your system, you can make this person a member of both HelpDesk-Analysts and Admins. As a member of Admins, the analyst has full access to all administrative features.

If you want to restrict access to Web views or administrative features, use groups. Typically, you create groups that match the different roles in your business process. For example, if you have separate groups for sales and development staff, you can prevent the sales staff from opening the same Web views used by the development staff.

You can have several different admin-type groups, with each group providing a different level of access to administrative capabilities. For example, a basic admin group could allow members to create new user accounts and update contact information, while other admin groups could:

- Create fields, edit choice lists, rename tabs, change workflow.
- Create reports, queries, sorts, and layouts, define notifications.
- Create projects, delete records, perform database maintenance, set up notifications.
THE BUILT-IN GROUPS

USERS

All users are automatically members of the Users group. You cannot remove users from this group, or delete it. Permissions granted to this group apply to all users, and cannot be overridden.

ADMINS

Members of the Admin group have complete access to all projects, administrative features and all read access to record information from incidents to assets or software. You cannot disable features or projects for the Admins group.

FEATURES

Features allow you to control:

- Who can use the Ad-hoc Query Editor, generate reports, update contact information, view revision histories, or change their password in a Web view.

- Who can log on to VIZOR Admin, VIZOR Web Admin, and the Web View Editor.

- Who can use certain tools in VIZOR Admin and VIZOR Web Admin. For example, who can edit workflow rules in VIZOR Web Admin, and who can create reports or edit fields in VIZOR Admin.
PROJECTS

When you create a project, you specify which groups can open the project. Groups allowed to open a project can:

- Log on to Web views of the project (if they also have permission to open the view).
- Edit the project in VIZOR Admin.
- Edit views of that project in Web View Editor, or generate new views of that project.

**Admins** can always open a project. Instead of allowing **Users** to open a project, you should allow specific groups. That way you can grant access permissions to views on a group-by-group basis in the Web View Editor.

VIEWS

Groups allowed to open a view can log on to the view. A group must be allowed to open the project before it can be allowed to open a view.

Remember that if members of the Users group are allowed to open the view, then any user can open the view.

USER ACCOUNTS

User accounts provide basic logon security. VIZOR supports the following types of account:

- VIZOR user accounts.
- Active Directory user accounts.
- Azure / Microsoft user accounts.
- Windows user accounts.

The authentication method used for each user is specified in VIZOR Web Admin.

A user account must is required to access VIZOR Admin, VIZOR Web Admin, and the Web View Editor. Users must also log on to access Web Views unless they use a submit-only view.

**SUBMIT-ONLY VIEWS**

A submit-only view allows an unlimited number of users to enter issues from a single user account. All users automatically log on to the view with this account (in fact, the users never see the logon window, they go straight to the view).

This user account must belong to a group that has permission to open the Web view, and to add and update contacts. The account is used to set the **Submitter** field.

Users submitting issues by this method are recorded as the contact. They must enter the required contact information (name, e-mail, and so on) the first time they submit an issue.

**IMPORTING USER ACCOUNTS FROM WINDOWS**

You can import accounts from an Active Directory domain or from a Windows domain. VIZOR includes a User Account Manager wizard to help you import user accounts.

You can also schedule imports to keep VIZOR synchronized with Active Directory (or Windows domains).

**PREDEFINED USER ACCOUNTS**

VIZOR includes several built-in users: **demo**, **itmanager**, **analyst**, **admin**, etc. It also includes sample users that reflect basic roles. You can disable most of these accounts in VIZOR Web Admin. The **admin** account cannot be disabled or deleted. It is recommended that you change the default admin password.
GENERATING WEB VIEWS

PARENT-CHILD RELATIONSHIPS BETWEEN ISSUES?

You can add a Child Issues tab to a Web view to allow users to link one or more child issues to a parent issue. For example:

- If you have several bugs that are all symptoms of the same problem, you can make those bugs the children of the main, parent bug for the problem.

- If a task consists of a number of sub-tasks, the sub-task issues can be children of the main task.

- If a bug is present in multiple branches of your code, you can create a child issue for each code branch.

By default, the parent issue controls the substate of the child issues. For example, when a user changes the substate of the parent to Fixed, the children are also marked Fixed. If you want the substate of a child issue to be independent from the substate of the parent issue, you must export the Substate controlled by parent field.

CUSTOMIZED FILES FROM THE BASE PROJECT?

New projects automatically inherit the customized Web view files of the base project including any custom reports.

When you create a new project, everything in:

CUSTOMIZEDFILES\#Project#<base-project>\n
is copied to:

CUSTOMIZEDFILES\#Project#<your-project>\n
WHAT IF YOU DON’T EXPORT A FIELD?

QUERIES

If you don’t export a field, don’t export queries that reference the field. The query won’t work.

For example, suppose you don’t export the Owner field, but you do export a query like My Open Issues, which tests the value of the Owner field. When a user tries to run the query, the user gets a message saying that the query could not be completed and the view is rolling back to the previous query.

If the query is the default query for the view, users get a more informative message when they log on.

LAYOUTS

Layouts do not include fields that are not exported.

SORTS

Sorts default to sorting by issue number if a field is missing.

LISTING REPORTS

Listing reports (such as the Current Issue - Detailed report, which is used by the Print button) include only the fields exported to the view.

CUSTOM REPORTS
Like listing reports, custom reports include only the fields exported to the view. However, unlike listing reports, custom reports do not always handle missing fields properly.

For example, if the **Owner** field is not exported, then, instead of showing owner names along one axis of a chart, the report may show the summary descriptions or the priority values. What the report shows depends on the order of the fields in the report definition (if a field is missing, the next one in the definition is used).

**SHOULD YOU AUTOMATICALLY UPDATE CHOICE LISTS?**

If you expect to frequently update a choice list, set the **Automatically Update List** attribute to **Yes**. This means you won’t have to regenerate the Web view every time you update the list because the view checks for updates each time a user logs on.

By default, only the **Contact**, **Owner**, and **Submitter** choice lists are automatically updated.

Automatically updating a large number of choice lists may affect performance. You should automatically update only the choice lists that you plan to frequently change.

**CHANGING FIELD LABELS**

To change field labels, set the **Caption** attribute in the Web View Editor. This allows you to override the label specified in the project.

The **Caption** attribute only changes the label in the HTML form. Everywhere else in the Web view (such as in reports and the Ad-hoc Query Editor), the label defined in the project is used.

**WHEN DO YOU HAVE TO REGENERATE?**

When you:

- Add a new field or query to a project. Remember to move the new field or query to the **Export to View** list before you generate.

- Change a choice list (for example, add a new choice, or change the text of a choice), unless **Automatically Update List** is set to **Yes**.
When you change any of the attributes for a field (such as when you set Automatically Update List to Yes).

You don’t have to regenerate when you:

- Change the definition of a query, sort, or layout.
- Define new sorts and layouts. All sorts and layouts are automatically exported to views of the project.
- Create or edit reports.
- Add a group to, or remove from, the list of groups allowed to open the view. You just have to save the view.
- Enable or disable features.

NOTES

Web view users must exit and log back on to see the changes.

HOW TO CONTROL THE LAYOUT OF FIELDS

The order of the fields in the Export to View list determines the order in which they are laid out in the two columns of the HTML form. For example, here’s how the first six fields in the Export to View list would be arranged, if:

- None of the first five fields are Memo fields.
- Field 3 has Column Span = 2.
- Field 6 is a Memo field and has Column Span = 2 and CSS Class = MemoFieldWidth. (Memo fields automatically have Column Span set to 2 and CSS Class = MemoFieldWidth.)
In this example, fields 1 through 5 have the CSS Class set to either `ComboBoxWidth` or `TextBoxWidth`. You can change the default widths by editing the CSS classes in CensusMain.css.
SETTING UP NOTIFICATIONS

Notifications allow you to alert users when issues are updated. For example, you can:

- Notify analysts and developers when issues are assigned to them.
- Notify support staff when employees update an issue.
- Notify employees and customers when issues are resolved.

Use notifications to alert users to changes to critical fields such as Owner, Status, and Priority. Defining too many update notifications can overwhelm users with e-mail, resulting in users missing important notifications.
POWER CUSTOMIZATIONS

This section covers a variety of ways to customize VIZOR, all of which are considered power customizations.

Power customizations often require directly accessing the SQL Server databases and a deeper technical expertise. Some customizations require writing code scripts in languages such as Javascript and Visual Basic, as well as other advanced techniques.

ABOUT THE DATABASES

MAIN RECORDS DATABASE

Also referred to as the DAT database, it contains records for the main entity of the project (set of databases). For example, issues or tickets in HelpDesk, assets in Resources, user accounts in Users, purchases in Purchases&Agreements, etc. This database also includes all the history of changes.

PROJECT DEFINITIONS DATABASE

Stores all project-related definitions, including fields, queries, sorts, layouts, reports, and notifications.

USERS DATABASE

Stores user accounts, contacts, and the information entered on the Contact tab.

<table>
<thead>
<tr>
<th>Database</th>
<th>Jet/Access</th>
<th>SQL Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Records Data</td>
<td>&lt;project&gt;01.dat</td>
<td>&lt;project&gt;01_DAT</td>
</tr>
</tbody>
</table>
ADVANCED WEB VIEW SETTINGS

There are many advanced settings that can be customized per Web view. To change them, you typically need to customize the file:

ViewConstants.js

**Available Settings**

<table>
<thead>
<tr>
<th>Area</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CommandBar</td>
<td>EnableSaveOnlyLastTab</td>
<td>If true, disables the OK (Save) button until the user is in the last tab.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used for Wizards.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default = false</td>
</tr>
<tr>
<td></td>
<td>EnableApplyInNewRec</td>
<td>If true, the Apply button is visible even in forms for creating NEW items, such as “Submit Ticket” in HelpDesk.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default = false</td>
</tr>
</tbody>
</table>
SIMPLIFY THE URL

If your VIZOR is hosted by Vector Networks, this has been already done for you.

If you host your own VIZOR server and the Web server does not run other pages on the main Web site, you can automatically redirect users from the main Web site to the VIZOR URL:

So, if the URL is:

http://myVIZORServer

if will be redirected to:

http://myVIZORServer/connect

In order to do that:

1. Copy the file Default.aspx from the folder <Server>\CensusWeb\Templates\Project and paste it in the folder of the main web site, which is typically “C:\inetpub\wwwroot”.
2. Delete or rename the existing file iisstart, so it is not the default document.

IF NOT USING INTEGRATED AUTHENTICATION - SSO

Are your users never going to log on to VIZOR with their Windows or Network/Active Directory accounts integrated with the Web browser? This is also refered to as SSO (Single-Sign On).

To remove the link to log on so your users are not confused:

1. Go to VIZOR Admin > Tools > Options
2. Look for the option *Show “Logon with my network account...”*.  
3. Select No.  
4. Click OK on the editor.  
5. Regenerate one Web view (any in that URL).

---

**IF MOSTLY USING INTEGRATED AUTHENTICATION**

Do most of your users use Windows authentication integrated with the browser?  
Would you prefer having a logon page that favours those users?

1. Customize the web.config file located in "ConnectServer\CensusWeb\Templates\Project" and move it to your CustomizedFiles.  
   Change the default logon page to be "logoff.asp". Add the following line before the entry for "logon.asp":  
   
   ```xml
   <add value="logoff.asp" />
   ```
   
   It should look like this:

   ```xml
   <defaultDocument enabled="true">
   <files>
   <clear/>
   <add value="logoff.asp"/>
   <add value="logon.asp"/>
   </files>
   </defaultDocument>
   ```
   
   2. Save the file.  
   3. Regenerate one Web View (any in that URL).

---

**TOTAL EFFORT TIME**
The Total Time or Total Effort time field is used to keep track of all the effective time the issue has taken from all the people involved in attending it or resolving it.

This includes the Owner of the ticket and any other user that has assigned tasks or that works on the ticket, usually field engineers, technicians and other support team members.

The Total Effort Time Field is characterized by:

- Data Type: numeric = 102
- Container Type=30

The special characteristic in this case is the container type 30, which includes the following elements:

- Read-only Field to display the total effort time in a dd:hh:mm format.
- A Stop Watch for counting active working time as it occurs, adding the time to the total when stopped.
- A button to add any time manually, in minutes.

When a field is Type=102 and ContainerType=30, the HTML field template fld_102_30.htmpl is applied.

**DISPLAYING THE TOTAL EFFORT TIME IN ANOTHER TAB**

To display the field in exactly the same manner as the original, with the 3 components, simply follow the usual procedure to copy a field to another tab. Since the data type and the container type will be 102_30, the correct field template will be used and the intended UI displayed.

To display only the amount in another tab, in read-only mode:
- Copy the field for another tab as usual (like the previous option)
- Make the field read-only, so fEnabled=False.
- Change the Container Type to 31.

Setting the Container Type to 31 will make it use the HTML field template for TimeSpan fields fld_102_31.htmpl.

The TimeSpan represents a time interval. Its two typical uses are:

- Reflecting the time interval between two date and time values. For example, to store the time between the creation time and closure time.
- Measuring elapsed time. For example, for the Stopwatch or the total effort time to reflect the time interval that has elapsed since the start of something an event.
CREATING AN ATTACHMENTS FIELD

Attachment fields are useful when looking for a more complete collection of information. Be it as a primary source or as a complement to your information, check out the instructions below to set up attachment fields.

Attachment fields can hold up any kind of files and the maximum size is controlled by the IIS service. The maximum size can also be set up by the administrator.

TO CREATE AN ATTACHMENTS FIELD:

In SQL Server Management Studio:

1. Open the project definitions database.
2. Open the tblDtsFields table.
3. Copy the record for the Attachments field and paste it into a new record.
4. Change the nID, tCaption, tLabelCaption, tBoundControlName and tWhere fields.
   - For the tWhere field, make sure that the correct number in the sequence is set up. This field will determine to which attachment field within the record the attached file will be linked to.
5. If you want to put the new attachments field on a different tab, change the nDestinationTabID field.

<table>
<thead>
<tr>
<th>tblDtsFields field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nID</td>
<td>Unique ID for the field.</td>
</tr>
<tr>
<td>tCaption</td>
<td>Label used in choice lists.</td>
</tr>
<tr>
<td>tLabelCaption</td>
<td>Default label for the field in a Web view.</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>tBound ControlName</td>
<td>Internal name for the field.</td>
</tr>
</tbody>
</table>
| tWhere | **Run the query:**  
SELECT tWhere FROM tblDtsFields  
WHERE tName='tAttachments' AND  
tTableName='tblAttachments'  
ORDER BY tWhere DESC  
  
Add 1 to the highest number returned by the above query, and enter this as the tWhere. |

**CUSTOMIZING URL BUTTONS**

URL buttons are implemented as A elements with background images.

Each of the default URL buttons (URLButton, MailToButton, RemoteControl) has four CSS classes, along with four associated :hover classes. The Web View Editor automatically determines which CSS class to use based on the field type and the field attribute settings. For example, the CSS classes used for URLButton are determined as follows:

<table>
<thead>
<tr>
<th>When</th>
<th>These CSS classes are used</th>
</tr>
</thead>
</table>
| Column Span=1 | URLButtonState1  
URLButtonState1:hover |
| Column Span=2  
CSS Class = MemoFieldWidth | URLButtonSpanTwoState1  
URLButtonSpanTwoState1:hover |
<table>
<thead>
<tr>
<th>CSS Class</th>
<th>URL Button Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpanTwoWidthOne</td>
<td>URLButtonTwoWidthOneState1</td>
</tr>
<tr>
<td>SpanTwoWidthOneState1:hover</td>
<td>URLButtonSpanTwoWidthOneState1:hover</td>
</tr>
<tr>
<td>Field already has a button (for example, a date field)</td>
<td>URLButtonSecondButtonState1</td>
</tr>
<tr>
<td></td>
<td>URLButtonSecondButtonState1:hover</td>
</tr>
</tbody>
</table>

These CSS classes are defined in the CensusMain.css style sheet in CensusWeb\Views\CensusWebVD\Theme\css.

Each different pair of CSS classes positions the button differently, by changing the value of the CSS `left` property.

The `.hover` pseudo classes change the background image to give a rollover effect.

To define your own buttons, copy the URLButton classes, change the class names, and point the background-image property to your button images. For example:

```css
.MyButtonState1 {
  background-image: url(../images/buttons/mybutton_off.gif);
  background-repeat:no-repeat;
  display:block;
  position:absolute;
  left:80%;
  width:24px;
  height:24px;
  top:0px;
}
```
For button rollovers, you'll need two versions of your button image. Your button images should have a one or two pixel margin (so there’s some space between the field and the button). Alternatively, you could adjust the **left** property.

To use these new classes, use MyButton as the value of the **URL Button CSS** attribute.
CUSTOMIZING STANDARD HTML REPORTS

Web views use HTML to display Listing reports. You can customize this HTML by editing the XML files that define the HTML page template.

- **TmplRpt_listing_<type>.xml**
  
  HTML template for an HTML report page, including the table that contains the report data.

- **ValueCell_listing_<type>.xml**
  
  HTML template for a table cell that displays a field value.

- **CaptionCell_listing_<type>.xml**
  
  HTML template for a table cell that displays a field caption.

where `<type>` is either tabular or multi-column (the two types of listing reports).

You can find these files in the `Reports` folder of a Web view, for example:

C:\Program Files\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\vit_vit\Reports

These XML files are dynamically created the first time you view a report.

VIZOR generates the HTML reports by transforming raw XML data into HTML using an XSL style sheet. The three .xml files are templates for the XSL style sheet.
CHANGING THE CSS STYLES

The CSS styles used by the HTML reports are defined in the TmplRpt_listing_<type>.xml file.

Notes

Reports are used to format attachments to e-mail notifications. Using an embedded style sheet ensures that notification attachments are formatted. If you want to use an external style sheet, you must use an absolute URL to locate the style sheet.

PLACEHOLDERS

The empty elements, such as <ReportHeader/> and <TableCells/>, in TmpRpt_listing_<type>.xml are placeholders. When VIZOR generates a report, it replaces these placeholders with report-specific data.

- <ColumnHeaders/> is a placeholder for the field titles.
  
  The file CaptionCell_listing_<type>.xml contains the HTML template for a field title, where <CellWidth /> and <CaptionCell /> are the width and title from the Report Editor.

- <TableCells/> is a placeholder for the field values.
  
  The file ValueCell_listing_<type>.xml contains the HTML template for a field value.

- <ReportCaption /> is the name given to the report in the Report Editor.

- <ReportHeader /> is the title text from the Page Editor. <ReportHeaderCSS /> is the formatting applied to the title text.

- <PageHeader /> is the header text from the Page Editor. <PageHeaderCSS /> is the formatting applied to the header text.

- <PageFooter /> is the footer text from the Page Editor. <PageFooterCSS />
is the formatting applied to title text.

**NOTES**

To see the generated HTML, open a report in a Web view and then view the page source.
OPTIONAL BEHAVIOURS IN HELPDESK

HelpDesk has some special behaviours or business rules that can be enabled easily.

For example, you can:

- Filter Owners base on selected Work Team
- Filter Owners base on Category, so the skills of the person are matched
- Set the Work Team base on selected Owners

TIMESTAMP FIELDS

Fields like Activity in HelpDesk and Software Licenses Changes to a memo field can be time-stamped. For example, you can time-stamp the changes, comments, notes, and follow-ups that are added to an issue description over time.

Timestamping requires two memo fields, one for input and one for storing the timestamped log. When an issue is saved, the Web view automatically copies the contents of the input field to the log field.

CUSTOMIZING TIMESTAMPING

By default, each time a new entry is added to the timestamp log, a line that looks like this is added:

December 11, 2021 4:38 PM  analyst  (New)
You can customize the way the timestamp log is formatted and automatically stamp other values.

Valid macros:

<table>
<thead>
<tr>
<th>Macro</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{date_time}</td>
<td>The current date and time, on the server</td>
</tr>
<tr>
<td>{user}</td>
<td>The username or logon name of the person submitting the entry</td>
</tr>
<tr>
<td>{user_fullname}</td>
<td>The Full Name of the user submitting the entry</td>
</tr>
<tr>
<td>{activity_entry}</td>
<td>The text added, that is, the actual new entry in text format.</td>
</tr>
<tr>
<td>{substate}</td>
<td>The current Status of the modified record</td>
</tr>
</tbody>
</table>

For example:

    {date_time}                  Added By:  {user_fullname}
ENABLING TIMESTAMPING IN NEW PROJECTS

When you create a new project based on a default VIZOR project, the new project inherits the original timestamping fields and new Web views are created based on the Web views of the original project.

When a new Web view is copied from an existing one, timestamping fields retain their behaviour. However, if a new, blank Web view is created by clicking New View, then additional steps need to be taken to enable timestamping.

To make timestamping work in Web views of the new project, you must update the Html code after control attribute of the Description, Description Log, Activity, and Activity Log fields.

You need to set the Html code after control attribute of the timestamping fields. The required HTML is included below. Note that it is formatted for readability—the attribute itself takes a single line of text.

**Description**

```javascript
<script type='text/javascript'>
    document.write(
        parent.objCustomCode.getCodeAfterField(
            '%fieldname%',
            'mem_29_txtDetailedDescription'
        )
    )
</script>
```

**Description Log**

```javascript
<script type='text/javascript'>
    document.write(
```
parent.objCustomCode.getCodeAfterField('fieldname', '')

</script>

ACTIVITY FIELD

<script type='text/javascript'>
document.write(
    parent.objCustomCode.getCodeAfterField('fieldname', 'mem_56_mem_56_ActivityLog')
)
</script>

Activity Log

<script type='text/javascript'>
document.write(
    parent.objCustomCode.getCodeAfterField('fieldname', '')
)
</script>
ADDING TIMESTAMPING TO A NEW FIELD

Changes to a memo field can be time-stamped. For example, you can time-stamp the changes, comments, notes, and follow-ups that are added to an issue description over time.

Timestamping requires two memo fields, one for input and one for storing the timestamped log. When an issue is saved, the Web view automatically copies the contents of the input field to the log field.

1 Use the Field Editor to create a memo field for input of new data, and a field for displaying the timestamped log. For the input field, clear the Show in Choice Lists and Maintain Revision History check boxes.

2 Find the internal name of the timestamp log field. The internal name looks like mem_58_mem_58_FieldName.

   If you have Microsoft Access, you can find the internal name by opening the project definitions database and looking in the tblDtsFields table. The field name is composed from the values in the nID and tBoundControlName fields:

   
   mem_<nID>_<tBoundControlName>

   The tBoundControlName field includes a repeat of the mem_<nID> string. That is why the string appears twice in the name.

   If you don't have a copy of Microsoft Access, generate a Web view for the project, then get the value of the name attribute of the text area control associated with the timestamp log field. You can find this in the tmplRecord.html file located in the HTML folder of the view:

   CensusWebVD\<project>\<view>\HTML

3 Set the HTML code after control attributes:

   Before you generate a Web view, you must export the two fields and set their HTML code after control attributes.

   a For the input field, enter this HTML code (as a single line of text):

   <script type='text/javascript'>document.write( parent.objCustomCode.getCodeAfterField( '%fieldname%', '<timestamp-log-field-name>' ) ) </script>

   <timestamp-log-field-name> is the field name you found in the previous step. Note that the javascript is case sensitive.

   b For the timestamp log field, enter this HTML code (as a single line of text):

   <script type='text/javascript'>document.write( parent.objCustomCode.getCodeAfterField( '%fieldname%', '' ) ) </script>
TIMESTAMPING WITH ONE MEMO FIELD

You can implement timestamping with just one memo field. To do this, use the **HTML code before control** attribute to insert a text area control above the timestamp log field. This text area control is not tied to any database field. It exists only to allow input, which is copied into the timestamp log field when you save the issue. The advantage to this approach is that you avoid storing an extra memo field in the issue database. The disadvantage is that you cannot use VIZOR Admin or the Web View Editor to customize the input text area (for example, to change the caption or position of the control).

**HTML CODE AFTER CONTROL:**

```html
<script type='text/javascript'>
document.write(parent.objCustomCode.getCodeAfterField('%fieldname%',''));
</script>
```

**HTML CODE BEFORE CONTROL:**

```html
<script type='text/javascript'>
document.write(parent.objCustomCode.getInputMemoField('mem_desc', '%fieldname%'));
</script>
```

**NEW FUNCTION IN CUSTOMCODE.JS:**

```javascript
function getInputMemoField( inputFld, logFld )
{
    var strOutput;
    strOutput="<textarea class='MemoFieldWidth' " name='" + inputFld + '" wrap=physical rows=10 cols=73" onfocus="parent.MemoGotFocus("
```
+ inputFld + "\" ";

strOutput+="onchange=" + inputFld + "\" ";
strOutput+="onkeypress=" + inputFld + "\" "> </textarea><br>

strOutput+="<script type='text/javascript'>

strOutput+="document.write(parent.objCustomCode.getCodeAfterField(" + inputFld + "," + logFld + "))</script>";

strOutput+="/script>";

return strOutput;
}

NEW DECLARATION IN CUSTOMCODE.JS:

// Declaration of the public functions

this.getInputMemoField=getInputMemoField;
CHANGING THE FORMAT OF EMAIL ATTACHMENTS IN AUTOMATED NOTIFICATIONS

The **Detailed** choice in the **Include** list of the Notification Editor attaches a report to the notification message. This report includes most fields for an issue.

If you do not use Crystal Reports, attachments can be HTML files or text files. If you do use Crystal Reports, attachments are RTF files by default. You can change this to be PDF, text, or a number of other formats. See *Viewing Reports* for more information on using Crystal Reports for listing reports.

To change the format of a notification attachment:

1. Open the project definitions database.

2. In **tblMailContents**, change the **nFormatType** for the attachments. (Attachments have **nType** = 3 in **tblMailContents**).

**FORMAT TYPE CONSTANTS:**

<table>
<thead>
<tr>
<th>Format Type</th>
<th>Value</th>
<th>Description</th>
<th>Constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>NoFormat</td>
<td>0</td>
<td>Excel40</td>
<td>20</td>
</tr>
<tr>
<td>CrystalReport</td>
<td>1</td>
<td>Excel50</td>
<td>21</td>
</tr>
<tr>
<td>DataInterchange</td>
<td>2</td>
<td>Excel50Tabular</td>
<td>22</td>
</tr>
<tr>
<td>RecordStyle</td>
<td>3</td>
<td>ODBC</td>
<td>23</td>
</tr>
<tr>
<td>RichText</td>
<td>4</td>
<td>HTML32Standard</td>
<td>24</td>
</tr>
<tr>
<td>Comma Separated Values</td>
<td>5</td>
<td>Explorer32Extend</td>
<td>25</td>
</tr>
<tr>
<td>TabSeparatedValues</td>
<td>6</td>
<td>NetScape20</td>
<td>26</td>
</tr>
<tr>
<td>CharSeparated Values</td>
<td>7</td>
<td>Excel70</td>
<td>27</td>
</tr>
<tr>
<td>Data Format</td>
<td>Page</td>
<td>Interface</td>
<td>Row</td>
</tr>
<tr>
<td>-------------------</td>
<td>------</td>
<td>--------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Text</td>
<td>8</td>
<td>Excel70Tabular</td>
<td>28</td>
</tr>
<tr>
<td>TabSeparatedText</td>
<td>9</td>
<td>Excel80</td>
<td>29</td>
</tr>
<tr>
<td>PaginatedText</td>
<td>10</td>
<td>Excel80Tabular</td>
<td>30</td>
</tr>
<tr>
<td>Lotus123WKS</td>
<td>11</td>
<td>PortableDocFormat</td>
<td>31</td>
</tr>
<tr>
<td>Lotus123WK1</td>
<td>12</td>
<td>HTML40</td>
<td>32</td>
</tr>
<tr>
<td>Lotus123WK3</td>
<td>13</td>
<td>CrystalReport70</td>
<td>33</td>
</tr>
<tr>
<td>WordForWindows</td>
<td>14</td>
<td>ReportDefinition</td>
<td>34</td>
</tr>
<tr>
<td>Excel21</td>
<td>18</td>
<td>ExactRichText</td>
<td>35</td>
</tr>
<tr>
<td>Excel30</td>
<td>18</td>
<td>XML</td>
<td>36</td>
</tr>
</tbody>
</table>
ATTACHING INFORMATION

By default, the Revision Record and Summary are included in the body of the e-mail notification message. You can include this information as separate attachments.

To do this, open the project definitions database and in tblMailContents change the nType to 3. nType determines where the content is put in the e-mail message.

<table>
<thead>
<tr>
<th>nType</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Subject</td>
</tr>
<tr>
<td>2</td>
<td>Body of e-mail message</td>
</tr>
<tr>
<td>3</td>
<td>Attachment</td>
</tr>
</tbody>
</table>
ADDING CUSTOM MAIL CONTENTS

In the Notification Editor, the Include list specifies what to include in an e-mail notification message. You can add items to this list. The items can be used as the message subject, inserted in the message body, or included as attachments to the message.

To add an item to the Include list of the Notification Editor:

1. Define a function in the macroXX.bas file.

   This function should return the content you want to include in the e-mail message.

   macroXX.bas is located in the project sub-folder of the ConnectServer folder (for example:
   ConnectServer\vit\macro70.bas)

2. Open the project definitions database, and in the tblMacros table, add a row for the new function.

   tName is the name of the macro.

   tFunctionName is the name of a function defined in macroXX.bas.

   nType specifies what arguments the function takes:

   1 = No Arguments
   2 = Issue Record
   3 = Revision history
   4 = Expression

3. In the tblMailContents table, add a row for the macro, using the same tName as in tblMacros.

   nType specifies where to include the contents:

   1 = subject
   2 = body
   3 = attachment

   nFormatType specifies the format:

   4 = rtf
   8 = text
   14 = word
   31 = pdf
   32 = html40
When nType = 2, nFormatType must be 8 (text), otherwise the contents appears as a plain text e-mail message that contains RTF or PDF, which is never sent. This will hold up all your notifications.
EXAMPLE MACROS

FUNCTION TO RETURN A STRING:

Public Function GetCustomSubject(oCensusApplication, lngDtsRecordID, oExpression, recRevisionHistory)
GetCustomSubject = "Your subject goes here."
End Function

FUNCTION TO RETURN THE CONTENTS OF A TEXT FILE:

Public Function GetCustomMsgBody( oCensusApplication, lngDtsRecordID, oExpression, recRevisionHistory )

Dim fsObj
Dim txtStreamObj
Dim emailbody
Dim strFileName

strFileName = "C:\Messages\msg.txt"

Set fsObj = CreateObject("Scripting.FileSystemObject")

Set txtStreamObj = fsObj.OpenTextFile(strFileName, 1, False, False)

emailbody = txtStreamObj.ReadAll

txtStreamObj.Close

GetCustomMsgBody = emailbody
End Function
FUNCTION THAT TAKES THE REVISION HISTORY AS AN ARGUMENT AND EXTRACTS A FIELD VALUE:

Public Function GetSubject(oCensusApplication, lngDtsRecordID, oExpression, recRevisionHistory)
Dim lngLastRevisionNumber
Dim rstValue
Dim variableName

If oCensusApplication Is Nothing Then
Exit Function
End If

If recRevisionHistory Is Nothing Then
Exit Function
End If

' get the last revision number
GetRevisionNumberRange recRevisionHistory, 0, _
lngLastRevisionNumber

' Get the value for the field from the table
' of the last revision in the given set.
Set rstValue = oCensusApplication.CurrentProject._
DataStores.Item(32). _
GetConnection(1).Execute(_
"SELECT tBriefDescription FROM tblDts_History_
WHERE nID=" & lngDtsRecordID _
& " AND nRevisionNumber=" _
& lngLastRevisionNumber, , 1)

' Build subject line that looks like:
' HELPDESK [Ticket 37]PROJECT [Issue 37] - Cannot print PDF file
If Not rstValue.EOF Then
If Not IsNull(rstValue.Fields(0).Value) Then
GetSubject = "HELPDESK [Ticket PROJECT [Issue " &_
lngDtsRecordID & "] - " &
rstValue.Fields(0).Value
End If
End If
End Function

In the **SELECT** statement, **tBriefDescription** is the internal name for the **Summary** field. You can find the internal field names in the **tName** column of the **tblDtsFields** table in the project definitions database.

---

**RELATED TOPICS**

- Changing the Format of Attachments
- Attaching Information
- Adding Custom Mail Contents
- Adding Notification Reports
VIZOR can use reports to format information included in e-mail notifications. For example, the Detailed and Summary items are formatted by reports. You can define new reports and add them to the list of items that can be included in an e-mail notification message.

To add a new report for notifications:

1. In VIZOR Admin, use the Report Editor to define a new listing report.
2. Save and preview the report.
3. Exit VIZOR Admin.
4. Open the project definitions database.
5. Open the tblSystemCustomReports table, find the record for the report you just created, and get the nID value.
6. Open the tblMailContents table and create a new record.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nID</td>
<td>Next available ID number for a record in the tblMailContents table.</td>
</tr>
<tr>
<td>tName</td>
<td>Name displayed in the Include list of the Notification Editor.</td>
</tr>
</tbody>
</table>
| nType       | 2 = include in message body  
               3 = attachment                                                             |
| tFunction   | The GenerateReport function takes care of generating the report for the notification message. |
| tArguments  | `<nID>.10`, where `<nID>` is the ID of the report in tblSystemCustomReports. |
| nFormatType | 4 = rtf  
               8 = text  
               14 = word                                                              |
The report is now available in the **Include** list of the Notifications Editor.

If you’re using Crystal Reports for your listing reports, you’ll have to create a Crystal Report report file (.rpt) for the new notification report.

**TO CREATE AN .RPT FILE FOR YOUR NOTIFICATION REPORT:**

1. View the report in a Web view.

   *This creates an .rpt file in the CensusWebVD\<project>\_\<view>\Reports folder. For example:*

   \Program Files\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\HelpDesk_HelpDesk\Reports

2. Copy the .rpt file to the ConnectServer\<project>\Reports folder. For example:

   \Program Files\Vector\ConnectServer\HelpDesk\Reports

3. Rename the file by removing **portrait** (or **landscape**) from the .rpt file name.
SUBMIT-ONLY VIEWS WITHOUT PERSISTENT COOKIES

Submit-only views use persistent cookies to store contact information, such as the user's name and e-mail address. You can set up submit-only views so that submitters do not have to enter their contact information. Consequently, the submit-only views use session cookies only.

To do this, you enter the contact information into VIZOR yourself, and then provide each user with their own specific URL.

To set up submit-only views that do not use persistent cookies:

1. Use VIZOR Web Admin to create contacts if the submit-only view is intended to allow people without VIZOR to use it.

2. Send a personal URL for the submit-only view to each person who needs to submit issues.

The personal URL for a contact looks something like this:

http://server/vit/logon.asp?

?View=BugTrk%2FSSubmit%20Issue&CookieInfo13=14;Emily

The first part of the URL is the URL for the VIZOR logon page. The second part of the URL (in bold) is the query string. The View= part of the query string specifies the project and view:

View=<project>%2F$view

where:

%2F is the escape sequence for a forward slash (/).

CookieInfo13= specifies the user's contact information:

CookieInfo13=<User ID>;<Personal Name>

<User ID> is the numeric ID assigned to the contact or user. You can find this value in the tblUser table of the Users database. <Personal Name> is the name of the contact or user.

Spaces in the project, view, and personal name must be replaced with the escape sequence %20.
You can customize the look of a Web view by editing the CensusMain.css style sheet in CensusWeb\Views\CensusWebVD\Theme\css.

Put a copy of your customized style sheet in the CUSTOMIZEDFILES folder. For example, in #AllProjects#\Theme\css or #Project#\vit\Theme\css.

REPLACING LOGOS

To replace the logo, edit the td.Logol and div.Logo rules in CensusMain.css. The background-image property specifies the logo image.

Note that VIZOR uses two versions of the logo, logol for light backgrounds (Web view page) and logo for dark backgrounds (logon page).

/* logo on a Web view page */
td.Logol
{
    background-image:url(../images/logos/logol.gif);
    background-repeat:no-repeat;
    display:block;
    left:27px;
    width:200px;
    height:60px;
    position:absolute;
}

/* logo on the VIZOR logon page */
div.Logo
{
    background-image:url(../images/logos/logo.gif);
    background-repeat:no-repeat;
    display:block;
    left:27px;
    width:200px;
    height:60px;
    position:absolute;
    b-order:3 orange solid;
}
View Toolbar

The View toolbar is the top part of a Web view, where the logo and the Help, Log Off, and other buttons are displayed.

`body.TopToolBarBody` sets the background color.

`td.Logol` sets the logo image displayed in the toolbar.
SUMMARY LIST TOOLBAR

The toolbar has three parts: the top (with the Query, Sort, and Layout lists), the middle (the Ad-hoc Query Editor), and the bottom (used for bottom rounded corner images).

For the top part:

- `body.ToolbarBody` sets the background color.

This class is also used by many dialogs, such as Attach File, History, and Options.

- `ToolbarLeft`, `ToolbarCenter`, and `ToolbarRight` set the background images. `ToolbarCenter` also sets the font properties for the captions.

For the middle part:

- `body.ToolbarM` sets the background color.

- `ToolbarMLeft`, `ToolbarMCenter`, and `ToolbarMRight` set the background images. `ToolbarMCenter` also sets the font properties for the captions.

For the bottom part:

- `body.ToolbarB` sets the background color.

- `ToolbarBLeft`, `ToolbarBCenter`, and `ToolbarBRight` set the background images.
SUMMARY LIST HEADER

The appearance of the heading row for the Summary List is controlled by:

- `headerSummaryList`
- `HeaderSummaryListCellCenter`
- `HeaderSummaryListCellLeft`
- `HeaderSummaryListCellRight`

`headerSummaryList` sets properties for the entire table. The three `HeaderListSummaryCell` classes are used to set background images. If you don’t want to use images, you can comment out the `HeaderListSummaryCell` classes and use `headerSummaryList` to set the background and text colors.
SUMMARY LIST

**body.SummaryListBody** formats the page background and text.

The appearance of links in the Summary List are controlled by **body.SummaryListBody a:link** and **body.SummaryListBody a:visited**.

To change the shading of the rows in the list, edit these CSS classes. The two sets of CSS classes allow for rows with alternating shading.

- **SummaryList1**
- **SummaryList1Hover** (for Internet Explorer)
- **SummaryList1HoverN** (for Netscape)
- **SummaryList2**
- **SummaryList2Hover** (for Internet Explorer)
- **SummaryList2HoverN** (for Netscape)
TABS

The appearance of the selected tab is controlled by:

- TabsLeftCornerUp
- TabsBackgroundUp
- TabsRightCornerUp

The appearance of the unselected tabs is controlled by:

- TabsLeftCornerDown
- TabsBackgroundDown
- TabsRightCornerDown

For example, you could replace the background images or use solid colors instead of images.

To customize the font used for the text on the tabs, edit TabsBackgroundDown and TabsBackgroundUp.

The area to the right of tabs (where the next/previous page controls are located) can be styled with tabsBody (the background color) and tabsBorder (the bottom border), and PageNavigation (the Page X of Y text).

To put a dividing border between the Summary List and the tab area, use border-top with tabsBody.
Each tab in a Web view is a form that contains a table. The HTML looks like this:

```html
<body class="RecordBody">
    <form name="Record">
        <table class="RecordTab">

So, for example, to change the background color of the tabs, edit the `body.RecordBody` class in CensusMain.css.

To apply styles to the form element, you can use this selector in the style sheet:

`body.RecordBody form { ... }`
FIELD CAPTIONS

Field captions in a Web view are formatted with the CSS classes `normalfield`, `requiredfield`, and `disabledfield`. 
FORM ELEMENTS

The CSS class applied to a form element is specified by the **CSS Class** field attribute in the Web View Editor. You can customize the default CSS classes or define your own and apply them to fields through the Attribute Editor.

The default CSS classes for form elements are **TextBoxWidth**, **ComboBoxWidth**, and **MemoFieldWidth**, **InputAttachment** (for the **Attachments** box), and **InputCalendar** (for date fields).
COMMAND BAR

The command bar is the bar at the bottom of the page that contains the Issue box and the New, Save, Cancel, and Print buttons.

`body.CommandBarBody` sets the background color for the command bar. You can set the text color here (except for the text in the message area).

`CommandBarBLeft`, `CommandBarBCenter`, and `CommandBarBRight` specify the background images for the command bar.

`CommandBarMsgLeft`, `CommandBarMsgCenter`, and `CommandBarMsgRight` specify the background images for the message area (For example: Ready. Click New to create a new issue.) of the command bar.

`ControlsCaptionDark` sets the style for the Current Issue label.

`CurrentRecord` and `CurrentRecordHover` set the style for the Current Issue text box.
ABOUT BRANDING DIALOGS

Dialogs are pages that users open by clicking a button. This includes the Attachments, Reports, Revision History, Password, Options, and Contacts dialogs.

Most of the dialogs use the same style sheet as the Web view. However, the Contacts and Password dialogs use the CensusMain.css style sheet found in CensusWebVD\Admin\THEME\css.
COMMON STYLES FOR ALL DIALOGS

`body.toolbarBody` sets the background color for the dialog pages (except for the Reports dialog, which uses `body.ReportsBody`).

The box with rounded corners is a set of background images specified by these classes:

- `BoxTLeft`, `BoxTCenter`, and `BoxTRight`
- `BoxMLeft`, `BoxMCenter`, and `BoxMRight`
- `BoxBLeft`, `BoxBCenter`, and `BoxBRight`
ATTACHMENTS DIALOG

`body.toolbarBody` sets the background color for the page.

`DialogLabel` formats the captions.

`InputFile` and `InputFileHover` format the text boxes.

The list of attached files is displayed in a table. `HeaderSummaryListCellCenter` formats the heading row (where the `File Name` and `Remove` captions are displayed).

`SummaryList1` and `SummaryList2` format the list of files.

`DialogLabel` formats the file names.
REPORTS DIALOG

`body.ReportsBody` sets the background color for the page.

The appearance of the tabs is controlled by the same CSS classes that apply to the tabs in a Web view (see Tabs).

The **Report Name** caption uses the `normalfield` class.

The `<select>` element that lists the available reports uses the `ReportList` class.

The **Layout:** and **Viewer Type:** captions use the `AdminNormalTextDarkBG` class. The corresponding `<select>` elements do not use a CSS class, but you can use their IDs (LayoutType and ViewerType) with ID selectors in the CSS file.
REVISION HISTORY DIALOG

This dialog uses only the common styles.
OPTIONS DIALOG

**body.toolbarBody** sets the background color for the page.

Captions use the **normalfield** class.

Form elements (such as `<input>`) are in a `<TD>` that uses the **normalfield** class, but the form elements themselves have no class.
CONTACTS DIALOG

This dialog uses the CensusMain.css style sheet in CensusWebVD\Admin\THEME\css.

*body.RecordBody* sets the background color for the page.

The caption for the *Display* list uses the *DialogLabel* class, and the *<select>* element uses *AdminComboBoxWidth*.

On the input form for contact information, the captions use *requiredfield* and *DialogLabel*. The form elements all use *AdminComboBoxWidth*.
PASSWORD DIALOG

This dialog uses the CensusMain.css style sheet in CensusWebVD/Admin/ THEME/css.

**body.toolbarBody** sets the background color for the page.

**normalfield** formats the captions **Old Password**, **Password**, and **Confirm Password**.

**AdminTextBoxWidth** and **AdminTextBoxWidthHover** format the text boxes.

**AdminNormalTextDarkBG** formats the **Password can contain a maximum of 14 characters** message.
ABOUT BRANDING THE LOGON PAGE

The heights of some of the table cells are hard-coded in CensusWebVD\logon.asp.

**LogonBody** sets the background color for the page.

The images and background colors for the box with rounded corners are set by these classes:

- `Logon-t-left, td.Logon-t-center, div.Logon-t-right`
- `Logon-m-left, div.Logon-m-center, td.Logon-m-right`
- `Logon-b-left, td.Logon-b-center, div.Logon-b-right`

Note the mix of **div** and **td** elements. If you want to replace the images with colors and borders, set the left and right classes to the background color and use the center classes to define your border.

**div.Logo** inserts the VIZOR logo.

**div.Logon-decor-img** inserts the keyboard image with the orange border.

**LogonForm** positions the logon form (the **Logon Name** and **Password** text boxes).

**div.LogonField** and **div.PwdField** position the form elements.

**div.LogonCaption** formats the **Logon Name** and **Password** labels.

**input.LogonInput** and **input.LogonInputHover** format the text boxes.

**a.LogonState1** and **a.LogonState1:hover** set the images used for the **Logon** button.

**HelpState1** and **HelpState1:hover** set the images used for the **Help** button.
VALIDATE LOGON PAGE

The ValidateLogon page displays the available views. With a few exceptions (documented below), this page uses the same styles as the Logon page.

The heights of some of the table cells are hard-coded in CensusWebVD\validatelogon.asp.

ExitState1 and ExitState1:hover specify the images used for the Log Off button.

div.ViewList-m-center is used instead of div.Logon-m-center.

div.ViewList-decor-img is used instead of div.Logon-decor-img to display the keyboard image with the orange border.

div.ViewLinks positions and sizes the area used to display the list of available views. This class also adds the vertical orange bar.

div.LogonCaption formats the Click the view you want to open string.

ViewListCaption formats the DIVs that contain the project names.

ViewList-Link, ViewList-Link:link, ViewList-Link:visited, and ViewList-Link:hover format the view names, which are hyperlinks.
ADDING ROWS

By default, the timesheet project allows users to track weekly time spent for up to four different projects. If you need to track time for more than four different projects or tasks, you can add more rows to the timesheet.

Step 1: Create fields in the Field Editor

1. Create a new choice list for selecting projects. Copy the Project1 field and name it Project5.

2. Create the input fields for the days of the week.
   a. Copy the P1HrsMon field and name it P5HrsMon.
   b. Copy P5HrsMon and name it P5HrsTue.
   c. Copy P5HrsTue and name it P5HrsWed.
   d. Continue until you have input fields for all seven days of the week.

3. Create a field to hold the weekly total. Copy Proj1TotalWkHrs and name it Proj5TotalWkHrs.

4. Click Apply to add the fields to the project.

Step 2: Export the new fields to the view

1. In the Web View Editor, click the timesheet view in the Project / View list.

2. Under Fields, click the last field (Product4) in the Export to View list. Click Attributes, and delete the value of the Html code after control attribute.

3. Move the new fields from the Available list to the Export to View list.

   The new fields are added to the end of the Export to View list. The order of the fields does not matter.

4. Click the last field in the Export to View list. Click Attributes, and set the value of the Html code after control attribute to "-->".

Step 3: Edit timesheet.js

1. Open timesheet.js in your favorite text editor. You can find this file in the folder:

   CensusServer\CensusWeb\CUSTOMIZEDFILES\#Project#Timesheet\#AllWebViews#\Js

   This is the file to edit if you want to add a row to all Web views of your timesheet project. If you want to add rows to only certain Web views, you’ll need to create a new folder. For example:

   CensusServer\CensusWeb\CUSTOMIZEDFILES
2 At the top of the file, declare and initialize a variable that holds the ID of the new row:

```javascript
var PROJ_FIVE_ID=4;
```

3 In the `WriteTimesheetGrid()` function, create a new array that holds the row information, and store this new array in `m_arrTimesheet`:

```javascript
m_arrTimesheet[PROJ_FIVE_ID]=new Array("cbo_97_cbo_97_Project5"
+ INNER_ARRAY_SPLITTER + INNER_ARRAY_SPLITTER+ strProjComboOptions,
"nbr_98_nbr_98_P5HrsMon",
"nbr_99_nbr_99_P5HrsTue",
"nbr_100_nbr_100_P5HrsWed",
"nbr_101_nbr_101_P5HrsThu",
"nbr_102_nbr_102_P5HrsFri",
"nbr_103_nbr_103_P5HrsSat",
"nbr_104_nbr_104_P5HrsSun",
"nbr_105_nbr_105_Proj5TotalWkHrs"
+ INNER_ARRAY_SPLITTER + CONTROL_TYPE_TOTAL);
```

4 Use the ID of the new row (PROJ_FIVE_ID) as an index into the `m_arrTimesheet` array.

In the new array, specify the names assigned to form controls in the generated HTML. These names are based on the `tBoundControlName`, which you can find in the `tblDtsFields` table of the project definitions database. For example, if the `tBoundControlName` is `cbo_97_Project5`, then the form control name is `cbo_97 cbo_97 Project5`.

*Add a call to GetTimesheetProjRow() for the new row. Put this call before the call to GetTimesheetDayTotalRow().*

// Calls to GetTimesheetProjRow() for previous rows

```javascript
strHTML+=m_oTimesheet.GetTimesheetProjRow(m_arrTimesheet[PROJ_FIVE_ID]
);
```

// call to GetTimesheetDayTotalRow()
Step 4: Update layouts, queries, sorts, and reports

Any layouts, queries, sorts, or reports that use values from the rows in a timesheet must be updated.

For example, the Current Issue - Detailed report is used to print the current timesheet. If you don’t update this report, it won’t show the rows you added.

Step 5: Regenerate the Web views

If you get javascript errors when you try to open the Web view, log off and fix timesheet.js. You don’t need to regenerate the Web view, but you must copy timesheet.js from the CUSTOMIZEDFILES folder to the Web view folder.
CHANGING THE TIMESHEET STARTING DAY

The weekly timesheets can start on any day of the week. By default, the weekly timesheets start on Monday.

To change the timesheet starting day:

1. In the Web View Editor, click the timesheet view in the Project / View list.

2. Under Fields, click the last field before the fields that make up the actual timesheet. By default, this is the Weekly Total Hours field.

3. Click Attributes and then click the attribute value of the Html code after control attribute. This should take you to the end of the line of text, where you'll see the START_MONDAY constant as the last argument to a function.

4. Change this to the new starting day. Use one of these constants:

START_MONDAY
START_TUESDAY
START_WEDNESDAY
START_THURSDAY
START_FRIDAY
START_SATURDAY
START_SUNDAY
CREATING A TIMESHEET

When you create a new project based on the Timesheet project, you must add the timesheet to a Web view of the new project. After that, you can copy the Web view to create more views of the new project.

To add a timesheet to a Web view:

1. Export the fields displayed above the timesheet (by default: Employee, Weekly Start Date, and Weekly Total Hours).

2. Enter the following HTML into the HTML code after control attribute of the last field currently in the Export to View list.

   Instead of typing in this HTML, you can copy the HTML code after control value from the Weekly Total Hours field in the original Timesheet / Timesheet Web view.

   `<script type="text/javascript" src="../js/Timesheet.js"></script>
   <select name="TS_cbo_vals" class="HiddenObject"> <WC@53></WC@53>
   </select><script>WriteTimesheetGrid(escape (document.Record.TS_cbo_vals.innerHTML),START_MONDAY);</script>

3. Export the timesheet fields. The order does not matter.

   DailyTotalMon, ..., DailyTotalSun (7 fields)
   P1HrsMon, ..., P1HrsSun (7 fields)
   P2HrsMon, ..., P2HrsSun (7 fields)
   P3HrsMon, ..., P3HrsSun (7 fields)
   P4HrsMon, ..., P4HrsSun (7 fields)
   Proj1TotalWkHrs, ..., Proj4TotalWkHrs (4 fields)
   Project1, ..., Project4 (4 fields)
4 Enter the string "--->" (without the quotation marks) into the HTML code after control attribute of the last field in the Export to View list.
CHAPTER 43 - DATABASES
OVERVIEW

VIZOR supports databases in multiple versions of SQL Server.

By default, SQL Server databases are located on the SQL Server computer in the DATA folder or the default folder specified by the SQL Server administrator. By default, Jet/Access databases are stored in the ConnectServer folder (for example, C:\Program Files\Vector\ConnectServer)

Project databases

A project includes two main databases:

- A database of records of the main entity stored in that project (assets, tickets, people, etc.) and their revision histories.

- A database of definitions, which contains defined business rules, queries, sorts, layouts, reports, notifications, fields, and tabs available in the project.

Users database

In addition to the project databases, there is a database of users, contacts, employees and companies. The users database is shared by all projects.
DAT DATABASE

SQL Server

Issues are stored in the `<project>01_Dat` database, where `<project>` is the name of the VIZOR project. The database consists of:

- `<project>01_Dat.mdf`
  
  The master data file (MDF) of the database.

- `<project>01_Dat_log.LDF`
  
  Log file that holds the log information used to recover the database. There must be at least one log file for each database, although there can be more than one.

Microsoft Access

Issues are stored in the file `<project>01.dat`, where `<project>` is the name of the VIZOR project.

MAIN TABLES

**tblDts**

Stores most of the information entered for an issue. This includes most of the fields on the Overview, Description, and Detail tabs, as well as the information entered on any custom tabs added to the project.

**tblFixInformation**

In previous releases of VIZOR, new fields added to the Resolution tab were stored in tblFixInformation. The default fields are stored in tblDts.

Any new fields added to the Resolution tab are stored in tblDts. Stores fix-related information entered on the Fix tab.
tblAttachments

Stores any files attached to an issue.

tblRevisionHistory

Stores the revision history for issues.
DEFINITIONS DATABASE

SQL Server

The project definitions database is named `<project>02_DEF`, and consists of these files:

- `<project>02_DEF.mdf`
- `<project>02_DEF_log.LDF`

Microsoft Access

The project definitions database is named `<project>02.def`, where `<project>` is the name of the VIZOR project.

MAIN TABLES

tblDtsFields

Defines the fields available in a VIZOR project. The Field Editor in Vizor Admin provides a user interface for editing most of the columns in this table.

In tblDtsFields, the tWhere column specifies a Where clause that controls the contents of a choice list. The VIZOR project uses the Where clause to build the Contact, Owner, and Submitter choice lists.

For example, this Where clause removes macros (such as `<User>`) and contacts from the Owner list:

```
Where (([nID] >= 0 And [tName] <> '') Or [tName] = '<User>') Or [fOriginator] = 0
```
• The \([\text{nID}] \geq 0\) condition removes the macros defined in \text{tblUser}:

<table>
<thead>
<tr>
<th>User ID</th>
<th>User Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>&lt;Contact&gt;</td>
</tr>
<tr>
<td>-3</td>
<td>&lt;User&gt;</td>
</tr>
<tr>
<td>-2</td>
<td>&lt;Previous Owner&gt;</td>
</tr>
<tr>
<td>-1</td>
<td>&lt;Owner&gt;</td>
</tr>
</tbody>
</table>

The user with \(\text{nID} = 0\) is the \(<\text{None}>\) macro.

• The \(\text{fOriginator} = 0\) condition removes contacts, so that the list contains users only.

• \text{tName} is the name of the user.

\text{tblState}

Specifies the list of choices for the \text{State} field. The \text{State} field is a read-only field that is set based on the \text{Status} field.

\text{tblSubState}

Specifies the list of choices for the \text{Status} field. Each possible substate corresponds to a possible \text{State} value (\text{Open} or \text{Closed}).

\text{Choice List Tables}

A choice table specifies the possible values for a choice list field. Each row in a choice table includes an \text{nID}, a \text{tName} (the choice text), and optionally, an \text{nChoiceID} (for non-alphabetical choice lists).

In the issue database, multi-choice fields store a semi-colon separated list of the \text{tName} values (the choice text strings), not the \text{nID} values.
All VIZOR projects share the same database of users. The users database also stores global choice lists.

**Microsoft Access**

The user database is named `users.mdb`.

**SQL Server**

The user database is named `USERS_MDB`, and consists of these files:

- `USERS_MDB.mdf`
- `USERS_MDB_log.LDF`

**MAIN TABLES**

**tblUser**

Lists the users and contacts. Users have logon names and passwords. Contacts are people who report issues, but do not have a logon account.

If you add a field to the `Origin` tab, the field is added to `tblUser`, not `tblDts`. The `Origin` tab is a read-only tab that displays user and contact information. The user and contact information is actually entered in VIZOR Web Admin (Security tab). This allows user and contact information to be entered once for all issues, instead every time for each issue.
GLOBAL DATABASES

These databases are shared by all projects:

- **CensusWeb**
  
  CENSUSWEB_MDB in SQL Server
  
  Stores Web view definitions. Used by the Web View Editor.

- **Licenses**
  
  LICENSES_MDB in SQL Server
  
  Stores system information, list of projects, features, licenses.

**Advanced Topic**

DATASTORES

DataStores are databases and other sources of data such as XML files.

Some advanced customizations require working with datastore or database IDs. These are usually entered in tables and scripts.

Global Datastores are defined in the censession.xml file.

Project DataStores are defined in tblProjectDS [Licenses_mdb].

The following is a list of data store types:

<table>
<thead>
<tr>
<th>DataStore Type</th>
<th>ID</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ClientDB</td>
<td>1</td>
<td>Internal use</td>
</tr>
<tr>
<td>Database</td>
<td>Size</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Admin</td>
<td>2</td>
<td>Admin Tool database</td>
</tr>
<tr>
<td>Library</td>
<td>4</td>
<td>Admin Tool Library (AdminLib) database</td>
</tr>
<tr>
<td>Licenses</td>
<td>8</td>
<td>Licenses_mdb</td>
</tr>
<tr>
<td>Users</td>
<td>16</td>
<td>Users_mdb</td>
</tr>
<tr>
<td>Dat</td>
<td>32</td>
<td>Project DAT database of the project in context</td>
</tr>
<tr>
<td>Def</td>
<td>64</td>
<td>Project DEF database of the project in context</td>
</tr>
<tr>
<td>Usr</td>
<td>128</td>
<td>Project USR database of the project in context</td>
</tr>
<tr>
<td>Web</td>
<td>256</td>
<td>Census_Web database of the project in context</td>
</tr>
<tr>
<td>SystemDB</td>
<td>512</td>
<td>Security databases for JET logons Censys.mdw</td>
</tr>
<tr>
<td>InventoryDB</td>
<td>1024</td>
<td>Integration with Inventory</td>
</tr>
<tr>
<td>SecuredDB</td>
<td>65536</td>
<td>Internal use</td>
</tr>
<tr>
<td>CenAuth</td>
<td>131072</td>
<td>Reserved authentication use</td>
</tr>
</tbody>
</table>
ARCHIVING DATA

In VIZOR, you can easily archive old records for any of the VIZOR projects (databases).

Over time, your VIZOR system will accumulate data and, depending on the activity and the needs of the organization, the data can be significant.

You may want to archive specific records for:

- Reduce 'noise', if you think having these records ‘active’ do not add much value to the operations.
- Improve performance. Any database performs better with less data. Running queries, reports, saving records and applying business rules execute faster with less records.
- Regulatory Compliance. Your organization may need to archive records after specific time, or after specific events.

Archiving involves a target VIZOR Project, which database will receive the records.

To archive records, go to Web Admin > Options.

Select the VIZOR project you want to archive (the source).

Click on Archive Project Data.
Select a target project to archive the records into. VIZOR only allows you to select a valid project. Valid projects are projects that were created from the source project. You can use the default project/databases IncidentsArchive, ProblemsArchive, AssetsArchive, etc.

DETERMINING WHAT RECORDS TO ARCHIVE

Select a named query to determine what records to archive. The records results of the query will be archived, and, if selected, deleted from the source project.

You may use some default queries created specifically for this purpose, such as “Incidents to Archive” and “Problems to Archive”. By default, these queries archive records that are 2 years or older but you can change the exact conditions by changing this query in the Admin > Project > Query Editor.
BACK UPS

You should regularly back up your VIZOR databases. Besides backing up all the issue data entered into the system, you should also (though perhaps less frequently) back up the files and databases that define your projects and Web views. Backups are part of a contingency/disaster recovery plan; this document does not cover the contingency or disaster recovery plan as it is particular to each organization policies and recovery needs.

WHAT AND WHEN TO BACK UP

Back up frequency depends mainly on the type of data. First of all we have to distinguish two different types of data:

1. Records Data, like assets, tickets, licenses, Users/Contacts, etc.
2. System Data (information, schema, definitions)

It is recommended that these backups be done every 24 hours by default. It is up to the organization to determine the exact backup strategy and frequency.

BACKING UP RECORDS DATA

This information is **dynamic**, since it changes every time a VIZOR user adds, updates, or deletes a record. The frequency of your backups and types of backups performed is determined largely by the needs of your organization.

You should tailor your backup strategy to the needs of your organization. For example, consider how much data and how quickly it should be recovered in the event of a disk failure.

Daily backups may be enough, but you may need to perform more frequent differential backups if you need to recover up to the last hour for any disaster event.
BACKING UP SYSTEM DATA

System Data, also known as the System Definitions, are the information that define the structure of data, business rules, reports, notifications, etc. This information is normally hidden from the user but allows the VIZOR system to function. Examples of system data are:

- List of Fields used in a VIZOR project.
- List of Fields available in each Web View UI, with permissions per user.
- Template and conditions of Email Notifications. What to send and when.
- Reports (with no data; templates).
- Workflows and Business Rules.
- List of VIZOR projects are available in a VIZOR Server.
- Location of the databases used by a VIZOR project.

This information is usually changed through VIZOR Administrator Tools, like VIZOR Admin and the Web View Editor. This information is usually static, since once the VIZOR project is set up it rarely changes.

Power Customizations (customizations not done using the administrator editors) are usually static, too. Changes made to the Web files and scripts do not change often. These files are typically located under the CustomizedFiles folder (please refer to the documentation for more details about this).

HOW TO BACK UP VIZOR DATABASES (DATABASES IN SQL SERVER)

In Vizor, Records and System Data are in the SQL Server and some System data is in other type of files, like xml files. You can do a hot backup, which can be done while the system is being used, and a cold backup that requires all users to be logged off.
1. **Live or hot backup using SQL Server tools**

A live backup is done even if the files to be backed up are in use. This is ideal for 24 hour a day operations. In this scenario, the VIZOR Administrator has to use some database specific tools for backing up.

**Back up SQL Server Databases:**

In this scenario, Issues, Users/Contacts and System Data are in SQL Server databases. Use the SQL Server built-in back up utility. Select the VIZOR databases like

- Project01_dat
- Project02_def
- Users_mdb
- Licenses_mdb
- CensusWeb_mdb, etc.

Please refer to Microsoft SQL Server’s documentation for more information.

2. **Cold backup not using SQL Server tools**

A cold backup is a backup that works with the databases as files. This process is limited and not recommended as the only backup, if implemented. It involves copying the files to a disk or tape that is considered safe and secure to be an offline backup media.

In this scenario, the VIZOR administrator has to ensure the files and databases are **not being used** before the backup process starts because, as with any other application, files in use are not backed up.

SQL Server databases are not backed up as such, but as regular files, backing up the *.mdf and *.ldf files, which are the physical files of SQL Server databases.

In order to be able to copy these files, SQL Server has to be not using the files. That is, either the SQL Server Service is stopped or the database is temporarily detached from the SQL Server (while the backup is in done).
In some cases, you may want to keep a complete copy of the VIZOR Server and not only the databases (typically contained in SQL Server databases). This complete backup of the system could be used for cloning a server or for disaster recovery, particularly useful if a system has power customizations.

In order to do a complete backup of the system:

**Note:** In the following paths, use "Program Files" for 32 bit operating systems and use "Program Files (x64)" for 64 bit operating systems.

1. **Back up the SQL Server databases**

   As described previously.

2. **Back up System Data not in SQL Server databases (regular files):**

   You do not need to do this type of backup frequently as these files rarely change.

   1. Ensure the files are not in use:

      i. Unload the VIZOR Web virtual directories from the Internet Services Manager
         - or -
         If there are no other applications affected, stop the World Wide Web service from the Services Manager.
      ii. Stop the MQ Issue Agent service from the Services Manager.
      iii. Close any running instances of VIZOR Admin and the Web View Editor.

         **TIP:** you can log off users through the Logons Editor in VIZOR Web Admin.

      iv. Backup the VIZOR **Server folder and all the files inside** with the exception of:

         - the AccessRT folder, which contains the setup program for the Microsoft Access Runtime
         - *.mdf and *.ldf files, which are the physical files of SQL Server databases and should be backed up or synchronized as mentioned in the previous section

   You can do this task by using any standard backup tool in the market, such as Backup Exec, Backup NOW!, or some Computer Associates tools.

   **Note:** If you have any VIZOR projects in folders outside the Vizor Server folder, remember to back up those files as well.
3. **Back up the MetaQuest Common Files:**

You do not need to do this type of backup frequently as these files rarely change.

Back up the complete folder:

```
<SystemDrive>:\Program Files\Common Files\Metaquest
```

This folder contains dlls and binary files needed to run the VIZOR Server.

4. **Back up the VIZOR Tools:**

You do not need to do this type of backup frequently as these files rarely change.

Back up the complete IssueTrackerTools folder, which is located by default in:

```
<SystemDrive>:\Program Files\ConnectTools
```

This folder contains customized files needed to run administrator tools and programs like the IssueTracker Admin and the Web view Editor.

5. **Back up the VIZOR Server:**

You do not need to do this type of backup frequently as these files rarely change.

Back up the complete ConnectServer folder, which is located by default in:

```
<SystemDrive>:\Program Files\ConnectServer
```

This folder contains customized files, attachments, and power customizations.

---

**HOW TO BACK UP ATTACHMENTS**

Back up all the files inside the project folder. There is one folder per project and it uses the same name as the project. The project folder is located inside the ConnectServer folder, for example:

```
C:\Program Files\Vector\ConnectServer\Actions
```

where **Actions** is the name of the Vector VIZOR project.
Inside the HelpDesk folder, you will find at least some of the following files and folders:

I. CustomMacro.bas (File)
II. Macro7x.bas (File)
III. MailQueue (Folder, only if Mail Integration is turned on)
IV. Data (Root folder for all attachments)

   1. Attachments (Folder, ticket attachments)
   2. Mail Integration Attachments (Folder)
   3. Mail Template Attachments (Folder)

LOCATING DATABASES

By default, all databases are stored in the ConnectServer folder on your Web server. However, the databases can be relocated to different folders on different computers. For example, the databases may be relocated to a separate SQL Server computer.

To locate the databases, log on to VIZOR Web Admin and go to the Relocation tab.

LOCATING ATTACHMENT FILES

By default, attachments are stored on the Web server. For example, the files attached to issue #3 in the project are stored in the folder

ConnectServer\vit\Data\Attachments\3

Attachments may be relocated to a separate file server. To check the location of the attachments, log on to VIZOR Web Admin, go to the Relocation tab, and click Relocate Attachments.

WEB VIEWS

By default, the runtime files of Web views (the application UI) are stored on the Web server in the ConnectServer folder:
ConnectServer\CensusWeb\Views\CensusWebVD\n
To check the location of your Web views, log on to the Web View Editor and in the shortcut bar click **URL**.

---

**BACKING UP THE MAIN RECORDS**

To back up the records data stored in a project, you need to back up:

- The man data records database, which stores all the information you entered (Incidents, Problems, Changes, Assets, Users, etc).

- The files attached to issues. These files are stored outside of the issue database, in the file system.

---

**WHAT TO BACKUP**

All issue information (except for attached files) is stored in the issue database.

<table>
<thead>
<tr>
<th>Database engine</th>
<th>Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Server</td>
<td>&lt;project&gt;01DAT</td>
</tr>
</tbody>
</table>

By default, attachments are stored in the project folder (for example, C:\Program Files\Vector\ConnectServer\vit\Data\Attachments). Note that the attachments may be stored in a different folder or on a different computer.
- To check the location of the databases, log on to VIZOR Web Admin and click the Relocation tab.

- To check the location of the attachments, log on to VIZOR Web Admin, click the Relocation tab, and click Relocate Attachments.

- You can use VIZOR Admin to verify the location of the issue database. In the Project list, click the project to display the Project Properties. The Project Location specifies the location of the issue database.
BACKING UP PROJECTS

Projects include the definitions of fields, queries, sorts, layouts, reports, and notifications.

WHAT TO BACKUP

Project definitions are stored in the definitions database.

<table>
<thead>
<tr>
<th>Database engine</th>
<th>Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Server</td>
<td>&lt;project&gt;02_DEF database</td>
</tr>
</tbody>
</table>

In addition to the definitions database, there are several related files you should also back up.

<table>
<thead>
<tr>
<th>Project File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;project&gt;.cen</td>
<td>Used for project initialization and versioning</td>
</tr>
</tbody>
</table>

Note that VIZOR automatically backs up the tblDtsFields table in the definitions database. This table contains the definitions of the fields in the project. The backup copies of the table are stored in the definitions database.
BACKING UP THE USERS DATABASE

The users database contains all user and contact information, and is shared by all projects.

WHAT TO BACKUP

If at least one project uses SQL Server, the user data is stored in a SQL Server database. Otherwise, the user data is stored in a Microsoft Access .mdb file. The users database is located in the ConnectServer folder (for example, C:\Program Files\Vector\ConnectServer).

<table>
<thead>
<tr>
<th>Database engine</th>
<th>Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Server</td>
<td>USERS_MDB</td>
</tr>
</tbody>
</table>
BACKING UP SYSTEM FILES

We recommend you do a general backup of the files in the ConnectServer folder.

WHAT FILES TO BACKUP

You should backup these files:

- Censys.mdw (security database that contains users, groups, and passwords).
- The license database.
- CenSession.xml
- CenInfoSession.xml

VIZOR automatically creates backup copies of CenSys.mdw and CenSession.xml in the ConnectServer folder when the files change. A mirror of CenSys.mdw is also available (the mirror file is named CenSys_mir.mdw).
BACKING UP WEB VIEWS

WHAT TO BACKUP

You should backup these databases, files, and folders:

- The database of Web view definitions and settings.

<table>
<thead>
<tr>
<th>Database engine</th>
<th>Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Server</td>
<td>CENSUSWEB_MDB</td>
</tr>
</tbody>
</table>

- The CUSTOMIZEDFILES folder. This folder contains all the customized Web view files (for example, custom reports).
  - The generated Web view files. Each Web view has its own folder. For example:

  C:\Program Files\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\HelpDesk_HelpDesk C:\Program Files\Vector\ConnectServer\CensusWeb\Views\CensusWebVD\HelpDesk_HelpDesk

- The project folders. Each project has its own folder. For example:

  C:\Program Files\Vector\ConnectServer\HelpDesk
  
  The project folder stores attachments, the reports used to format notifications, the macro70.bas file, and the queue of notification messages.

  Note that the attachments may be stored on a different computer. To check the location of the attachments, log on to VIZOR Web Admin, click the Relocation tab, and click Relocate Attachments.
AUTOMATIC BACKUPS

VIZOR automatically backs up:

- The tblDtsFields table in the project definitions database. This table contains the definitions of the fields in the project.
- CenSession.xml
- CenSys.mdw

You can disable these automatic backups by setting the Enable Backups option to No (in the Tools menu, click Options).
PERFORMING HOT BACKUPS

Hot backups are backups performed while the VIZOR system is in use. Hot backups are ideal for continuous operations.

To perform hot backups, the VIZOR administrator has to use database-specific tools:

- To back up data in a SQL Server database, use the built-in SQL Server backup utility.
- If SQL Client Tools are installed, you can use SQL Enterprise Manager to back up an MSDE database.
- To back up Jet/MSAccess databases, use a third-party tool like FMS Total Visual Agent.
RESTORING BACKUPS

After restoring backups of the issue database and the project definitions database, use the Integrity editor to validate the integrity of fields, relationships, and the issue database.

CHAPTER 45 - RELOCATING A VIZOR INSTALLATION
ABOUT THE RELOCATION WIZARD

VIZOR includes a Relocation Wizard for moving its installations from one computer to another.

When you relocate VIZOR, the Relocation Wizard:

- Logs off all users.
- Unloads the virtual directories used by VIZOR.
- Stops the Mq Issue Agent service.
- Detaches local SQL Server databases.
- Backs up the ConnectServer and ConnectTools folders before relocating them.
- Copies VIZOR to another computer and disables the original installation.
- Regenerates all your Web views after VIZOR is relocated. The Web views are all regenerated in the default CensusWeb/Views/CensusWebVD folder.

The Relocation Wizard relocates SQL Server databases if:

- The SQL Server databases are local to the source computer.
- The version of SQL Server on the target computer is greater than or equal to the version of SQL Server on the source computer.

RELATED TOPICS

Before You Relocate
Relocating VIZOR
If Something Goes Wrong
Updating Client Programs

Enabling VIZOR after Relocation
BEFORE YOU RELOCATE

CHECK PERMISSIONS

You must run the Relocation Wizard with a user account that has Full Control permission for the ConnectServer folders on all computers (current location and new location).

CLOSE ALL COPIES OF VIZOR ADMIN AND THE WEB VIEW EDITOR

This includes all copies of the programs, not just those installed on the Web server.

RELOCATE PROJECTS

If you have any projects located outside of the ConnectServer folder, use VIZOR Admin to move the projects into the ConnectServer folder. After you relocate VIZOR, you can use VIZOR Admin to move the projects back outside of the ConnectServer folder.

BACK UP

The Relocation Wizard backs up your ConnectServer and ConnectTools folders, but you may want to create your own backups.

LOG OFF USERS

The Relocation Wizard logs off users, but you may want to inform users that VIZOR will not be available.
RELATED TOPICS

Relocating VIZOR

Updating Client Programs

Enabling VIZOR after Relocation
RELOCATING VIZOR

In VIZOR, all components are typically installed on one computer: the Web server. The Relocation Wizard allows you to move VIZOR to a different computer.

To relocate VIZOR:

1 Close all copies of VIZOR Admin, VIZOR Web Admin, and the Web View Editor.

2 On the target computer, perform a clean install of VIZOR.

3 On the target computer, run the Relocation Wizard, called MqRelocateTool.exe, located in ConnectTools\Support\Relocation.

4 In the Logon Name and Password boxes, enter a VIZOR user account that belongs to a group with Admins permissions.

5 In the Relocate From section, enter the location of the current VIZOR Server as a UNC path (for example, “\NANP\ConnectServer”).

   Make sure the Computer Name box contains the name of the computer where the current VIZOR Server is located, and the Local Path box contains the location of the current VIZOR Server relative to a root directory (for example, “C:\Program Files\Vector\ConnectServer”).

6 In Relocate To section, make sure the VIZOR Server box contains the installation location of the VIZOR Server on the target computer, and the VIZOR Tools box contains the location of VIZOR Admin and the Web View Editor on the new computer.

7 Select the Show Advanced Options check box to show the name of the target computer. If the name is incorrect or missing, enter the name.

8 Click OK to start the relocation.

   When the relocation is complete, the Wizard regenerates all the Web views.

9 Update any remote installations of VIZOR Admin and Web View Editor to reference the new ConnectServer share.

   Check you can open the relocated projects and Web views, and you can run VIZOR Admin, VIZOR Web Admin, and the Web View Editor.

   You can now uninstall the old copy of VIZOR.
IF SOMETHING GOES WRONG

If something goes wrong when you relocate VIZOR:

- Check the error log. The Relocation Wizard creates an error log in the ConnectServer\Relocation folder of the computer where you run the wizard.

- The folder name includes the date and time, so the path to the error log looks something like this:

  ConnectServer
  \Relocation_02-20-2003_10.44.50
  \RelocationErrorLog.txt

- Check there is enough free disk space on the new server. Typically, the amount of disk space required is at least twice the size of the current ConnectServer folder.

- If you are relocating SQL projects, reattach the databases to the SQL Server before trying again.
UPDATING CLIENT PROGRAMS

After you relocate VIZOR, you must update any client programs. Client programs are copies of Vizor Admin and the Web View Editor installed on computers other than the Web server.

To update the client programs on a computer, you run the MqRelocateClients.exe program on that computer.

When the Relocation Wizard finishes, it puts a copy of the MqRelocateClients.exe program in the ConnectServer\Relocation_<timestamp> folder.

If you send the MqRelocateClients.exe program to users to run, you must also send the INI file located in the same folder as MqRelocateClients.exe.
ENABLING VIZOR AFTER RELOCATION

When the Relocation Wizard copies a ViZOR installation to a different computer, it automatically disables the original installation. However, you can re-enable the original installation if you want to continue using it, for example, when you test an upgrade with live data, while continuing to use the original installation.

To enable VIZOR after a relocation:

Apply the following steps to the original VIZOR installation.

1. Reattach all SQL Server databases.

   To prevent users from using old databases, the Relocation Wizard detaches all SQL Server databases.
   Reattach the <project>_DAT databases and the USERS_MDB database using the .mdf or .ldf files in your ConnectServer folder.

2. Rename licenses.mdb.

   Locate a file in the ConnectServer folder with a name that looks like Licenses.mdb_2004-06-18_20.23.21.bak. If there are several files like this, use the one with the most recent date in the name.

3. Allow users to log on.

   - In the ConnectServer folder, open the file census.ini. Find the [SessionControl] section, and if Enabled=0, change it to Enabled=1.
   - Start VIZOR Admin and click Tools > Integrity. Select the Remove Locks check box and click Start.
   - In the CensusWebVD folder (by default, ConnectServer\CensusWeb\Views\CensusWebVD), locate a file with a name like Logon.asp_bck_logoff. If this file exists, delete the Logon.asp file and rename Logon.asp_bck_logoff to Logon.asp.
   - In the CensusWebAdmin folder (by default, ConnectServer\CensusWeb\Views\CensusWebAdmin), locate a file with a name like Logon.htm_bck_logoff. If this file exists, delete the Logon.htm file and rename Logon.htm_bck_logoff to Logon.htm.

4. Restart the notification service.

   If you use notifications, open Services and start the Mq Issue Agent service.

   To open Services, click Start, click Control Panel, double-click Administrative Tools, and then double-click Services.
| %fieldid% variable                  | 429 |
| %fieldname% variable               | 429, 434 |
| %fieldvalue% variable              | 429, 435 |
| .cen file                          | 588 |
| .def file                          | See project definition, 475 |
| < less than operator               | 223 |
| <= less than or equal operator     | 223 |
| <Any> macro                        | 373 |
| <Empty> macro                      | 373 |
| <New Issue> macro                 | 370 |
| <None> macro                       | 222 |
| <Today> macro                      | 222 |
| <User in Group> macro             | 365, 370, 398 |
| <User> macro                       | 365, 370, 398 |
| <Value of Field> macro            | 281 |
| > greater than operator            | 223 |
| >= greater than or equal operator  | 223 |
| 404 errors                         | 479 |
| Adding Pop-up Editors              | 429 |
| Adding URL buttons                 | 435 |
| Ad-hoc Query Editor                | 295, 425 |
| admin user account                 | 276 |
| Admins group                       | 504, 514, 518 |
| Alignment attribute                | 430 |
| Always verify locked databases option | 478 |
| Analyst user account               | 276 |
| Anonymous user account             | 442 |
| Assigned Work Team field           | 281 |
| Attachments                        | 467, 478 |
| Attachments command                | 467 |
| Attachments field                  | 312, 535 |
| Attributes field                   | 428 |
| Authentication method              | 289 |
| Auto Repair                        | 477 |
| Automatically setting value         | 395 |
| Automatically Update Choice List attribute | 430, 521 |
| Backups                            | 593, 595, 597, 600, 605 |
Bandwidth usage, 473
Base projects, 504
Branding, 556, 573
Byte field size, 319
Captions, 302, 315, 431, 515, 521
Categories, 282
CenInfoSession.xml, 598
CenSession.xml, 598
CensusAdminsGroup group, 462
CensusMain.css, 432, 448, 555, 557, 560, 563, 566, 569, 573
CensusUser account, 442, 462
CensusUser user account, 462
CensusWebVD folder, 447
CenSys.mdw, 598
Changing type, 515
Check boxes, 316
Child Issues tab, 426
Choice Editor, 302
Choice lists, Allow Choice Order Sort, 325
Choice lists, automatically setting value, 358
Choice lists, automatically updating, 430
Choice lists, creating relationships, 358
Choice lists, custom reports, 515
Choice lists, database tables, 585
Choice lists, defined, 316
Choice lists, editing, 324, 515
Choice lists, field labels, 315
Choice lists, global, 280, 587
Choice lists, importing, 487
Choice lists, Number of Visible Items attribute, 436
Choice lists, of users and contacts, 287
Choice lists, Progress field, 324, 515
Choice lists, searching, 223
Choice lists, showing selected items, 436
Choice lists, sorting, 231, 325
Choice lists, tooltips, 436
Choice lists, updating in Web views, 430, 521
Choice order sort, 223
Client programs, 609
Closed Date field, 326
Closed Time field, 326
Column Span attribute, 432, 521
ComboBoxWidth CSS class, 432
Contact field, 276, 521
Contact tab, 266, 314
contacts, 201, 266, 276, 280, 287, 415, 486, 487
contacts, adding choice lists of, 287
contacts, assigning to work teams, 280
contacts, defined, 201
contacts, importing, 486, 487
contacts, submit-only views, 276, 415
Contains operator, 224
Cookies, 554
Copying HelpDesk, 610
Crystal Reports, 235
CSS classes, 432, 521, 536
CSS style sheets, 448, 555, 557, 560, 563, 566, 569, 573
Currency fields, 316
Current Issue - Detailed report, 515, 521
Current users, 507
CUSTOM REPORT ENGINE OPTION, 247
Custom reports, 246, 515, 521
Custom reports, choice list changes, 515
Custom reports, deleted fields, 515
Custom reports, fields not exported, 521
Custom reports, for specific Web views, 246
Custom reports, multi-choice lists, 515
CustomCode.js, 434, 543, 544
CustomizedFiles folder, 246, 445, 521, 599
CustomizedFiles folder, backing up, 599
CustomizedFiles folder, explained, 445
CustomizedFiles folder, new projects, 521
Customizing Fields, 515
Data corruption, 474
databases, 200, 474, 477, 478, 482, 497, 507, 535, 583, 587, 593, 595, 596, 597, 600
Databases command, 465
databases, backing up, 593, 595, 597, 600
databases, compacting, 474
databases, DAT, 583
databases, definitions, 200
databases, described, 474
databases, editing tables, 535
databases, field definitions, 596
databases, importing issues, 482, 497
databases, issue, 200
databases, locked, 478
databases, project definitions, 507
databases, releasing, 478
databases, removing locks, 474
databases, synchronizing issues with project definitions, 477
databases, users, 587
Date fields, 222, 316, 486
Date format, 462
Default projects, 504
Default values, 443
Definitions database, 507
Description attribute, 417
Destination Tab, 302, 314
Detailed Record report, 515
DHTML, 434
Display All Read-Only Fields As Text attribute, 417, 433
Display Read-Only Field As Text attribute, 433
DNS Error, 478
Domain user accounts, 442
Double field size, 319
Editor attribute, 429
E-mail Conversation and Queue, 347
employee account, 276
Employee user account, 276
Enable Auto Repair command, 477
Enable Backups option, 600
Error log, 608
Errors, 478, 479
Errors,404 File not Found message, 479
Errors,Cannot find server or DNS Error message, 478
Errors,The page cannot be displayed message, 478
Escalation levels, 381
Escalation rules, 382
Escape sequences, 438
Features, 294, 518
Features,described, 518
Features, enabling and disabling, 294
Field Editor, 302
Fields,adding to issues, 309
Fields,Aligning attribute, 430
Fields,Alignment attribute, 430
Fields,attributes, 428
Fields,automatically setting value, 358
Fields,captions, 315, 431, 515, 521
Fields,changing size, 515
Fields,changing type, 515
Fields,choice lists, 316, 430, 521
Fields,choice lists,automatically updating, 430
Fields,choice lists,defined, 316
Fields,choice lists,updating in Web views, 521
Fields,Column Span attribute, 432
Fields,CSS Class attribute, 432
Fields,currency, 316
Fields,custom reports, 521
Fields,customizing, 515
Fields,date, 316
Fields,decimal numbers, 319
Fields,default values, 443
Fields,deleting, 321, 515
Fields, Destination Tab, 302, 314
Fields, disabled, 311
Fields, Display Read-Only Field As Text attribute, 433
Fields, editing, 515
Fields, editing choice lists, 324
Fields, Editor attribute, 429
Fields, exporting to Web views, 425, 521
Fields, form elements, 432
Fields, hiding, 322, 438
Fields, integer numbers, 319
Fields, labels, 302, 431, 515
Fields, layout in Web views, 521
Fields, Layouts, 425
Fields, Maintain Revision History, 313
Fields, memo, 316, 433
Fields, number, 316
Fields, queries, 521
Fields, read-only, 302, 311, 417, 433
Fields, related, 358
Fields, renaming, 515
Fields, required, 310, 425
Fields, security, 302, 311
Fields, Show in Choice Lists, 312
Fields, Show Selected Items in Choice Lists, 436
Fields, Show Selected Items In ToolTip attribute, 436
Fields, size, 319
Fields, sorts, 521
Fields, spanning columns, 432
Fields, tabs, 314, 515
Fields, tblDtsFields, 596
Fields, timestamping, 542, 543
Fields, types of, 316
Fields, updating styles, 515
Fields, URL Button CSS attribute, 435
Fields, URL buttons, 435
Fields, Visible attribute, 322, 438
Fields, Width attribute, 434
Fields, yes/no, 316
File uploads, 478
Form elements, 432
Form elements, CSS classes, 432
Global choice lists, 280, 587
Global databases, 465
Group leader user account, 276
Group membership, 292
Groups, 268, 278, 290, 291, 294, 451, 504, 507, 518
Groups command, 290
Groups, adding users, 291
Groups, Admin, 518
Groups, creating, 290
Groups, defined, 268, 451
Groups, deleting, 290
Groups, feature permissions, 294
Groups, Guests, 518
Groups, project access permissions, 278, 504, 507, 518
Groups, removing users, 291
Groups, setting permissions, 518
Groups, users, 518
Groups, Web view access permissions, 518
Guests group, 518
HelpDesk, 604, 610
HelpDesk Admin, 205, 324, 477
HelpDesk project, 504
HelpDesk Web Admin, 206, 208, 324, 462
HelpDesk, copying to another computer, 610
HelpDesk, moving to another computer, 604
HelpDeskServer folder, 597
hiding in projects, 283
Html code after control, 434, 542, 544
Html code after control, defined, 434
Html code after control, timestamping, 544
Import Issues, 482, 497
Importing users, 270
Integer field size, 319
Integrity command, 474, 610
Inventory, 538
Inventory, customizing reports list, 538
issue database, 200, 475, 477, 482, 497, 583, 595
issue database, backing up, 595
issue database, DAT, 583
issue database, described, 200
issue database, importing, 482, 497
issue database, synchronizing with project definitions, 475
issue database, synchronizing with revision history, 477
issue database, tblAttachments, 583
issue database, tblDts, 583
issue database, tblFixInformation, 583
Issue agent user account, 403
Issues, 246, 426, 469, 482, 486, 497, 515, 521
Issues per Page attribute, 417
Issues, deleting, 469
Issues, importing, 482, 497
VIZOR

Mq Issue Agent service, 478
Mq.Evaluator service, 387
Multi-choice lists, 316, 515
Network traffic, 473
New projects, 521
Normal Web views, 415
Not Like operator, 226
Notification - Detailed Record report, 515
Notification - Summary report, 515
Notification service, 403
Notifications, 313, 385, 395, 398, 402, 403, 405, 478, 504, 515, 526, 546, 549
Notifications,attachments, 546
Notifications,bounces, 405
Notifications,contents, 549
Notifications,copying to new projects, 504
Notifications,e-mail contents, 398
Notifications,escalation rules, 385
Notifications,examples, 395
Notifications,field updates, 313
Notifications,file formats, 546
Notifications,formatting, 515
Notifications,Include macros, 549
Notifications,mail server options, 403
Notifications,maximum retries, 405
Notifications,Mq Issue Agent service, 478
Notifications,retries, 405
Notifications,send failures, 405
Notifications,setting up, 403
Notifications,sharing between projects, 504
Notifications,user account, 403
Notifications,when conditions, 398
Notifications,workflow, 402
Number fields, 316
Number of Characters attribute, 436
Number of Visible Items attribute, 436
OPTIONS, 247, 403, 405, 472, 473, 478, 526, 600
Options,Always verify locked databases, 478
OPTIONS,CUSTOM REPORT ENGINE, 247
Options,Enable Backups, 600
Options,Maximum Notification Retries, 405
Options,Monitor Interval, 473
Options,Send immediate shutdown message, 472
Options,Send Invalid Notifications To, 405
Options,Server Mail Interval, 403
Options,Server Mail Sender, 403
Options,Server Mail System, 403
Options,Server MAPI Profile, 403
Options,SMTP Server, 403
OPTIONS,STANDARD REPORT ENGINE, 247
Owner field, 276, 486, 521
Pages, 248, 417
Pages, report, 248
Pages, Summary list, 417
Passwords, 295, 403, 442
Performance, 474, 514, 521
Performance, number of projects, 514
Performance, optimizing, 474
Performance, updating choice lists, 521
Permissions, 605
Priority field, 223
Problem Area field, 223
Progress controlled by parent field, 426
Progress field, 324, 326, 358, 426, 486, 515, 585
Progress field, automating workflow, 358
Progress field, child issues, 426
Progress field, choice table, 515
Progress field, database table, 585
Progress field, editing, 324, 326
Progress field, importing, 486
Progress field, relationship with State, 326
Progress field, renaming, 515
Project definitions, 287, 475, 507, 515, 549, 585, 596
Project definitions, .def file, 585
Project definitions, backing up, 596
Project definitions, described, 507
Project definitions, macros, 549
Project definitions, Progress choice table, 515
Project definitions, synchronizing with issue database, 475
Project definitions, tables, 585
Project definitions, tblDtsFields, 585, 596
Project definitions, tblState, 585
Project definitions, tblSubstate, 515, 585
Project definitions, user choice lists, 287
Project folder, 595
projects, 200, 278, 283, 465, 469, 482, 497, 504, 505, 506, 507, 514, 518, 521, 595, 599, 605
projects, access permissions, 514
projects, administering, 200
projects, base projects, 514
projects, creating, 504, 521
projects, current users, 507
projects, customized files, 521
projects, database engine, 507
projects, databases, 465
projects, defined, 504
projects, definitions database, 200, 507
projects, deleting, 506
projects, deleting issues, 469
projects, folders, 595, 599
projects, Groups Allowed to Open, 278, 504, 507, 518
projects, HelpDesk, 504
projects, hiding users, 283
projects, importing issues, 482, 497
projects, location, 507
projects, one vs. many, 504
projects, properties, 507
projects, relocated, 605
projects, styles and notifications, 505
projects, templates, 506
Properties of a project, 507
Queries, 221, 222, 223, 224, 226, 281, 426, 521
Queries, <None> macro, 224
Queries, <Today> macro, 222
Queries, <User> macro, 222
Queries, Contains operator, 224
Queries, dates, 222
Queries, defining, 221
Queries, exporting to Web views, 426
Queries, keyword searches, 224
Queries, relational operators, 223
Queries, Revision Number field, 222
Queries, rolling back, 521
Queries, Web views, 521
Queries, wildcards, 226
Queries, work teams, 281
Read-only fields, 311, 417, 433
Read-Only For, 302, 311
Read-only Web views, 415
Regional settings, 462
Regular expressions, 226
Relationships between issues, 426
Relocate, 465, 467, 604
Relocate, attachments, 467
Relocate, Relocate command, 465, 467
Relocation Wizard, 604
Removing locks, 610
Repair and Compact command, 474
REPORT CREATION API, 247
Reports, 235, 246, 248, 425, 426, 515, 521
Reports, adding fields, 515
Reports, Current Issue - Detailed, 246, 515, 521
Reports, customizing, 246
Reports, Notification - Detailed Record, 515
Reports, Notification - Summary, 515
Reports, Pages, 248
Reports, viewing, 235
Required fields, 425
Revision history, 313, 477
Revision history, enabling/disabling, 313
Revision history, synchronizing, 477
Revision Number field, 222, 395
Security, 266, 268, 278, 290, 294, 302, 311, 417, 451, 518
Security, fields, 302, 311
Security, logon accounts, 266
Security, permissions, 278, 294, 417, 518
Security, permissions, discussed, 518
Security, permissions, features, 294
Security, permissions, projects, 278
Security, permissions, Web views, 417
Security, user groups, 268, 278, 290, 451
Send immediate shutdown message option, 472
Send Invalid Notifications To option, 405
Server Mail Interval option, 403
Server Mail Sender option, 403
Server Mail System option, 403
Server MAPI Profile option, 403
service level agreements, 378, 379, 380, 381, 382, 387, 388, 390, 392, 393, 394
service level agreements, creating, 390
service level agreements, defined, 378
service level agreements, disabling, 392
service level agreements, escalation levels, 381
service level agreements, operational hours, 388
service level agreements, reporting, 390, 393
service level agreements, running programs, 387
service level agreements, service types, 394
service level agreements, setting up, 379
service level agreements, target times, 380
Service types, 394
Services, 387, 403, 478
Services, Mq.Evaluator, 387
Sessions, 471
Show Selected Items in Text attribute, 436
Show Selected Items In Tooltip attribute, 436
Shutdown Process, 478
Single choice lists, 316
Single field size, 319
size, 319
SMTP Server option, 403
sorts, 230, 231, 325, 521
sorts, choice order, 231, 325
sorts, defining, 230
sorts, exported fields, 521
spanning columns, 432
SpanTwoWidthOne CSS class, 432
SQL Query Analyzer, 535
SQL Server, 595, 596, 597
SQL Server, DEF database, 596
SQL Server, issue database, 595
SQL Server, USERS_MDB database, 597
STANDARD REPORT ENGINE OPTION, 247
State field, 326, 486
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style sheets (CSS)</td>
<td>432, 555, 557, 560, 563, 566, 569, 573</td>
</tr>
<tr>
<td>Styles</td>
<td>504, 515</td>
</tr>
<tr>
<td>Styles, copying to new projects</td>
<td>504</td>
</tr>
<tr>
<td>Styles, defined</td>
<td>504</td>
</tr>
<tr>
<td>Styles, editing fields</td>
<td>515</td>
</tr>
<tr>
<td>Styles, sharing between projects</td>
<td>504</td>
</tr>
<tr>
<td>Submit-only views</td>
<td>276, 415, 438, 554</td>
</tr>
<tr>
<td>Submit-only views, contacts</td>
<td>276, 554</td>
</tr>
<tr>
<td>Submit-only views, cookies</td>
<td>554</td>
</tr>
<tr>
<td>Submit-only views, described</td>
<td>415</td>
</tr>
<tr>
<td>Submit-only views, logon accounts</td>
<td>276</td>
</tr>
<tr>
<td>Submit-only views, URLs</td>
<td>438, 554</td>
</tr>
<tr>
<td>Submitter field</td>
<td>276, 373, 486, 521</td>
</tr>
<tr>
<td>Summary List</td>
<td>417</td>
</tr>
<tr>
<td>Summary report</td>
<td>515</td>
</tr>
<tr>
<td>tabs</td>
<td>314, 328, 515</td>
</tr>
<tr>
<td>tabs, adding fields</td>
<td>314</td>
</tr>
<tr>
<td>tabs, Contact</td>
<td>314</td>
</tr>
<tr>
<td>tabs, editing</td>
<td>328</td>
</tr>
<tr>
<td>tabs, moving fields</td>
<td>515</td>
</tr>
<tr>
<td>tblAttachments</td>
<td>483, 535, 583</td>
</tr>
<tr>
<td>tblDts</td>
<td>482, 497, 539, 583</td>
</tr>
<tr>
<td>tblDtsFields</td>
<td>287, 585, 596</td>
</tr>
<tr>
<td>tblFixInformation</td>
<td>583</td>
</tr>
<tr>
<td>tblRevisionHistory</td>
<td>583</td>
</tr>
<tr>
<td>tblState</td>
<td>585</td>
</tr>
<tr>
<td>tblSubstate</td>
<td>515, 585</td>
</tr>
<tr>
<td>tblUser</td>
<td>358, 487, 539, 587</td>
</tr>
<tr>
<td>templates</td>
<td>506</td>
</tr>
<tr>
<td>Text area form elements</td>
<td>316</td>
</tr>
<tr>
<td>Text fields</td>
<td>316</td>
</tr>
<tr>
<td>TextFieldWidth CSS class</td>
<td>432</td>
</tr>
<tr>
<td>Time fields</td>
<td>316, 486</td>
</tr>
<tr>
<td>Time formats</td>
<td>462</td>
</tr>
<tr>
<td>Timeout attribute</td>
<td>417</td>
</tr>
<tr>
<td>Timesheet.js</td>
<td>575</td>
</tr>
<tr>
<td>Timesheets</td>
<td>575, 578, 579</td>
</tr>
<tr>
<td>Timesheets projects</td>
<td>575, 578, 579</td>
</tr>
<tr>
<td>Timesheets, adding rows</td>
<td>575</td>
</tr>
<tr>
<td>Timesheets, adding to Web views</td>
<td>579</td>
</tr>
<tr>
<td>Timesheets, changing starting day</td>
<td>578</td>
</tr>
<tr>
<td>timestamping</td>
<td>542, 543</td>
</tr>
<tr>
<td>tmplInventoryTab.rec</td>
<td>538</td>
</tr>
<tr>
<td>tmplRecord.html</td>
<td>542</td>
</tr>
<tr>
<td>Tools</td>
<td>473, 478</td>
</tr>
<tr>
<td>Tools menu</td>
<td>206, 208, 276, 290, 410, 462, 465, 467, 471, 474, 477, 500, 600, 604</td>
</tr>
<tr>
<td>Tools menu, Attachments command</td>
<td>467</td>
</tr>
<tr>
<td>Tools menu, Databases command</td>
<td>465</td>
</tr>
<tr>
<td>Tools menu, Enable Auto Repair command</td>
<td>477</td>
</tr>
<tr>
<td>Tools menu, Integrity Editor command</td>
<td>474</td>
</tr>
</tbody>
</table>
Tools menu, Licenses command, 500
Tools menu, Logons Editor command, 471
Tools menu, Options command, 600
Tools menu, Relocate command, 465, 467
Tools menu, Repair and Compact command, 604
Tools menu, Web > Groups command, 290
Tools menu, Web > Users command, 276
Tools menu, Web command, 206, 208, 410, 462
Tools, Options, 473, 478
traffic, 473
Troubleshooting, 474, 477
Troubleshooting, Admin problems, 477
Troubleshooting, performance, 474
Troubleshooting, removing locks, 474
Update test, 313, 395
Uploaded files, 478
URL attribute, 435
URL Button CSS, 435, 536
URL buttons, 435
URLs for Web Views, 438, 554
User Categories, 282
Users command, 276
Users database, 587
Users group, 419, 518
Users, adding choice lists of, 287
Users, adding to groups, 291
Users, admin account, 276
Users, analyst account, 276
Users, anonymous access account, 442
Users, assigning to work teams, 280
Users, authentication, 276, 289
Users, backing up database, 597
Users, categories, 282
Users, CensusUser account, 442
Users, database, 587
Users, defined, 266
Users, deleting, 539
Users, disabling, 276, 285
Users, editing user information, 403
Users, employee account, 276
Users, group leader account, 276
Users, group membership, 292
Users, hiding in projects, 283
Users, importing, 270, 486, 487
Users, issueagent, 403
Users, logging off, 471, 478, 605
Users, logon accounts, 276
Users, MDB database, 597
Users, passwords, 403
Users, removing from choice lists, 286
Users, removing from database, 539
Users, removing from groups, 291
Users, removing locks, 474
Users, roles and responsibilities, 510
Users, submit-only Web views, 415
Users, Web view permissions, 419
Users, Windows account, 442
Users, work teams, 280
Users.mdb, 587
USERS_MDB database, 587
USR database, 588
validatelogon.asp, 574
Vertical Alignment attribute, 430
Virtual directories, 440, 471, 478
Virtual directories, creating, 440
Virtual directories, defined, 440
Virtual directories, Logons Editor, 471
Virtual directories, re-creating, 478
Visible attribute, 322, 438
Web Admin command, 206, 208, 462
Web View Editor, 206, 410
Web View Editor command, 206, 410
Web views, access permissions, 419, 518
Web views, columns, 521
Web views, copying, 413
Web views, creating, 410
Web views, CSS, 448
Web views, custom reports, 246
Web views, CustomizedFiles folder, 246, 445, 521, 599
Web views, CustomizedFiles folder, backing up, 599
Web views, CustomizedFiles folder, custom reports, 246
Web views, CustomizedFiles folder, explained, 445
Web views, CustomizedFiles folder, from base project, 521
Web views, customizing, 434, 445, 555, 557, 560, 563, 566, 569, 573
Web views, date formats, 462
Web views, default values, 443
Web views, defined, 200, 410
Web views, deleting, 414
Web views, disabling features, 295
Web views, Display All Read-Only Fields As Text attribute, 433
Web views, exporting fields, 521
Web views, exporting queries, 426
Web views, generating, 430, 521
Web views, groups allowed to open, 417, 518
Web views, hiding fields, 438
Web views, inserting custom code, 434
Web views, Knowledge Base, 415
Web views, layout of fields, 428, 521
Web views, layouts, 425
Web views, Load Issues Not In Query, 417
Web views, logging off users, 471
Web views, normal, 415
Web views, permissions, 295
Web views, printing issues, 521
Web views, queries, 521
Web views, reading only, 415
Web views, read-only fields, 433
Web views, regenerating, 521
Web views, renaming, 414
Web views, style sheets, 448, 555, 557, 560, 563, 566, 569, 573
Web views, styling form elements, 432
Web views, submit-only, 276, 415
Web views, Summary List, 417
Web views, time formats, 462
Web views, timeouts, 417
Web views, Timesheets, 575, 578, 579
Web views, URLs, 438
Web views, virtual directories, 440
Web views, work teams, 281
When conditions, 398
Width attribute, 434
Wildcards in queries, 226
Windows account, 442
Windows NT domains, 270
Windows Server 2003, 478
Work teams, 280, 281
Work teams, assigning users, 280
Work teams, defining, 280
Work teams, overview, 280
Work teams, queries, 281
Work teams, web views, 281
Workflow, <New Issue> macro, 370
Workflow, applying changes to web views, 376
Workflow, automating, 358
Workflow, conditions, 366
Workflow, dependent values rules, 358
Workflow, disabling, 377
Workflow, example rules, 358
Workflow, macros, 373
Workflow, notifications, 402
Workflow, performance costs, 365
Workflow, planning, 510
Workflow, possible values rule, 358
Workflow, projects, 365
Workflow, related fields, 358
Workflow, rules, 358, 366, 368, 371, 372, 375, 377
Workflow, rules, default names, 372
Workflow, rules, defining, 371, 372
Workflow, rules, deleting, 372
Workflow, rules, described, 368
Workflow, rules, disabling, 377
Workflow, rules, evaluating, 375
Workflow, rules, examples, 358
Workflow, rules, format of, 366
Workflow, rules, renaming, 372
Workflow, submitter field, 373
Workflow, templates, 368, 372, 375, 377
Workflow, templates, creating, 368
Workflow, templates, described, 368
Workflow, templates, properties, 372, 375, 377
Workflow, test operators, 366
Workflow, user groups, 370
Workflow, work teams, 280
yes/no fields, 316