

Configuration Management System Guide

Operations Center 5.5

September 3, 2013

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About This Guide

The *Configuration Management System (CMS) Guide* provides instructions on how to contribute data and share knowledge about configuration items (CIs) to build a CMDB (Configuration Management Database) repository.

The following table shows which sections might be most helpful to you:

If your role is …	Then you might be interested in …
General Information	◆ Chapter 1, “Introducing Configuration Management System (CMS),” on page 9
Installer and Administrator	◆ Chapter 2, “Installing or Upgrading CMS,” on page 11 ◆ Chapter 3, “Configuring CMS in Operations Center,” on page 21
General CMS Consumer/User	◆ Chapter 4, “Navigating and Customizing Your Pages,” on page 43 ◆ Chapter 5, “Viewing CIs, Searching, and Reporting,” on page 55
CMS Community Owner or Contributor	◆ Chapter 6, “Contributing to the CMDB,” on page 71 ◆ Chapter 7, “Managing Communities,” on page 91 ◆ Chapter 8, “Using the myWorkspace Sandbox,” on page 101

Audience

This guide is intended for all types of Operations Center users.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the *User Comments* feature at the bottom of each page of the online documentation.

Additional Documentation & Documentation Updates

This guide is part of the Operations Center documentation set. For the most recent version of the *Configuration Management System (CMS) Guide* and a complete list of publications supporting Operations Center, visit our Online Documentation Web Site at Operations Center 5.5 online documentation.

The Operations Center documentation set is also available as PDF files on the installation CD or ISO; and is delivered as part of the online help accessible from multiple locations in Operations Center depending on the product component.

Additional Resources

We encourage you to use the following additional resources on the Web:

- NetIQ User Community (https://www.netiq.com/communities/): A Web-based community with a variety of discussion topics.
- NetIQ Support Knowledgebase (https://www.netiq.com/support/kb/product.php?id=SG_XOPERATIONSCENTER_1_2): A collection of in-depth technical articles.
- NetIQ Support Forums (https://forums.netiq.com/forumdisplay.php?26-Operations-Center): A Web location where product users can discuss NetIQ product functionality and advice with other product users.

Technical Support

You can learn more about the policies and procedures of NetIQ Technical Support by accessing its Technical Support Guide (https://www.netiq.com/Support/process.asp#_Maintenance_Programs_and).

Use these resources for support specific to Operations Center:

- Telephone in Canada and the United States: 1-800-858-4000
- Telephone outside the United States: 1-801-861-4000
- E-mail: support@netiq.com (support@netiq.com)
- Submit a Service Request: http://support.novell.com/contact/ (http://support.novell.com/contact/)

Documentation Conventions

A greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path. The > symbol is also used to connect consecutive links in an element tree structure where you can either click a plus symbol (+) or double-click the elements to expand them.

When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a forward slash to preserve case considerations in the UNIX* or Linux* operating systems.

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1 Introducing Configuration Management System (CMS)

Operations Center Configuration Management System (CMS) allows everyone to contribute data and share knowledge about configuration items (CIs) to build a CMDB (Configuration Management Database) repository. And naturally, when more users contribute, it becomes a more accurate representation of the actual IT infrastructure.

CMDB is a fundamental component of the ITIL framework's Configuration Management process, the CMDB represents the authorized configuration of the significant components of the IT environment. A key goal of a CMDB is to help an organization understand the relationships between these components and track their configuration. CMDB implementations often involve integration with other systems, such as Asset Management Systems.

- Section 1.1, "About CMS," on page 9
- Section 1.2, "CMS Architecture," on page 10

1.1 About CMS

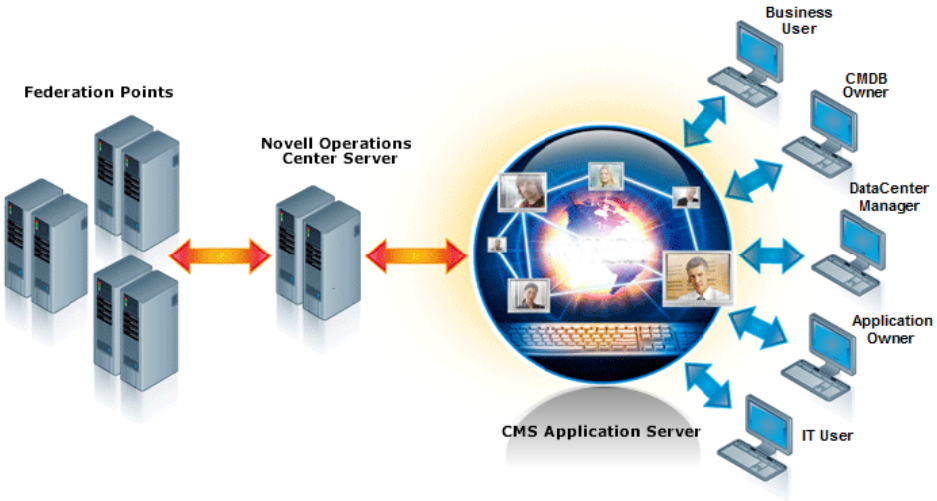
CMS includes:

- **Role-Based Communities:** Users can view and interact with CMDB data and contribute to information quality management. Each CMDB community consists of logically related CMDB data – grouped by function, role, class, or geography.
- **myWorkspace:** Analyze and manipulate CMDB data without affecting production configurations.
- **Activity Feeds:** View additions, edits, and changes to CI and communities.
- **Advanced Search Model Capabilities:** Perform quick and intuitive searches and reporting on CMDB information within each community.
- **Persistent Bookmarks:** Direct access to CIs, community pages, and ad hoc queries for quick review of your most useful data.

- **Reporting:** Leverage your searches by creating reports that can be shared with others.
- **Community-Defined Governance:** Ensures CMDB updates are performed only by authorized personnel.

1.2 CMS Architecture

Figure 1-1 *CMS Architecture Diagram*



CMS utilizes Operations Center Web 2.0 Connect architecture for communications to/from the Operations Center server. CI class libraries, imported into the Operations Center server are leveraged by CMS for custom properties and CMDB structure information.

CMS ships with an embedded Tomcat Server and the CMS application resides as a `.war` file on the Tomcat server. At installation, CMS communication settings must be specified in order to establish the communications channel with the Operations Center server.

2 Installing or Upgrading CMS

CMS is a separate product with its own installation CD or download, and it is not installed as part of Operations Center server. For information about installing Operations Center, see the *Operations Center 5.5 Server Installation Guide*.

CMS is a Web-based application that requires access to the Operations Center server. While it can be installed on the same server as Operations Center, it doesn't need to be on the same host machine.

For hardware and deployment requirements, see "Supported Versions and Hardware Requirements" in the *Operations Center 5.5 Getting Started Guide*.

This chapter covers the following CMS installation topics:

- Section 2.1, "Installing CMS," on page 11
- Section 2.2, "Upgrading CMS," on page 19
- Section 2.3, "Starting and Stopping CMS," on page 20

2.1 Installing CMS

Before installing CMS, verify that all of the requirements have been met. Because CMS is a separate product with its own installation CD or download, it is not installed as part of Operations Center server. For more information about installing Operations Center, see the *Operations Center 5.5 Server Installation Guide*.

During installation, various configuration values must be set for CMS. After installation, you must start the CMS service.

Do the following in order:

1. Section 2.1.1, "Updating and Verifying Your Operations Center Configuration Settings," on page 12
2. Section 2.1.2, "Installing CMS," on page 13
3. Section 2.1.3, "Configuring CMS Settings," on page 15
4. Section 2.1.4, "Starting CMS and Verifying the Installation," on page 18

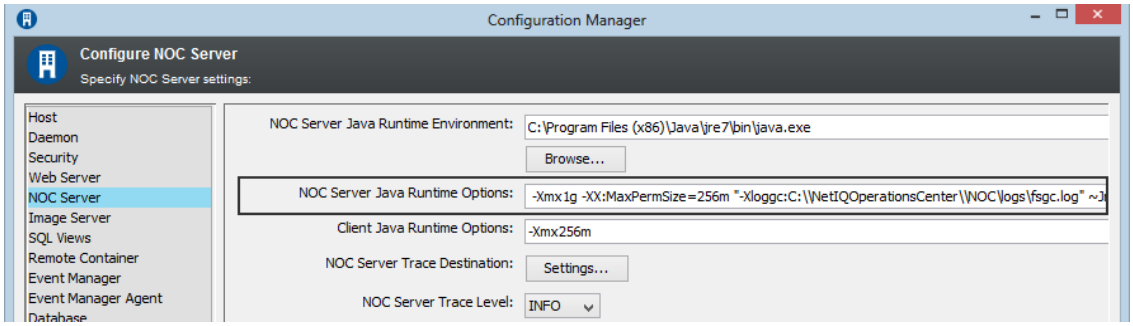
2.1.1 Updating and Verifying Your Operations Center Configuration Settings

Because CMS must communicate with the Operations Center server, we recommend verifying Operations Center server configuration settings before you start to install. It is also important to verify and update (if necessary) *Server Java Runtime Options* values, which can cause memory errors if not set properly.

To verify and update Operations Center Configuration Settings:

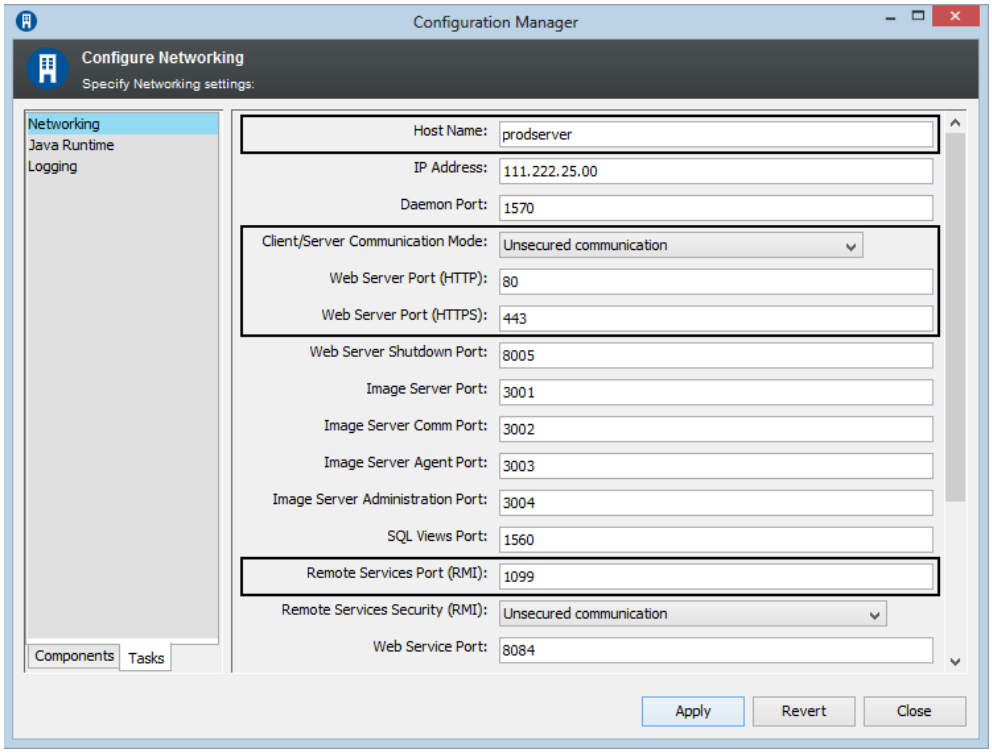
1 Open the Operations Center Configuration Manager, and select *NOC Server*.

2 To avoid memory issues, verify the JRE Flag is set as `-XX:MaxPermSize=256m` in the *NOC Server Java Runtime Options* setting, as shown in this illustration:



3 Click the *Tasks* tab, and select *Networking*.

The *Tasks* tab in the Operations Center Configuration Manager allows you to view all *Networking* settings in a single list, as shown in the following illustration:



4 Verify the following Operations Center server settings, which are important for open communication between Operations Center and CMS:

Hostname: The hostname for the Operations Center server.

Client/Server Communication Mode: The method of communication for the Operations Center server. Select between *Unsecured Communication* or *Secured Communication Using SSL*.

Web Server Ports: The Web server HTTP and HTTPS ports for the Operations Center server.

Remote Services Port (RMI): The RMI server port for the Operations Center server.

5 Continue to Section 2.1, "Installing CMS," on page 11.

2.1.2 Installing CMS

Usually, CMS is installed by using the Installation Wizard. It can also be installed using a console installation or an unattended (or silent) installation as detailed in the following note.

For more information about any of the installation methods, see the *Operations Center 5.5 Server Installation Guide*.

- "Installing CMS Using a GUI Wizard" on page 13
- "Installing CMS Using a Console" on page 15
- "Installing CMS Using an Unattended Mode" on page 15

Installing CMS Using a GUI Wizard

To install CMS:

1 (Recommended) Stop all programs before continuing especially those any programs that might interfere with the Operations Center installation.

2 If installing on Windows 2012 and using a DVD/CD, mounted ISO or mounted network install, do the following:

2a Locate the installation .exe file:

`mount_location\Dashboard\Disk1\InstData\Windows\VM\install.exe`

2b Right-click the file and select *Properties*.

2c Open the Compatibility tab, mark the *Run this program in compatibility mode for* option and select `Windows 7`.

3 Do one of the following:

- **Windows:** Do one of the following:
  - Insert the CMS CD into the CD drive of the server on which the software is to be installed.

    The Installation Wizard should launch automatically. If not, enter `install.bat` at a command prompt to manually launch the Installation Wizard.
  - Access the downloaded CMS files, then enter `install.bat` at a command prompt to manually launch the Installation Wizard.
- **UNIX** Do one of the following:
  - Set the variable path to where the Java executable is, mount the CD, then run `install.sh` from the root.
  - Set the variable path to where the Java executable is, change to the directory where the downloaded CMS files exist, then run `install.sh` from the root.

4 On the *License Agreement* page, review the contents of the license agreement and select the *I accept the terms of the License Agreement* radio button if you agree with the terms.

5 On the *Choose Java Virtual Machine* page, do the following:

5a To install the Java VM, do one of the following:

- (Windows 32-bit) Select the *Choose a Java VM already installed on this application* radio button and select the desired Java VM from the list.
- Select *Search For Others* to list additional installed VMs.
- Select *Choose Another* to navigate to the location of the Java VM you want to use.

IMPORTANT: If installing on a Windows 32-bit platform, select a 32-bit JVM. If installing on a Windows 64-bit platform, select a 64-bit JVM. CMS cannot run if the wrong JVM is selected.

---

6 On the *Choose Install Set* page, do one of the following:

- Click *Next* to accept the default typical install set and install the most common application features.
- Click *Web Application* for the installer to save the `.war` files to your server.

7 On the *Choose Install Folder* page, click *Next* to accept the default installation directory or click *Choose* to browse for a different location.

8 On the *CMS Server Configuration* page, do the following:

8a Specify the CMS communications mode by selecting one of the following *CMS Communications Mode* radio buttons:

- **http only** to only use unsecure communications.
- **https only** to only use secure communications.
- **both** to allow both unsecure and secure communications.

8b Specify the http port CMS is to use for http communications in the *CMS Web Server Port (HTTP)* field.

8c Specify the http port CMS is to use for https communications in the *CMS Web Server Port (HTTPS)* field.

8d Click *Next*.

8e Specify the communications mode that CMS uses to communicate with the Operations Center server by selecting one of the following *Operations Center Communications Mode* radio buttons:

- **http** to use unsecure communication with Operations Center.
- **https** to use secure communications with Operations Center.

8f Specify the host name for the Operations Center server in the *NOC Host Name* field.

8g Specify the Web port for the Operations Center server in the *NOC Web Port* field.

8h Click *Next*.

8i Select the *Run Configuration Manager* after install option to launch the Configuration Manager during installation.

8j Click *Next*.

9 On the *Pre-Installation Summary* page, review all installation details and then click *Install*. During installation:

- The status display is updated as CMS installs.
- The Configuration Manager launches to configure settings for the installation if selected in Step 8i. For details on these settings, see Section 2.1.3, "Configuring CMS Settings," on page 15.

10 After installation is complete, continue with Section 2.1.3, "Configuring CMS Settings," on page 15.

Installing CMS Using a Console

A console installation runs a text-based version of the Installation Wizard. Options are the same as the Windows-based version, except that you must provide responses.

1 To run a console installation, do one of the following:

- Run `install.bat -i console` at a command prompt in Windows.
- Run `install.sh -i console` at a command prompt in UNIX.

2 Reply to responses as they appear.

Installing CMS Using an Unattended Mode

An unattended installation installs CMS without opening the installation wizard. The installation takes all default values and runs silently in the background.

To run an unattended installation, issue one of the following commands replacing *installation_path* with the complete path to the location where CMS is installed:

In Windows:

```
install.bat –i silent –D USER_INSTALL_DIR=installation_path
```

On UNIX:

```
install.sh –i silent –D USER_INSTALL_DIR=installation_path
```

2.1.3 Configuring CMS Settings

Configurations must be made for general CMS operation and communications with the Operations Center server. CMS configuration settings are defined using the CMS Configuration Manager during the installation process.

The CMS Configuration Manager and the Operations Center Configuration Manager are two different configuration managers.

After making changes in the Configuration Manager, it is necessary to restart CMS for any changes to take affect. Changing the settings through the Configuration Manager replaces all existing configuration files and any manual changes are lost.

For information about securing Operations Center and CMS across servers, see "Communications Security" in the *Operations Center 5.5 Security Management Guide*.

To configure CMS settings:

1 To access the CMS Configuration Manager, do one of the following:

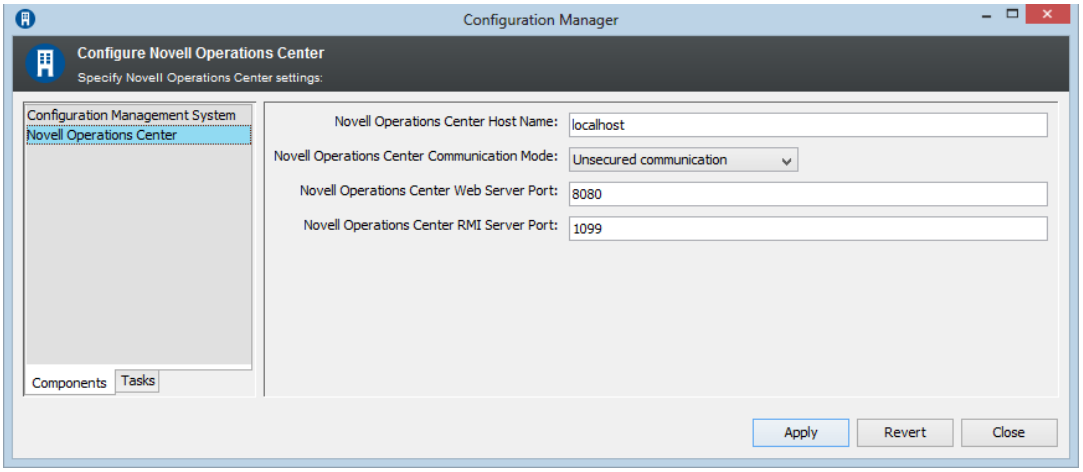
- Execute `/OperationsCenter_CMS_install_path/bin/customizer.exe`.
- From the *Start* menu in Windows, select *NetIQOperations Center > NetIQ Operations CenterCMS > Configure NetIQ Operations Center CMS*.

2 To configure Operations Center server Communication, do the following:

2a Click the *Components* tab, and select *NetIQ Operations Center*.

In order for CMS to communicate with the Operations Center server, some configuration settings must match the settings of the Operations Center server's configuration.

2b Match the same settings as in the Operations Center Configuration Manager:



Configure the following CMS settings to be the same as for the Operations Center server:

Operations Center Host Name: The hostname for the Operations Center server.

Operations Center Communication Mode: The method of communication for the Operations Center server. Select between *Unsecured Communication* or *Secured Communication Using SSL*.

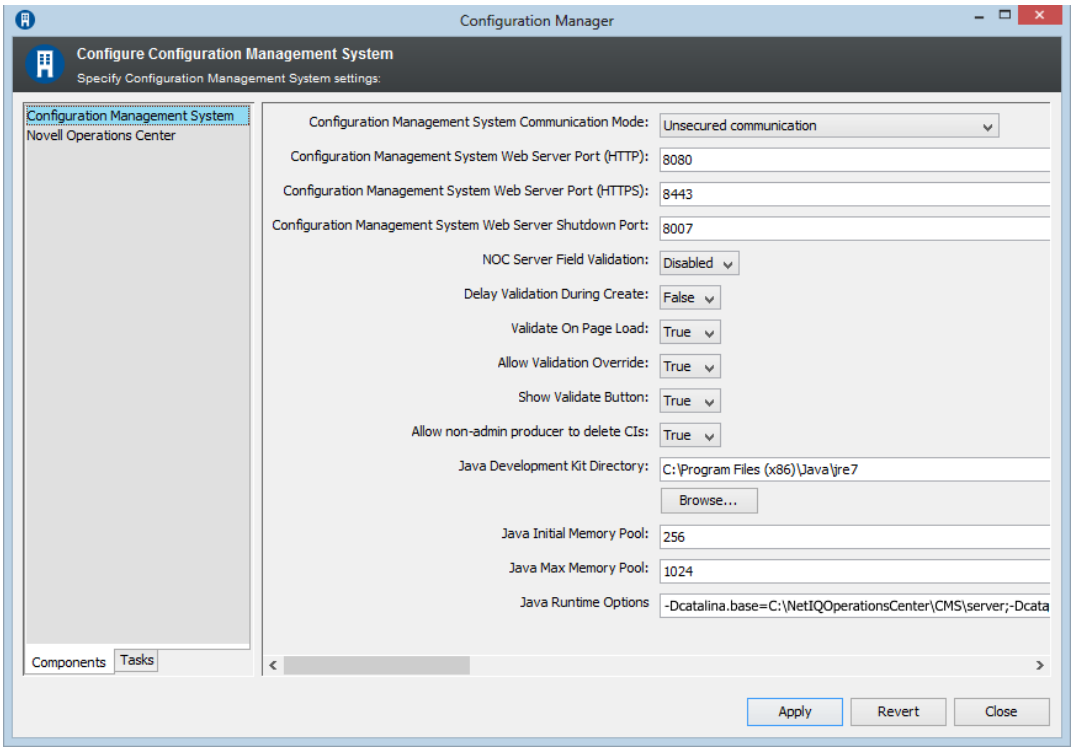
Operations Center Web Server Port: The Web server port for the Operations Center server. If using unsecured communication, specify the Web Server Port number for HTTP from the Operations Center server. Or, if using Secured communication using SSL, specify the Web Server Port number for HTTPS from the Operations Center server.

Operations Center RMI Server Port: The RMI server port for the Operations Center server. The default RMI port is 1099. The value must match the RMI server port specified in the Operations Center configuration manager. If the port is changed in the CMS Configuration Manager, the port must be updated in the Operations Center Configuration Manager, and vice versa.

2c Click *Apply* to save the settings.

3 To configure CMS, do the following:

3a In the *CMS* section, click the *Components* tab.



3b Configure the following which configure how the user accesses CMS:

Configuration Management System Communication Mode: The method of communication for CMS. Select *Unsecured Communication*, *Secured Communication Using SSL*, or *Support Both Unsecured and Secured Communication*.

Configuration Management System Web Server Port (HTTP): The port to access CMS if using an unsecured communication protocol.

Configuration Management System Web Server Port (HTTPS): The port to access CMS if using a secure communication protocol.

Configuration Management System Web Server Shutdown Port: The TCP/IP port number to which CMS listens for a shutdown command.

3c Configure the following to enable the Operations Center server to use standard metamodel validation rules to evaluate CI information:

NOC Server Field Validation: Set to *Enabled* to enable the Operations Center server to perform field validation when the CI Edit dialog is updated. Enabling this property, enables the following properties related to field validation.

Delay Validation During Create: Set to *true* to turn off validation so that a list of property pages and fields can be returned for the CI prior to actual CI registration. During this process, an internal ORG element is used in Operations Center until CI fields are valid, at which point the actual element is created.

If set to *false*, the element is created in Operations Center when the *Register* button is clicked. If any CI fields are invalid, then the CI is removed after confirmation when the *Allow Validation Override* property is set to *true*. It is recommended to set the *Delay Validation During Create* property to *false* when using a complex custom matching script or script validation rules.

Validate On Page Load: Set to *true* to perform server-side validation when attributes are first populated in the *Attributes* page of the CI Edit dialog.

Allow Validation Override: Set to *true* to prompt the user if the CI has invalid fields. The user is given a choice to continue with CI registration or update, or to return and correct the information. If set to *false*, the CI cannot be registered or updated until all validation rules are satisfied.

Show Validate Button: Set to *true* to show a *Validate* button in the CI Edit dialog.

Allow non-admin producers to delete CIs: Set to *true* to allow producers who are not Operations Center administrators to delete CIs. When set to *false*, all delete CI options are hidden for producers who are not also Operations Center administrators.

3d Specify Java configuration options:

Java Development Kit Directory: The location of the JDK used by CMS. Click *Browse* to select a new location.

Java Initial Memory Pool: (Windows only) Initial and minimum Java heap size in megabytes.

Java Max Memory Pool: (Windows only) Maximum Java heap size in megabytes.

Java Runtime Options: List of command line options in the form of -D or -X that are passed to the JDK. For Windows, separate entries with a semicolon. For UNIX, separate entries with a space.

For more information about JRE requirements, see "Requirements for the Dashboard and CMS" in the *Operations Center 5.5 Getting Started Guide*.

3e Click *Apply* to save the settings.

3f Continue to Section 2.1.4, "Starting CMS and Verifying the Installation," on page 18.

2.1.4 Starting CMS and Verifying the Installation

The last step to installing CMS is to start the CMS service and log in to verify a successful connection.

For more information about starting and stopping CMS, see Section 2.3.1, "Starting CMS," on page 20.

To log in to CMS:

1. From your Web browser, access the CMS, then enter the following URL:

   http://*server*:*CMS_port*

   For example, if you have installed CMS on your current machine and set the HTTP port in the CMS Configuration Manager to 8888, then point your browser to:

   http://localhost:8888

2. Log in to the CMS.

   Use the Operations Center default admin account credentials.

3. If authentication fails, do the following as necessary:
   - Confirm your administrator default account credentials.
   - Verify you are using the correct HTTP or HTTPS port.
   - Confirm that the RMI connections specified in the CMS Configuration Manager and the Operations Center Configuration Manager match.

     If settings are changed in the Configuration Manager, restart the associated server.

- Check the `CMS.trc` file for error messages.
- Verify the correct JVM is installed for the platform you are running.

2.2 Upgrading CMS

Upgrading an existing `Managed Objects myCMDB` installation to `Operations Center CMS`, a database process performs a conversion of references (including element names, relationship names, attribute values, etc.) to migrate the existing myCMDB hierarchy into a new CMS hierarchy.

Before upgrading an installation of `Managed Objects myCMDB` to `Operations Center CMS`, it is important to perform a native database-level backup of the Configuration Storage database.

IMPORTANT: XML-based configstore exports are not sufficient as backups before upgrading to Operations Center CMS. It is necessary to perform a native database-level backup of the Configuration Storage database. Additionally, existing myCMDB XML-based imports are not compatible with the new CMS hierarchy.

To upgrade a myCMDB installation to Operations Center CMS:

1. Perform a backup of the Configuration Storage database at the native database-level.

   For more information about the Configuration Storage database, see the *Operations Center 5.5 Server Configuration Guide*

2. Stop the Operations Center server.

   For more information about stopping the Operations Center server, see *Starting and Stopping the Server* in the *Operations Center 5.5 Server Installation Guide*.

3. Install `NetIQ Operations Center` and `Operations Center CMS` over the existing installation directories.

4. Execute one of the following SQL scripts at the native database level against the Configuration Storage database to perform the upgrade.

   - **MS SQL Server:** `/OperationsCenter_CMS_install_path/webapps/noc/scripts/mssql/cms_mssql.sql`
   - **Oracle:** `/OperationsCenter_CMS_install_path/webapps/noc/scripts/oracle/cms_oracle.sql`

   Various Configuration Storage database tables, such as `CFG_ATOM`, `CFG_ATTRIBUTE`, `CFG_ENTRY`, are updated.

   IMPORTANT: It is important that the upgrade script be run prior to the first login to CMS. On the first login, a new CMS service model hierarchy is automatically created. If the upgrade script is run after an initial CMS login, problems will occur as the scripts assume there is no existing CMS hierarchy. If this does happen, delete the new CMS hierarchy and then run the upgrade script.

   ---

5. Start the NetIQ Operations Center server and the CMS server.

   In the Operations Center console, the pre-existing `myCMDB` hierarchy under `Service Models` is now renamed to `CMS`.

   For more information on starting the Operations Center server, see *Starting and Stopping the Server* in the *Operations Center 5.5 Server Installation Guide*.

   For more information on starting the CMS server, continue to Section 2.3, "Starting and Stopping CMS," on page 20.

2.3 Starting and Stopping CMS

After installation, you must start the Operations Center CMS service.

The user account used to start and stop CMS must have the proper permissions to create, update, and delete content in the CMS directory on the CMS server. The user must also have the Environment variable `%JAVA_HOME%` in Windows or `$JAVA_HOME` in Linux/Unix set to point to the JDK directory.

To start or stop the CMS service:

- Section 2.3.1, "Starting CMS," on page 20
- Section 2.3.2, "Stopping CMS," on page 20

2.3.1 Starting CMS

To start CMS:

- In Windows, do one of the following:
  - Run the */OperationsCenter_CMS_install_path*`/bin/startup.bat` script file.
  - Start the *Operations Center CMS Windows* service.

    From the *Start* menu, select *NetIQ Operations Center* > *NetIQ Operations Center CMS* > *Start NetIQ Operations Center CMS*.
  - To start CMS in console-mode, run the */OperationsCenter_CMS_install_path*`/bin/startupConsole.bat` script file.
- In Unix, run the `startup.sh` command.

2.3.2 Stopping CMS

To stop CMS:

- In Windows, do one of the following:
  - Run the */OperationsCenter_CMS_install_path*`/bin/shutdown.bat` script file.
  - Stop the *Operations Center CMS Windows* service.

    From the *Start* menu, select *NetIQ Operations Center* > *NetIQ Operations CenterCMS* > *Stop NetIQ Operations Center CMS*.
  - To stop CMS if running in console-mode, run the */OperationsCenter_CMS_install_path*`/bin/shutdownConsole.bat` script file.
- In Unix, issue the `shutdown.sh` command.

3 Configuring CMS in Operations Center

After installing CMS, the following need to be considered when configuring CMS for users:

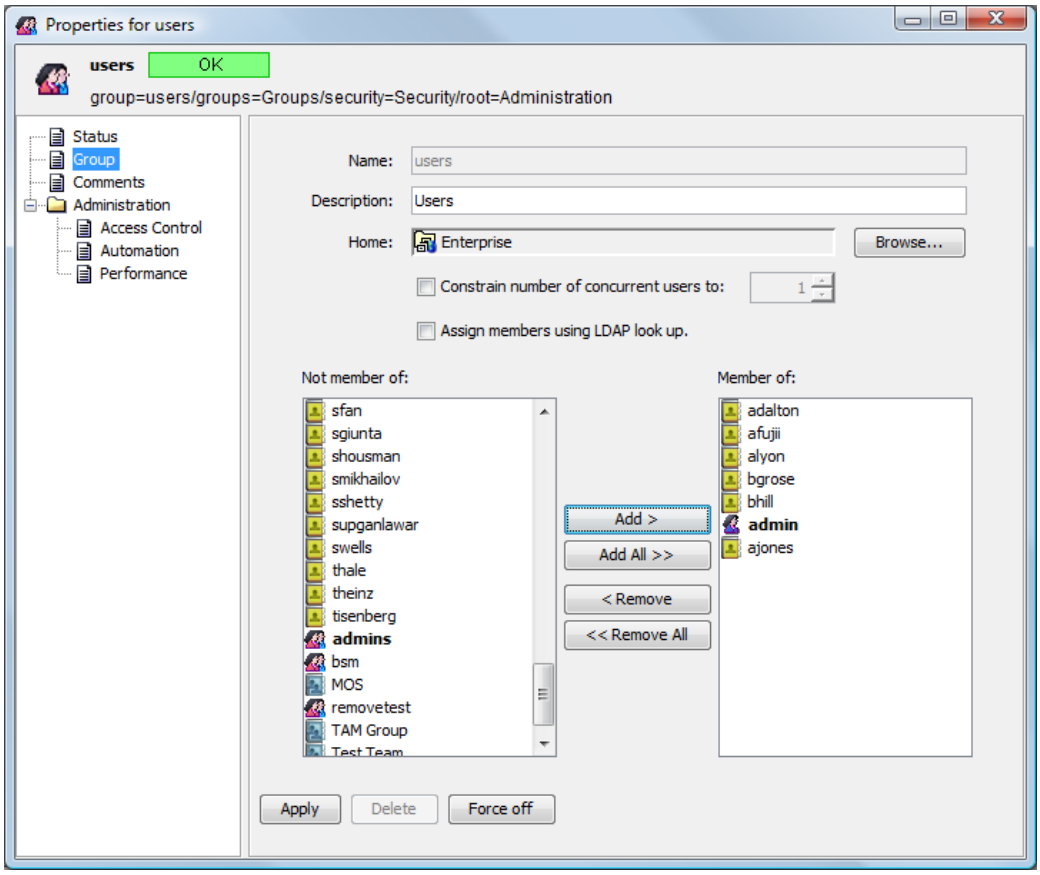
- Section 3.1, “Setting Permissions for User Accounts,” on page 22
- Section 3.2, “Importing MetaModel Libraries and Defining Association Rules,” on page 22
- Section 3.3, “Custom Classes and Class Customizations for CMS,” on page 26
- Section 3.4, “Configuring CMS for Field Validation Rules,” on page 32
- Section 3.5, “Understanding Operations Center’s Services Hierarchy for CMS,” on page 32
- Section 3.6, “Managing CMS Elements from Operations Center,” on page 33
- Section 3.7, “Creating Custom Operations,” on page 41
- Section 3.8, “Understanding Event Time Stamps,” on page 42

3.1 Setting Permissions for User Accounts

Users must be a member of the Operations Center *users* group to access CMS.

To verify users are a member of the *users* group:

1 From the Operations Center console, open the Properties for your *users* group:



2 Add any user accounts to the group that need to access CMS.

For more information regarding creating user accounts and user permissions, see the *Operations Center 5.5 Security Management Guide*.

3.2 Importing MetaModel Libraries and Defining Association Rules

CMS leverages MetaModel libraries to build your CMDB items and structure. It is necessary to import CIM models or any other models you wish to use into the Operations Center server so the model infrastructure is accessible by CMS.

- Section 3.2.1, “Importing a Model into the Operations Center MetaModel Library,” on page 23
- Section 3.2.2, “Reserved Association Types,” on page 23
- Section 3.2.3, “Defining Associations within your MetaModel Library,” on page 23
- Section 3.2.4, “Editing Association Rules in the MetaModel Library,” on page 25

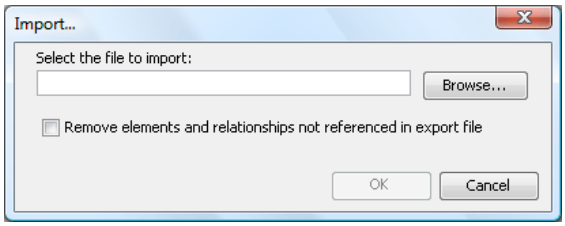
3.2.1 Importing a Model into the Operations Center MetaModel Library

Two CIM libraries are available with the CMS installation. Because the full CIM MetaModel can be overwhelming with the number of classes and associations, Operations Center offers CIM LITE, a subset of the CIM models' classes and associations that can be used as an example starting point if you do not require the full CIM model.

To avoid confusion to end users (such as duplicate classes that cannot be identical in all respects), it is recommended to import only one CIM-related MetaModel—either the CIM or CIM LITE MetaModels, but not both.

To import a model into the MetaModel library:

1. Log in to the Operations Center console.
2. From the Operations Center *Explorer* pane, right-click *Enterprise* > *Administration* > *Server*, then select *Configuration* > *Import* to open the Import dialog box:



3. Browse to the `/webapps/noc/CMS/metamodel` directory of your CMS installation and select the MetaModel's XML file: `CMS_CIM.config.xml` or `CMS_CIM_LITE.config.xml`.
4. Click *OK* to import it.

3.2.2 Reserved Association Types

Any association with the prefix of `CMS_` is reserved for internal use and is not displayed in CI relationships, the relationship builder or reporting. While it is possible to use this prefix when defining your own association types, we recommend against it as these relationship are not visible to CMS users.

3.2.3 Defining Associations within your MetaModel Library

While CIM MetaModel libraries are important for identifying the various items in your CMDB, association rules are utilized to instruct users during the CI creation process on how various items relate to each other and their "rules" for existence. For example, there must be one related computer system for each operating system item.

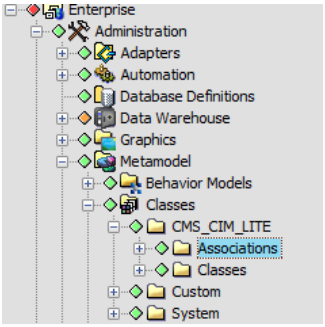
Although MetaModel libraries can have their own set of default association rules, you should create new association rules to reflect the associations in your environment. Later when CMS contributors create new CI items, users are prompted to set up other CIs and relationships based on these association rules.

While association rules alert users to the fact that certain relationships are expected and required, they do not force the user to fix broken relationships nor prohibit the creation of relationships beyond the maximum number.

For more information on defining classes, behavior models and property pages, see *Operations Center 5.5 Service Modeling Guide*.

To create a new association rule in the MetaModel library:

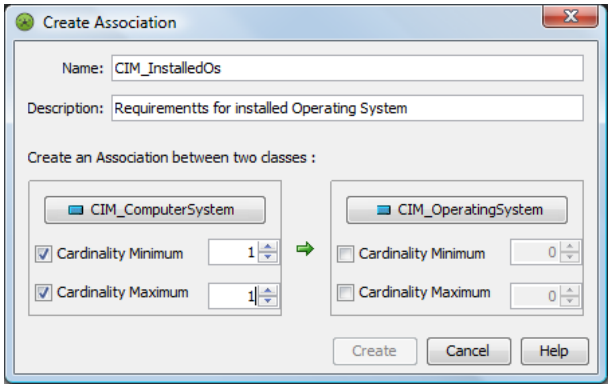
1 In the Operations Center console *Explorer* pane, expand *Administration* > *Metamodel* > *Classes* to the desired MetaModel library:



If no metamodel libraries were imported and there are no plans to do so, create a new *Associations* folder under *Classes* to have access to this functionality.

For more information about adding folder to the *MetaModel* hierarchy, see the *Operations Center 5.5 Service Modeling Guide*.

2 Right-click *Associations* under the metaModel library, then select *Create Association* to open the Create Association dialog box:



In the example above, the settings on the left for *CIM_ComputerSystem* trigger an alert that one relationship must be defined to a *ComputerSystem* item for every *OperatingSystem* item created. By not defining any relationships on the right side for *CIM_OperatingSystem*, no relationships for ComputerSystems are enforced when an *OperatingSystem* item is created.

3 Specify the name of the association in the *Name* field.

4 If desired, enter a description of the association definition in the *Description* field.

5 For each association endpoint, click *Browse* to select the desired class.

6 Using the Cardinality selectors, specify a requirement to have relationships with items of the other class by selecting either cardinality check box under the other class.

Set a *Cardinality Minimum* under an endpoint class to specify the number of required relationships to items of that class. If no associations are required to that class, do not select the *Cardinality Minimum* check box.

Set a *Cardinality Maximum* under an endpoint to specify the maximum required relationships to items of that class. If there is no maximum to enforce with that class, do not select the *Cardinality Maximum* check box.

In the above example, when an Operating System item is created, the user is alerted that they must define one (and only one) relationship to a Computer System item. The user is not alerted to when creating a Computer System item because there is no requirement to have any relationships with Operating System items. Unless other association rules exist to the contrary, the user is allowed to create any number of relationships to Computer System items without receiving an error message.

3.2.4 Editing Association Rules in the MetaModel Library

To edit association rules in the metamodel library:

1 In the Operations Center console *Explorer* pane, expand *Administration* > *Metamodel* > *Property Pages* to the desired metamodel library.

2 Expand the *Associations* folder under the metamodel library.

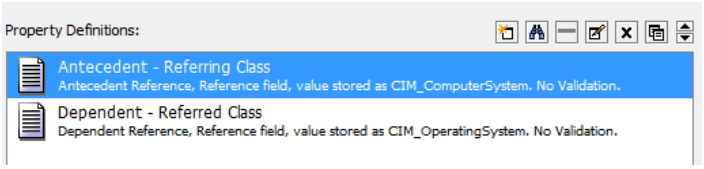
3 Locate the property page for the desired association rule.

For the example used in the previous instructions, we would look for `CIM_InstalledOS_Page`.

4 Right-click the property page, then select *Properties* to open the Properties dialog box.

5 Click the *Property Page* panel.

The association rules display in the *Property Definitions* list:

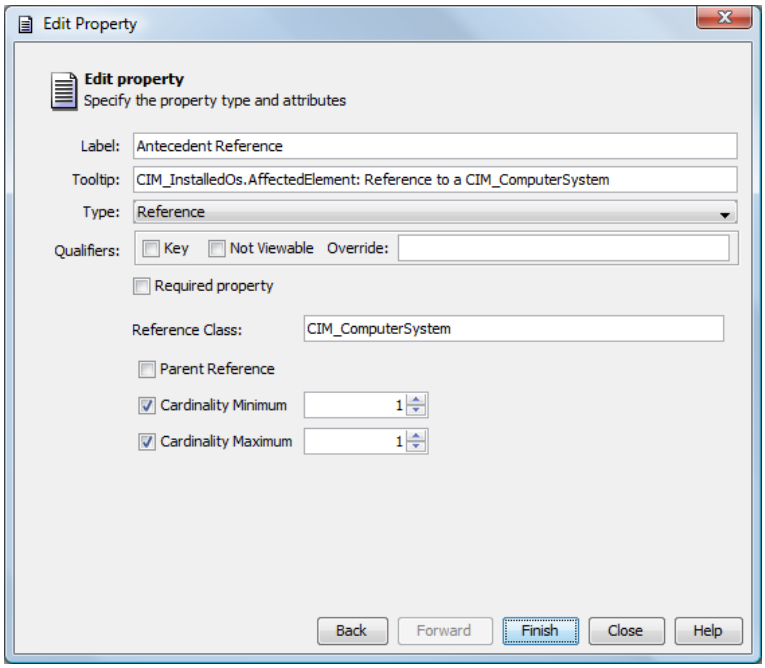


The association requirements relating to Source items are defined in a GroupComponent definition and those relating to Destination items are defined in a PartComponent definition.

6 Double-click the definition to edit to open the Edit Property dialog box.

7 Click *Forward* to view that part of the association rule.

In the illustration above, we opened the AntecedentReference definition, which alerts that one Computer System relationship is required every time an Operating System item is created.



8 Make any changes as necessary to the definition.

9 Click *Finish* to save the changes.

3.3 Custom Classes and Class Customizations for CMS

Custom classes can be created to use with CMS. Any class can be customized to show custom CI menu options. The following sections describe how to implement both:

- Section 3.3.1, “Creating Classes to Utilize CIM Qualifiers,” on page 26
- Section 3.3.2, “Customizing Classes for Custom Links to External Web Sites from CI Menus,” on page 28

3.3.1 Creating Classes to Utilize CIM Qualifiers

MetaModel libraries have default classes used to register configuration items; you can also create new classes to define your environment. When creating a new class, you can specify CIM qualifiers that pull in specialized CIM model attributes for items of that class. Or, if you have preexisting classes that you know will be used to define CMS objects, edit the properties for that class to update the *Qualifier* settings.

For additional information about working with classes and metamodels, see the *Operations Center 5.5 Service Modeling Guide*.

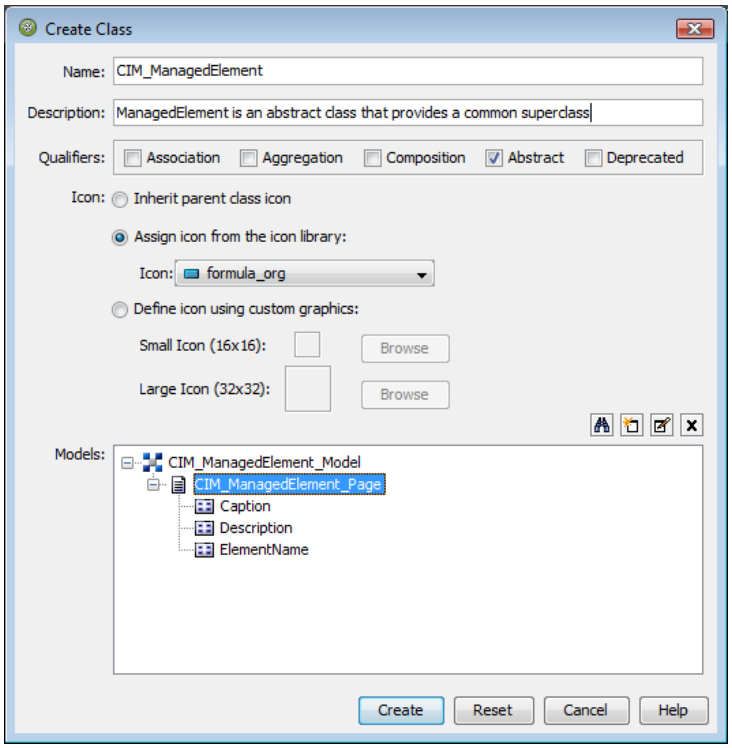
To create a class:

1 In the Explorer pane, expand *Metamodel* > *Classes*.

NOTE: You can create a new folder to organize classes created for CIM Qualifiers. Right click *Classes* and select *Add Folder* to create a new folder.

---

2 Right-click the desired folder, then select *Create Class* to open the *Create Class* dialog:



3 Specify a name and description of the class in the *Name* and *Description* fields.

4 Select any options in the *Qualifiers* section to apply CIM model qualifier attributes as appropriate:

Association: The class defines a relationship between two objects.

Aggregation: The class defines a relationship between parent and child objects.

Composition: The class defines a relationship where the child object is a part of the parent. In this case, the child can only have one parent.

Abstract: The class serves as a base to define new classes.

Deprecated: The class is obsolete and is only used for backwards support only.

For more information about creating and modifying classes, see the *Operations Center 5.5 Service Modeling Guide*.

5 To assign an icon to the class, select one of the following options:

Inherit parent class icon: Reuses the class' parent icon. This assumes the class is created as a child of another class. If the parent is not a class, but a folder, then the default formula_org icon is used.

Assign icon from the icon library: Select this radio button, click the *Icon* drop-down list, then select the existing icon to display for the class.

Define icon using custom graphics: Select this radio button, *Small Icon* and *Large Icon*, click *Browse*, navigate to the icon, then click *Open*. The selected icon displays on the Create Class dialog box.

If the icon graphics are later edited or replaced, it is necessary to restart the server in order to display the updated icons.

6 To make the class available as search criteria when finding elements, select the *Include in Find* check box.

For more information, see the *Operations Center 5.5 Service Modeling Guide*.

7 Select one or more behavior model definitions to apply to elements of this class using one of the following steps:

- Click  Browse to select one or more behavior model definitions.

  Behavior model definitions contain a list of property pages that show for elements of this class.

- Click  Create a Class Model to create a behavior model to open the Create Model dialog box.

  For more information, see the *Operations Center 5.5 Service Modeling Guide*.

- Click  Edit to display the behavior model and to edit it.

8 Click *Create*.

The new class displays in the *Metamodel* hierarchy.

3.3.2 Customizing Classes for Custom Links to External Web Sites from CI Menus

Classes can be customized to offer various hyperlinks as options in the CI's right-click menu. If a link is defined high enough in the class hierarchy then all CIs of any child class inherit the functionality.

When this custom menu type is selected in CMS, a new browser window opens and attempts to access the external Web site.

When defining these links as a class property, the following rules apply:

- Menu operation definitions uses a minimum of two name value pairs separated by double colons (::) and a pipe symbol (|) internally. Optionally, window feature arguments can be specified separated by commas.

  name|*Option_Label*::popupurl|*URL_and_Parameters*::windowfeatures|*window_argument_name=window_argument_value,window_argument2_name=window_argument2_value*

  For example,

  name|Google::popupurl|http://www.google.com::windowfeatures|width=800,height=600,windowname=_GOOGLE

  URL values must be fully qualified Web addresses. Window feature are standard window attributes for the JavaScript window.open method such as `width`, `height`, `location`, `menubar`, `resizable`, `scrollbar`, `titlebar`, `toolbar`, `left` and `top`. Not all window features are supported by all browsers. If the browser doesn't recognize a specific feature, it simply ignores it.

- The property's script expression should return a multi-line string wth each URL specified on a single line.

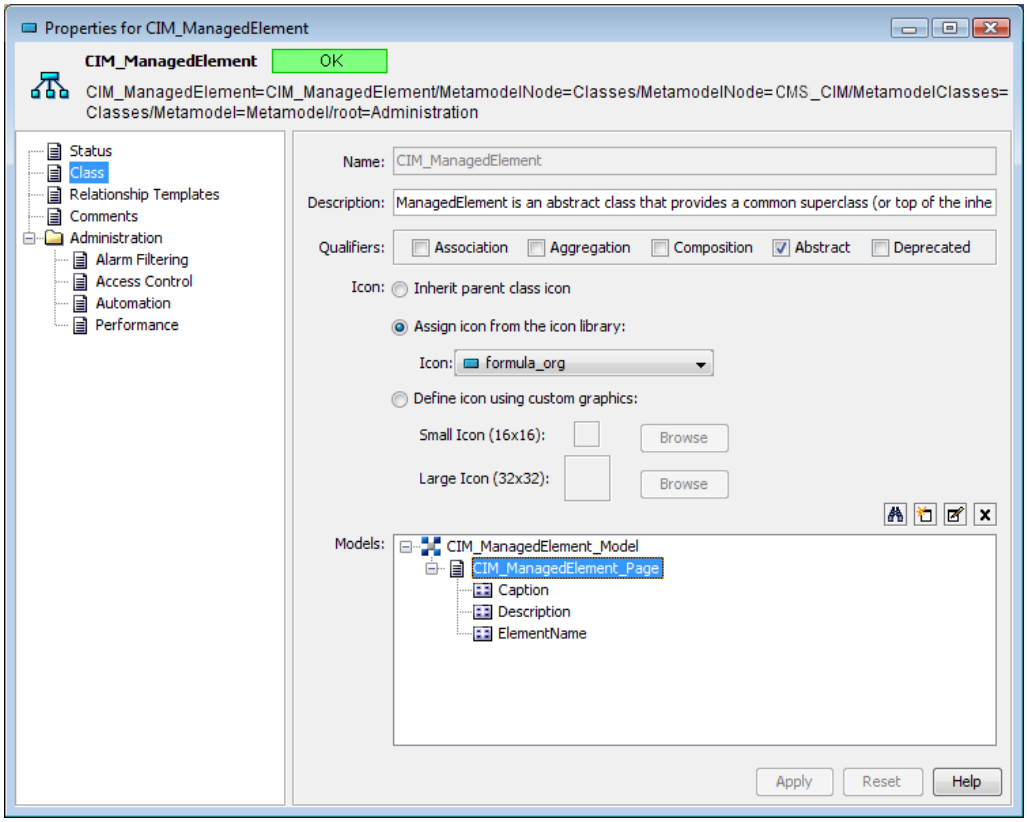
- The NOC Script must contain valid syntax. For more information on FormulaScript, see the *Operations Center 5.5 Scripting Guide*.
- Operations defined for a class are automatically inherited by any sub-classes.

In the procedure below, we illustrate how three different types of URLs might be called including a simple URL, a URL passing the element name as a parameter, and a JavaScript alert box showing the element name.

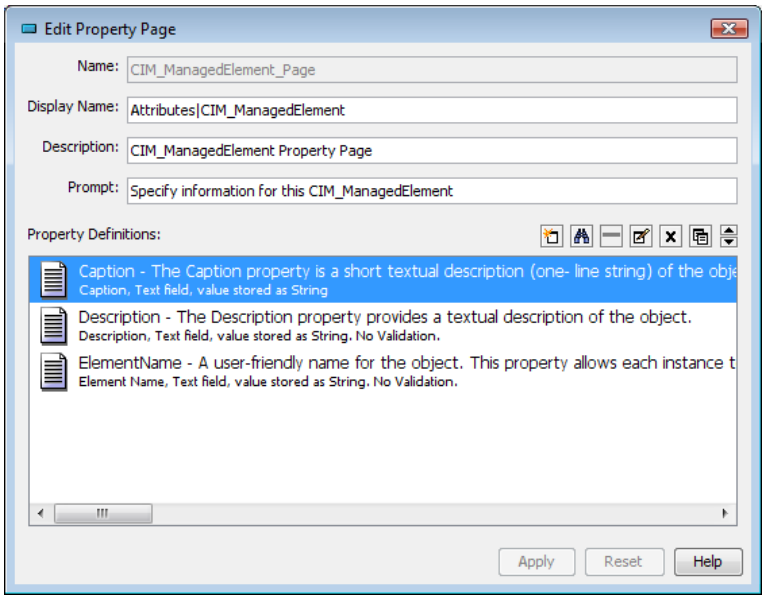
For more information about creating Property Pages and Properties, see the *Operations Center 5.5 Service Modeling Guide*.

To add custom hyperlinks to external sites to CI of a specific class:

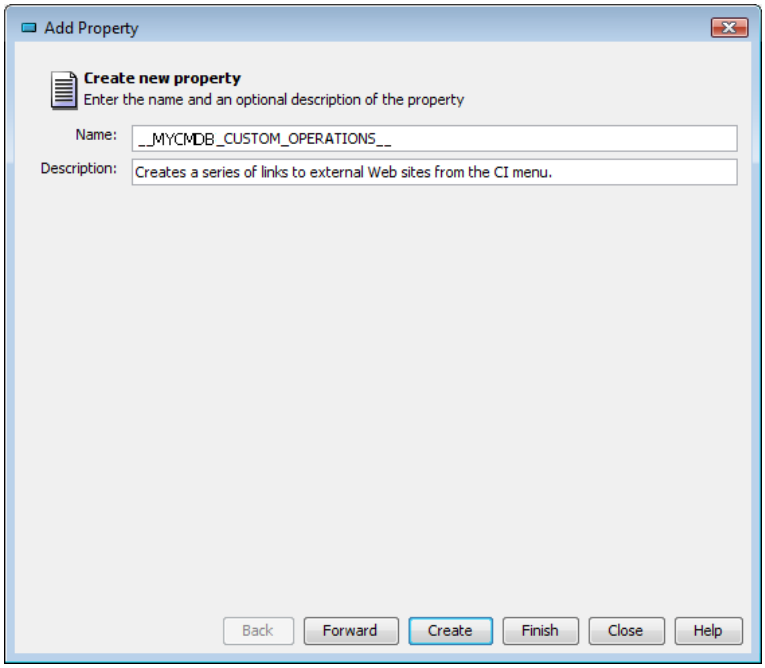
1. In the Operations Center console *Explorer* pane, expand *Administration* > *Metamodel* > *Classes* to the desired class definition.
2. Right-click the class and select *Properties*. The *Properties* dialog opens:



3. Click to select the property page definition (in our example, this is the *CIM_ManagedElement_Page* object) under *Models* and click *Edit*. The *Edit Property Page* opens:



4 Click *Create*. The *Create New Property* dialog opens.



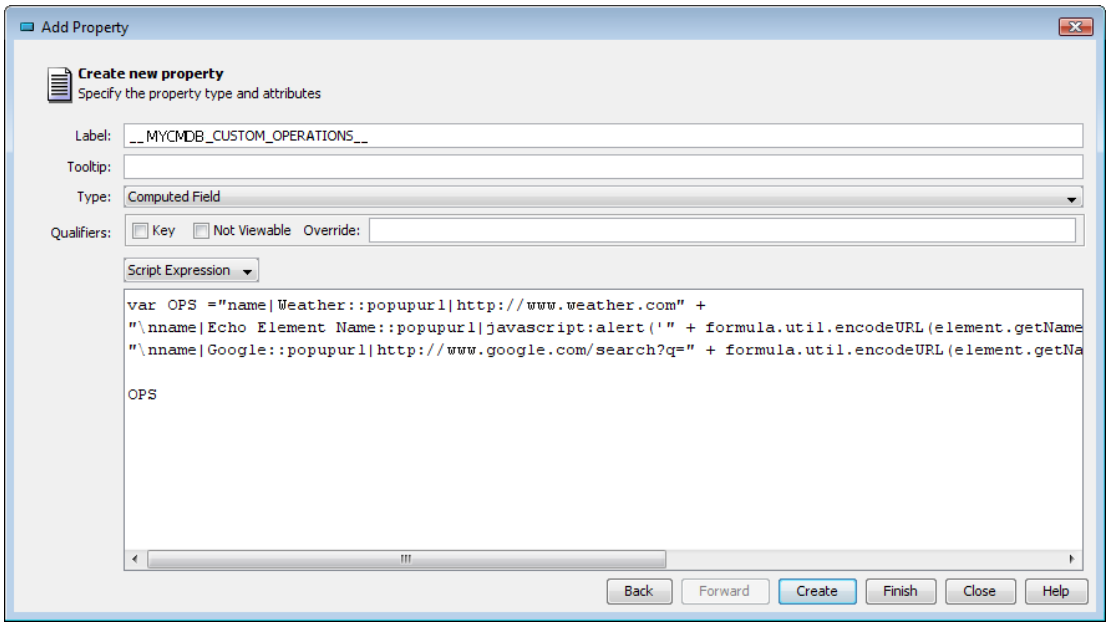
5 Type `__MYCMDB_CUSTOM_OPERATIONS__` in the *Name* field.

IMPORTANT: `__MYCMDB_CUSTOM_OPERATIONS__` must be specified as the property name for this feature to work. In addition, note that this value starts and stops with *double underscores*.

---

6 (Optional) Specify a description in the *Description* field.

7 Click *Forward*. The *Add Property* dialog updates.



8 Select *Computed Field* in the *Type* drop-down list.

For more detailed information about features and functionality in this dialog, see the *Operations Center 5.5 Service Modeling Guide*.

9 Select *Script Expression* from the drop-down list below the *Qualifiers* section.

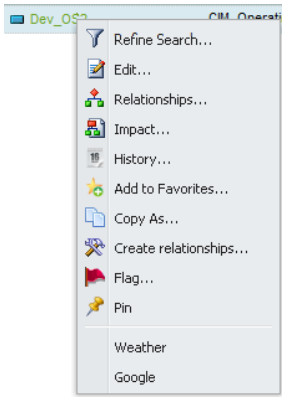
10 Using FormulaScript, specify the script necessary to define the menu options.

For example, we defined 3 menu options. The first opens www.weather.com, the second opens a JavaScript alert with the element name, and the third opens a google search for the element name:

```
var OPS ="name|Weather::popupurl|http://www.weather.com" +
"\nname|Echo Element Name::popupurl|javascript:alert('" +
formula.util.encodeURL(element.getName()) +
"')::windowfeatures|width=800,height=600,windowname=_SCRIPTTEST" +
"\nname|Google::popupurl|http://www.google.com/search?q=" +
formula.util.encodeURL(element.getName()) +
"::windowfeatures|width=800,height=600,windowname=_GOOGLE"
OPS
```

11 Click *Finish*.

The menu options show under standard menu options when right-clicking on any CI belonging to the class (or sub-class) in CMS.



3.4 Configuring CMS for Field Validation Rules

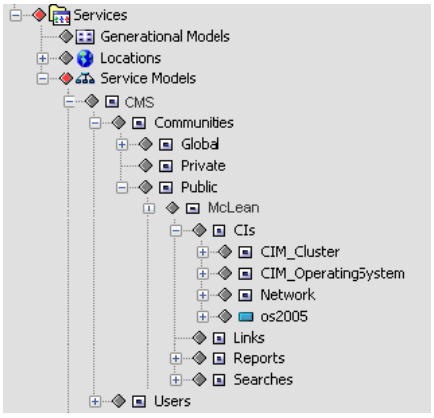
Standard metamodel validation rules are automatically employed by the Operations Center server. When enabled for CMS, these same validation rules can be evaluated against a CI when the CI Edit dialog is updated.

Operations Center server field validation for CMS is configured in the CMS Configuration Manager. For more information, see Step 3c on page 17 in Section 2.1.3, "Configuring CMS Settings," on page 15.

3.5 Understanding Operations Center's Services Hierarchy for CMS

As communities are created within CMS, a new *Services* > *Service Model* hierarchy is built inside Operations Center to support the CMS environment. Figure 3-1 shows how this new hierarchy looks with one community `Mclean` created:

Figure 3-1 *CMS Hierarchy*



Under the *Global*, *Private*, and *Public* elements, as well as the *Users* element (which corresponds to a user's myWorkspace), there is an element for each community containing the following substructure for its associated items:

- **CIs:** Linked and native CI elements.
- **Links:** Favorites.
- **Reports:** Reports.
- **Searches:** Saved searches.

For information on how to integrate and correlate technology and business data from other sources into the CMS Service Model, see the *Operations Center 5.5 Service Modeling Guide*.

In particular, "Understanding Multi-Definition and Multi-Generational Configurations" in the *Operations Center 5.5 Service Modeling Guide* covers element correlation methods for rule or class-based correlation. Class-based correlation, which can be useful for the CMDB, is made possible with Class Relationship Templates, which require modification of the *Metamodel Class* element's properties, detailed in "Defining Classes, Behavior Models, and Property Pages" of the *Operations Center 5.5 Service Modeling Guide*.

3.6 Managing CMS Elements from Operations Center

Because the CMS structure exists in Operations Center (see Section 3.5, "Understanding Operations Center's Services Hierarchy for CMS," on page 32), there are various maintenance activities that can be accomplished through the Operations Center console. These include the deleting of CMS configuration items and users as well as the managing of relationships.

- Section 3.6.1, "Relating CIs," on page 33
- Section 3.6.2, "Retiring CIs," on page 35

3.6.1 Relating CIs

- "Adding a New Relationship" on page 34
- "Deleting a Relationship" on page 35

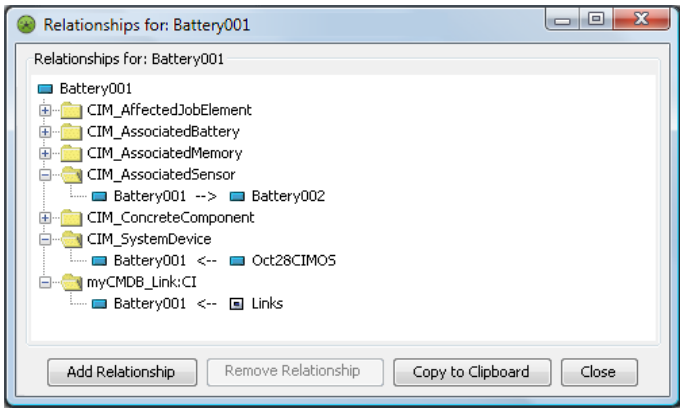
Adding a New Relationship

1 In the Operations Center console *Explorer* pane, navigate to the *CIM* element under *Services* > *Service Models* > *CMS*.

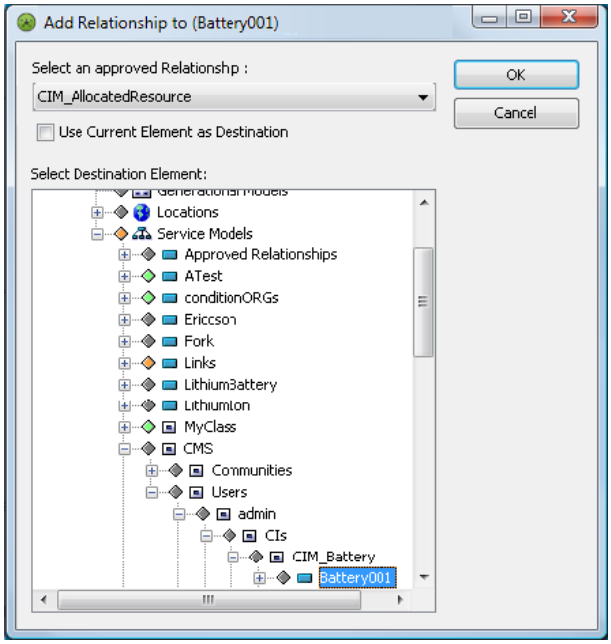
The element must have a CIM class for this option for this functionality to be available.

2 Right-click the desired *CIM* element, then select *Manage Relationships*.

The Relationships dialog box opens, displaying a list of existing relationships for that configuration item:



3 Click *Add Relationship* to open the Add Relationship dialog box:



4 Select a relationship appropriate for the element from the *Select an approved Relationship* drop-down list.

5 Select *Use Current Element as Destination* to define the current element as the destination instead of the source element.

6 Select another element as the destination endpoint (or source endpoint if the check box is selected) from the Select Destination Element window.

7 Click *OK* to add the new relationship.

A new relationship definition displays under the element.

Deleting a Relationship

1 In the Operations Center console *Explorer* pane, navigate to the *CIM* element under *Services* > *Service Models* > *CMS*.

2 Right-click the desired *CIM* element, then select *Manage Relationships*.

The Relationships dialog box opens, displaying a list of existing relationships for that configuration item.

3 Click *Remove Relationship*.

A confirmation message asks whether you wish to delete the relationship.

4 Do one of the following:

- Click *Yes* to confirm the deletion.
- Click *No* to cancel the deletion.

3.6.2 Retiring CIs

CIs at the end of their lifecycle can be retired by using automation scripts in Operations Center. When a specific value on a metamodel property is reached (either manually, using BSCM, or a job function changing the value), the script responds to the event by moving the CI from its location into a similar location under a specified root element in the service model.

Before implementation, decide how users should indicate that a CI is retired. In the simplest case, a metamodel property can be used with a behavior model matcher to cover a subset of the service model. The metamodel property page would have a value that is well known and contains the state of the CI either by using several states (such as preproduction, development, QA, cert, retired, and so on) or simply a True/False value.

The default automation script `/OperationsCenter_install_path/database/scripts/cmdb/Action_RetireConfigurationItem.fs` retires CIs based on the presence of a nonblank value for the supplied property. Alternate approaches can be introduced to this script, or the script modified to handle a series of state values (such as production, qa, dev, test, retired, and so on).

The following step-by-step tasks demonstrate setting up a Retired property that triggers the automation script that retires a CI when Retired is set to True. For additional information about automations, see "Defining and Managing Automation Events" in the *Operations Center 5.5 Server Configuration Guide*.

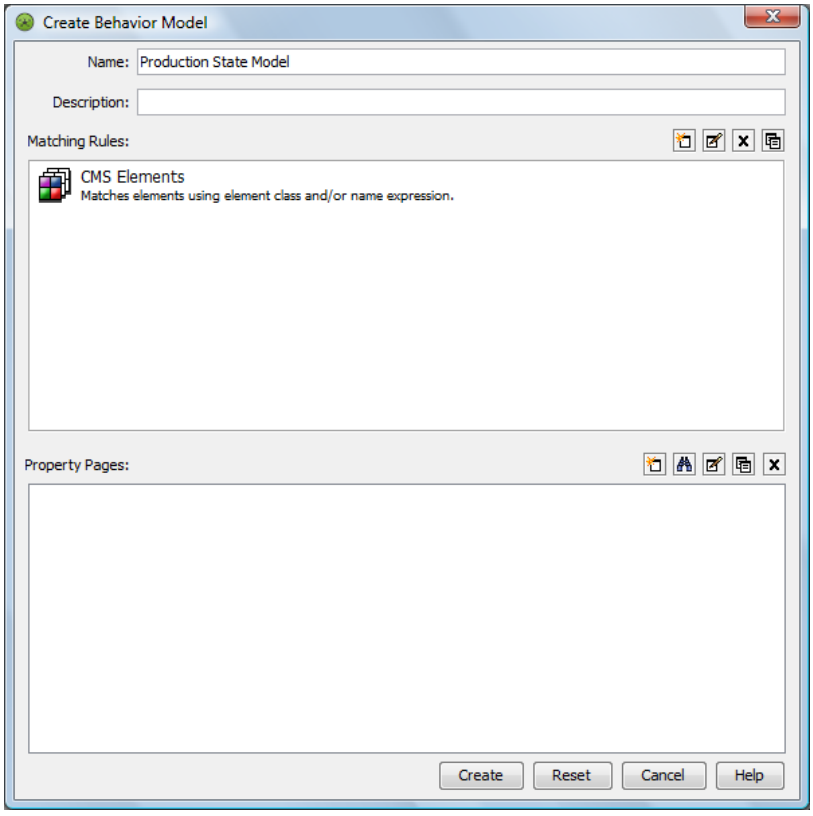
To enable the automation script to retire CIs when a property is set to True, do the following in order:

1. "Creating the New Property and the Accepted Values" on page 36
2. "Creating an Element" on page 39
3. "Setting Up Automation" on page 40
4. "Retiring an Item to Verify" on page 41

Creating the New Property and the Accepted Values

For this example, we create Production State behavior model that has a Production State property page with a `True/False Retired` property.

1. From the *Explorer* pane, navigate to the *Administration* > *Metamodel* > *Behavior Models* element.
2. Right-click the *Behavior Models* element, then select *Create Behavior Model*, to open the Create Behavior Model dialog box:



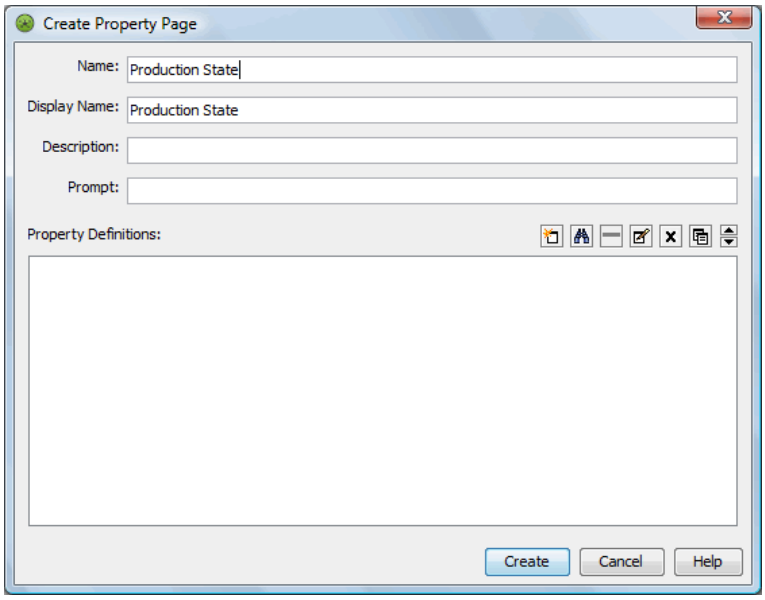
3. Specify the name of the new model.

   For example, we named ours `Production State Model`.
4. Define a matching rule to include all CMS elements.

   We defined a rule to consider all elements under *Service Models*.

   For more information on creating behavior models and defining matching rules, see the *Operations Center 5.5 Service Modeling Guide*.

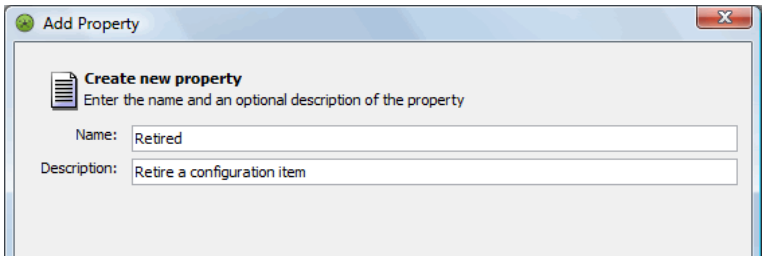
5 Right-click the *Create a Property Page* icon, to open the Create Property Page dialog box:



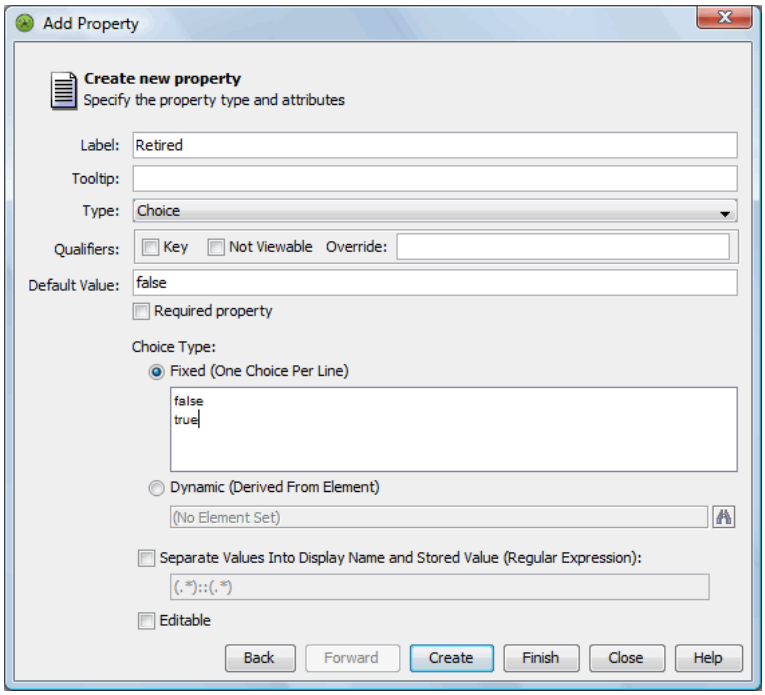
6 Specify the name of the new property page.

We named ours `Production State`.

7 Click the *Create a Property* icon, to open the Add Property dialog box:



8 Specify the name of the new property, then click *Forward* to continue.



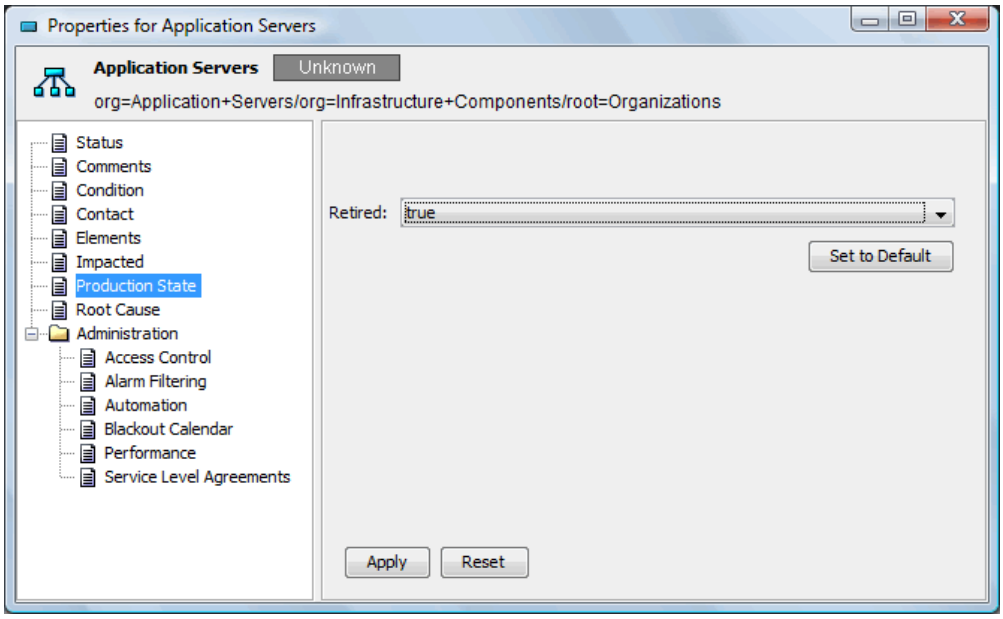
9 Define the type and accepted values of the new property.

10 To define a True/False value, select *Choice* for the property type and enter True and False for *Choice Type (Fixed)*.

11 Click *Finish* to create the new property.

The Add Property dialog box closes. The new property is added to the Create Property Page dialog box.

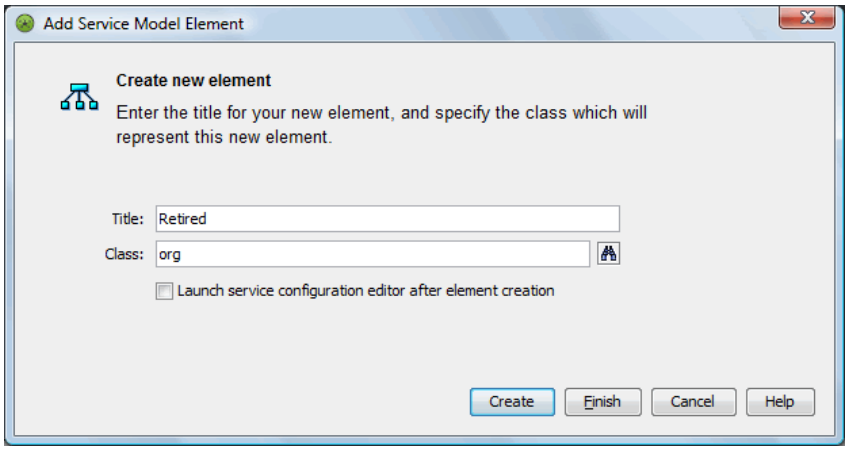
12 Click *Create* to create the new property page.



13 Test that you can set this value on elements arbitrarily through the property pages of the element using the Operations Center console.

Creating an Element

1 Create an element under *Services* > *Service Models* that retired CIs should be moved to:



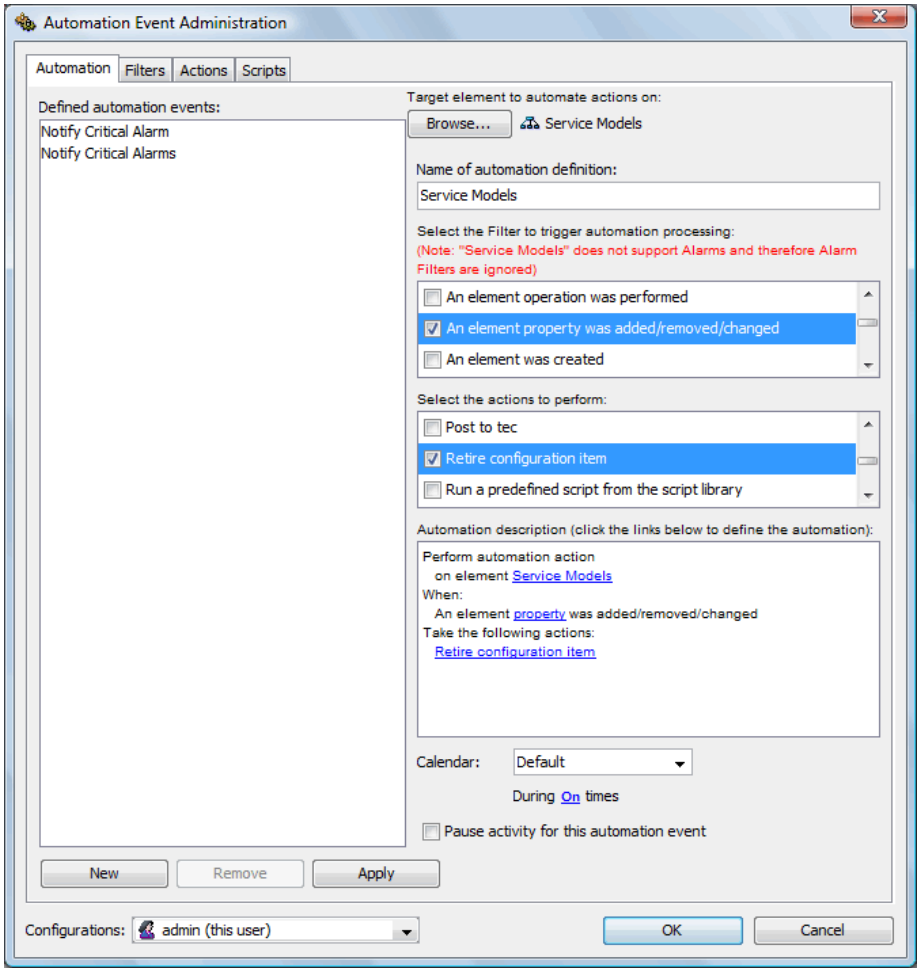
2 View *Properties* on the element and note the DName.

For example, we created a *Retired* element.

Setting Up Automation

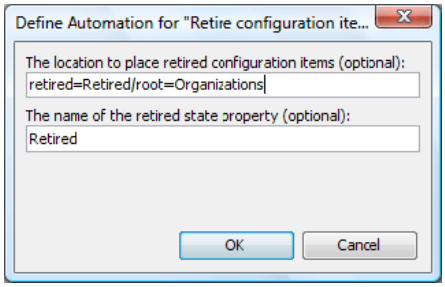
To set up automation for the automation server (nonuser) on the branch of elements that contain this service model:

1 Select the *An Element Property Was Added/Changed/Removed* check box for the *Filter* to trigger automation processing:



2 Select the *Retire Configuration Item* check box for the action to perform.

3 Specify settings for the *Retire* configuration item action.



4 Specify the DName of the *Retired CIs Service Model* element where elements are placed after being marked as retired.

5 Specify the name of the property to monitor.

6 Click *OK*.

Retiring an Item to Verify

To retire an item to verify that elements are retired as expected:

1 View the Properties for a CI element and set the Production State's Retired property to True.

2 Verify that the element is moved from its original location to *Services* > *Service Models* > *Retired*.

3.7 Creating Custom Operations

Custom operations that are created in the Operations Center console, allow for the customization of right-click operations on CI elements. These operations can:

- Open a URL in a CMS pop-up window.
- Open a URL in a new browser window.
- Retrieve and display the contents from a URL.
- Perform an action using client-side javascript.

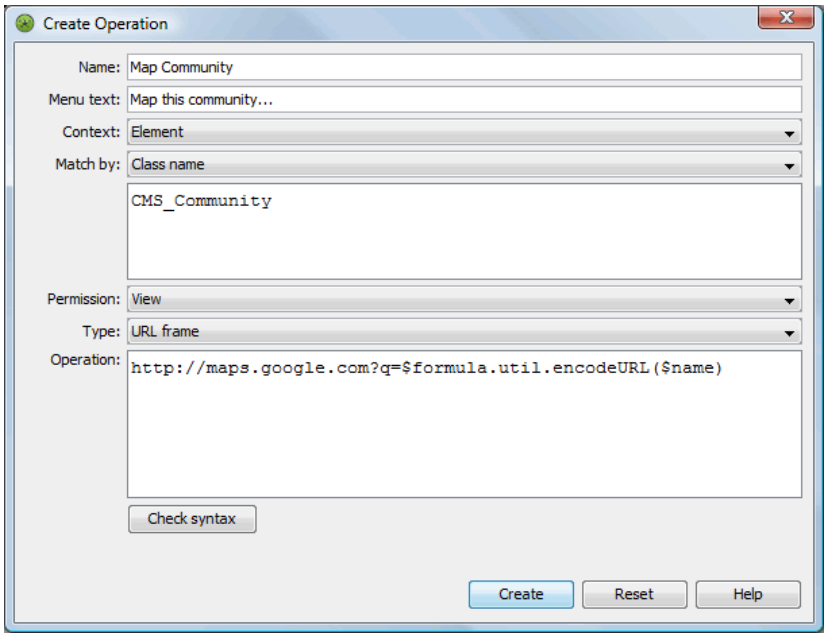
To facilitate the creation of operations that can modify the CMS user interface, the CMS client-side JavaScript allows for the export of a public interface to certain API functionality. Similar to the `window` top-level handle that a browser JavaScript depends on, the CMS API exposes a `mycmdb` object on the `window` global object. The `mycmdb` object contains methods to allow an extension writer the ability to programmatically control the CMS user interface. For more information about the CMS API, see the jsdocs located at */OperationsCenter_CMS_install_path/*`webapps/noc/cms/docs/JSAPI`.

To create a custom operation for CI elements:

1 From the *Explorer* pane, navigate to the *Administration* > *Server* > *Operation Definitions* element.

2 Right-click *Operation Definitions* and select *Create Operation*.

The Create Operation dialog box displays.



For additional information about creating an operation, see *Modifying Element and Alarm Menus* in the *Operations Center 5.5 Server Configuration Guide*.

3 Specify the definition name in the *Name* field.

4 Specify the custom operation text in the *Menu text* field.

5 In the *Match by* drop-down list, select *Class name*, the specify the CMS-related class name in the text area.

6 In the *Permission* drop-down list, select *View*.

7 In the *Type* drop-down list, select one of the following:

- **URL Popup:** to open a URL in a CMS pop-up window.
- **URL Frame:** to open a URL in a new browser window.
- **HTML Result:** to retrieve and display the contents from a URL.
- **Web Script:** to perform an action using client-side javascript.

8 In the *Operation* text area, type the command that the menu operation is to execute.

9 Click *Apply* to save the custom operation.

3.8 Understanding Event Time Stamps

No setting in CMS is required to set local time zone for the user experience. Instead, the Web browser automatically adjusts event time stamps based on the time zone as set locally on the user's desktop.

4 Navigating and Customizing Your Pages

This section covers basic access, standard concepts, and introductory information for CMS:

- Section 4.1, “Logging On to CMS,” on page 43
- Section 4.2, “Introducing CMS,” on page 45
- Section 4.3, “Understanding CMS Default Workspaces,” on page 46
- Section 4.4, “Using Communities and Community Membership,” on page 46
- Section 4.5, “Navigating CMS,” on page 48
- Section 4.6, “Setting Preferences,” on page 51
- Section 4.7, “Setting Display Options in Summary Pages,” on page 52

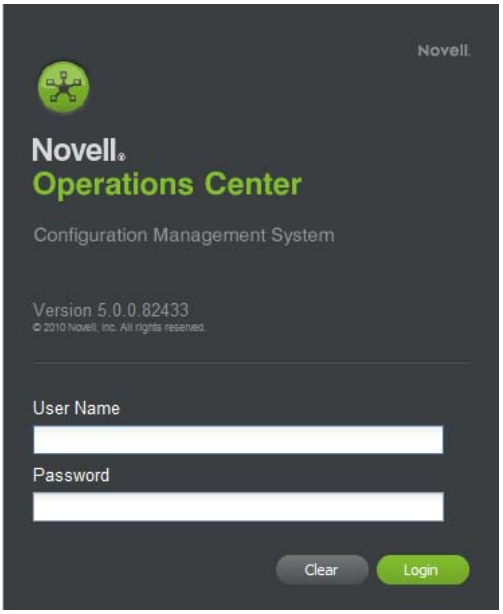
4.1 Logging On to CMS

CMS is a Web application accessible through a Web browser.

- Section 4.1.1, “Accessing CMS,” on page 43
- Section 4.1.2, “Changing Your Password and Contact Information,” on page 44

4.1.1 Accessing CMS

1. Obtain the Web address for the CMS installation from your Operations Center administrator.
2. Specify the Web address in your Web browser to open the CMS login page:



3 Enter your login credentials in the *User Name* and *Password* fields.

4 Click *Login*.

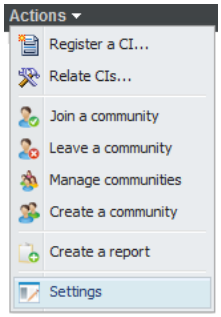
The Home page displays on successful authentication.

4.1.2 Changing Your Password and Contact Information

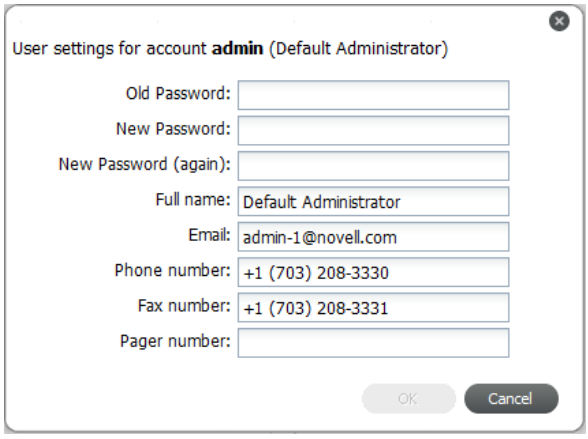
With CMS you have the ability to set your own password and update your contact settings. When you first log in to CMS, you can change your password or verify your contact information is correct.

To change your password or update your contact information:

1 Click *Actions*, then select *Settings* to open the mySettings dialog box.



2 Click *User Settings* to open the User Settings dialog box:



3 Verify your contact information.

Make any necessary changes and/or update your password.

4 Click *OK* to save your changes.

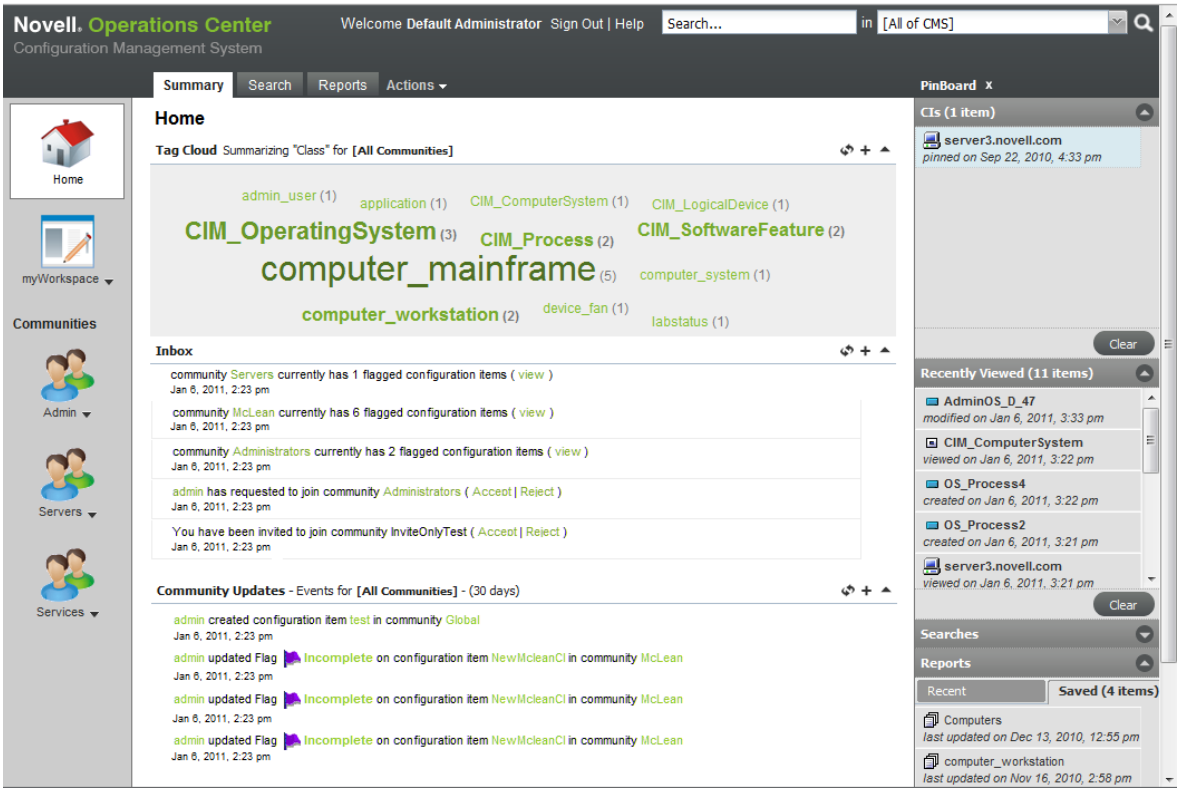
4.2 Introducing CMS

On successful login, the main Summary page automatically displays. This is the Home page and it displays information about all of your communities, based on your preferences. For more information on preferences, see Section 4.6, “Setting Preferences,” on page 51.

When you first log in to the CMS, you won’t yet be a member of any communities and because of this, there won’t be any information to display. You could have a couple of invitations in your Inbox to join communities. After you join, you’ll automatically see information about these communities in your pages.

Figure 4-1 shows the Home page and gives a quick look at the layout and some of the features in CMS:

Figure 4-1 *CMS Home Page*



Features in Summary pages can vary depending on your settings and selections. However, basic features include:

- **Tag Cloud:** Shows how many items match a class or attribute. Click a tag to drill in to a list of matching CIs.
- **Inbox:** Get invitations to join communities.
- **Community Updates:** Review recent activity in your communities.

- **Pinboard:** View bookmarks to items persisted across sessions as well as recently viewed items. Quickly return to something you've "pinned" or viewed recently.

  For more information on bookmarks, see Section 4.5.2, "Using the Pinboard to Navigate (aka Bookmarking)," on page 50.

TIP: Click *Username* in the *Inbox* or *Community Updates* to view the contact information for that user.

4.3 Understanding CMS Default Workspaces

Aside from communities that are created as a result of your CMS implementation being developed to represent your CMDB, there are two default workspaces that can be used to group and work with CMDB items and information. They include:

- **myWorkspace:** A private area accessible by you only. For ideas on how you might use the myWorkspace area, see Chapter 8, "Using the myWorkspace Sandbox," on page 101.
- **Public:** The "default" community that is created automatically for CMS implementations. All users can see, search, and access items created in the Public workspace area.

4.4 Using Communities and Community Membership

Communities are a way to group items that a specific set of members can find useful and work together to maintain. There are three ways to become a member of a community:

- **Open:** These communities allow you to join whenever you want.
- **Invite Only:** These communities will send an invitation to invite you to join.
- **By Request:** These communities allow you to request membership from the community owner.

When you receive an invitation to join a community and you accept it, a community icon shows in your community list (left sidebar) by default. You can hide a community's icon later in your preferences if you decide it isn't a community that you will reference often. For more information on preferences, see Section 4.6, "Setting Preferences," on page 51.

A community icon () with a padlock indicates that you are a consumer-type member without owner or producer permissions. Therefore, all data is available to view, search and report on, but you won't be able to create new CIs or save Searches/Reports to community pages.

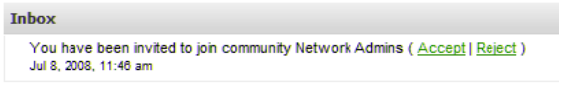
Each of your communities contributes to the information summarized on the Home's Summary page. If you want to create your own community, for more information about creating and setting up a community, see Chapter 7, "Managing Communities," on page 91.

The following topics provide instructions regarding community membership:

- Section 4.4.1, "Accepting an Invitation to Join a Community," on page 47
- Section 4.4.2, "Finding Open Communities to Join," on page 47
- Section 4.4.3, "Leaving Communities," on page 47

4.4.1 Accepting an Invitation to Join a Community

1. Do the following, as applicable:
   - If invitations to join communities are found in your Inbox, to accept the invitation, click *Accept* next to the invitation to display a confirmation message:



   - If a community invitation disappears from your Inbox before you have a chance to accept it, click *Actions*, select *Manage Communities*, then browse to the desired community.
2. Do one of the following:
   - Click *Yes* to confirm that you wish to join.
   - Click *No* to cancel and not join the community.

4.4.2 Finding Open Communities to Join

1. Click *Action* at the top of the page, then select *Join Communities*.

   A list of all available communities displays.
2. Find the desired community, then click *Join*.

   If the community is Open, you are now a member of the community and a community icon displays on the left side of your pages.

   If the community is By Request, the owner of the community must approve your request before you can become a member.

4.4.3 Leaving Communities

- "Leaving a Single Community" on page 47
- "Leaving Multiple Communities" on page 47

Leaving a Single Community

1. Click the community name under the community's icon, then select *Details*.

   An Edit Community dialog box displays.
2. Click *Leave* next to Member Status.
3. From the confirmation message, click *Yes* to cancel your membership.

Leaving Multiple Communities

To withdraw from more than one community, you can follow the directions in "Leaving a Single Community" on page 47 individually for each community, or you can do the following:

1. Click *Action*, then select *Leave a community*.

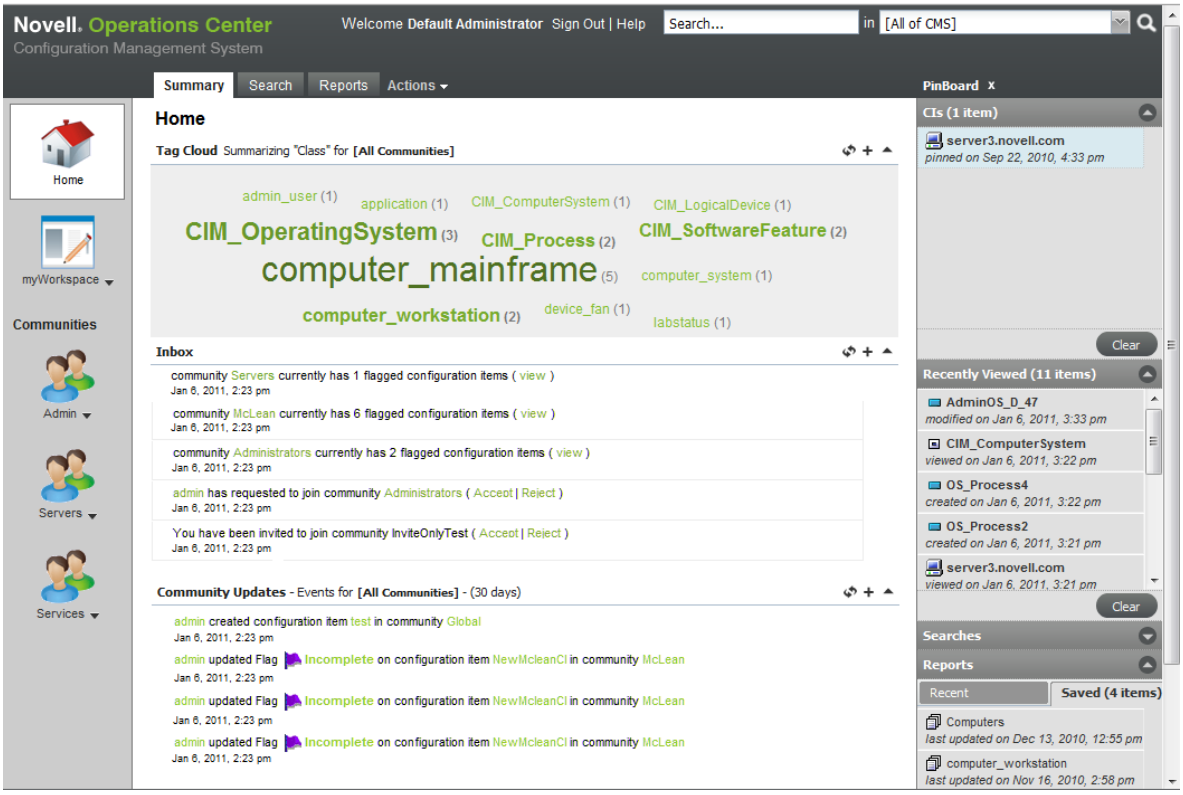
   A list of all communities you belong to displays.
2. Click *Leave* for each community where you wish to cancel your membership.

4.5 Navigating CMS

CMS was designed to help you find information fast and to look at slices of information easily. There are three main ways to find what you are looking for:

- **Filtering:** Filter the page by selecting a community icon from the left sidebar icons. Home always shows information about all communities that you are a member of. For more information, see Section 4.5.1, "Selecting Pages and Filtering by Community," on page 49.
- **Pinning:** Pin something to your pinboard so you can find it later or use your *History* list. For more information, see Section 4.5.2, "Using the Pinboard to Navigate (aka Bookmarking)," on page 50.
- **Searching:** Use search to find a CI, Saved Search or Report you are looking for. For more information, see Section 4.5.3, "Using Search or Tag Clouds to Navigate," on page 50.

In the illustration below, you'll notice search features at the top of the page, the pinboard in the right panel, and filter icons on the left that allow you to select a specific community:



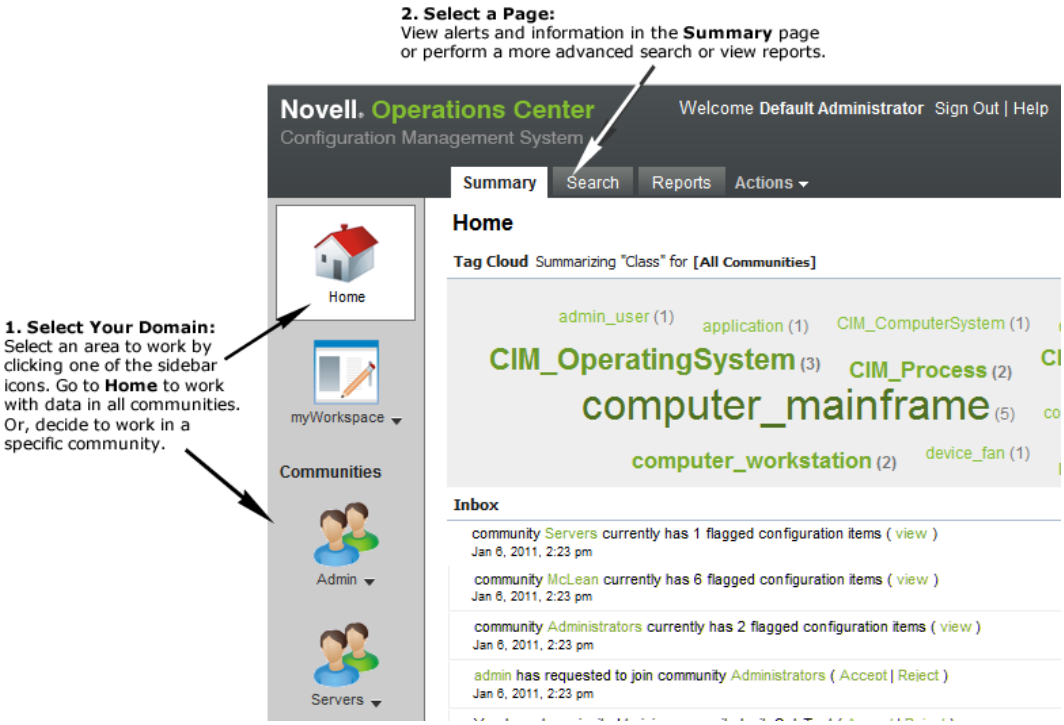
The following sections describe the main navigational features of CMS:

- Section 4.5.1, "Selecting Pages and Filtering by Community," on page 49
- Section 4.5.2, "Using the Pinboard to Navigate (aka Bookmarking)," on page 50
- Section 4.5.3, "Using Search or Tag Clouds to Navigate," on page 50

4.5.1 Selecting Pages and Filtering by Community

There are two sets of selectors that allow you to select and narrow the information you are viewing. One lets you filter information by community. The other lets you change the view or features on the same information.

1 To select your domain, use the left sidebar icons to filter the information shown:



Do any of the following:

- Click the *Home* icon to show information about all your communities.
- Click the *myWorkspace* icon to navigate to your own working area where you can build and play without affecting production environments.
- Click any community icon to show information about only that community.

  Click the community name under the community's icon to perform actions on that community.

2 To change your page, use the main navigation links (top links) to go to three distinct views (or pages):

Summary: An overall view of your data, including a tag cloud for click drill-down to type of CIs, and Inbox and events feed for notification of what has been going on. This can be further customized to show a report of your selection.

Search: An advanced search feature with a list of all your saved searches.

Reports: A listing of all reports available to run.

4.5.2 Using the Pinboard to Navigate (aka Bookmarking)

The pinboard is a useful place to pin or bookmark CIs you are currently working with or might to revisit often. It is also a place to locate recent or saved reports and searches.

To bookmark CIs to the Pinboard:

1. To add a CI, do one of the following:
   - Right-click the CI name, then select *Pin*.
   - From the Edit CI dialog box, click the Pin icon.
   - Drag and drop a CI from *Search Results* over to the *CI* section of the pinboard.

   The CI is added to the *CI* section of the pinboard.
2. To remove a CI, search or report from the pinboard, right-click the item, then select *Remove*.

   The link is removed from the pinboard, but the item is not deleted from the CMS.

4.5.3 Using Search or Tag Clouds to Navigate

What's a faster way to find something other than search? For many of us, this is the first thing we do when we go to a Web site. Well, you can do that, too, in CMS.

Do any of the following:

- Enter your search into the Search box at the top of the page.
- Click *Search* and build an advanced search query.
- Use the tags in your *Tag Cloud* (on the Summary page) to immediately see matching CIs based on class or attribute.

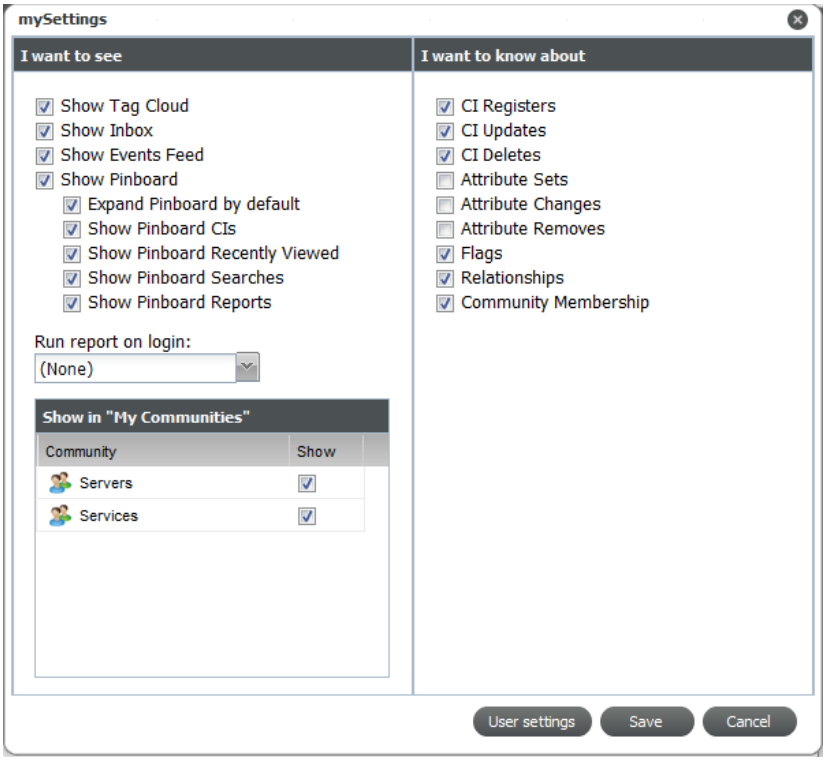
  For more information on search and tag clouds, see Chapter 5, "Viewing CIs, Searching, and Reporting," on page 55.

4.6 Setting Preferences

Overall preferences can be set to determine the features included in your Summary pages, information included in your events feeds, default behavior for the pinboard, and the communities to show in your *Communities* list (left sidebar).

Figure 4-2 illustrates setting preferences for the Summary page features and event notifications:

Figure 4-2 *mySettings Summary Page*



Options in the *I want to see* section of *mySettings* let you select the panels or functionality that are available in your CMS desktop and Summary pages. Options in the *I want to know about* allow you to customize the type of notifications you'll see in events feeds.

To set your preferences:

1. From the *Actions* menu, select *Settings* to open the mySettings dialog box.
2. From the *I want to see* section, to select the desired options to turn various features on/off:
   - Select any of check boxes to display the desired features on your Summary pages or desktop.
   - From the *Run Report on Login* drop-down, select a report to add it to the bottom your Home's Summary page.

     The report is added on your next login.
   - From the *Show in My Communities* section, select the check boxes for the communities that you want to have a community icon for in the left navigation of your pages.
3. From the *I want to know about* section, select any desired check boxes to customize the notifications you receive in your events feeds.
4. Click *Save* to update your preferences.

4.7 Setting Display Options in Summary Pages

The Summary page panels can be customized to display on the information you'd like to see. For example, in your Home page's *Tag Cloud*, you might only want to see classes for one of your communities, versus all your communities. Or, you might decide to filter out Flag notifications in your Inbox. These settings are remembered for your next login and are specific to the domain (*Home*, *myWorkspace* or a selected community) that you set them for.

- Section 4.7.1, "Customizing the Tag Cloud," on page 52
- Section 4.7.2, "Customizing the Inbox," on page 52
- Section 4.7.3, "Customizing the Community Updates News Feed," on page 53

4.7.1 Customizing the Tag Cloud

There are two filtering options for the tag cloud display.

- **Attribute:** Select the CI attribute to determine the tags based on the values available from matching CIs based on the Community filter setting.
- **Community:** Select to display tags from all your communities, the myWorkspace area, or a selected community.

To customize your tag cloud:

1. Click + (*Configure*) at the top of the tag cloud to display a drop-down menu:



2. Select the desired attribute under *Show Attribute* to set the criteria used to display tags in the tag cloud.
3. To create a new *Attribute* filter, click *Other* to open a dialog box.
4. Enter the attribute name to search for.
5. Select the desired option under *Show Community* to refine tag cloud results by domain.

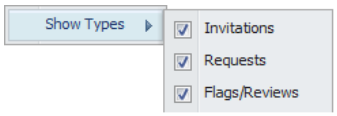
   This option is only available for Home as tag clouds for community pages are community-specific.

4.7.2 Customizing the Inbox

The Inbox can be customized to show or hide community invitations, community request, and/or flag/review notifications.

To customize your inbox:

1. Click + (*Customize*) at the top of the *Inbox* section to display a drop-down menu:



2. Select or deselect the desired options for showing invitations, requests, and/or flags or reviews.

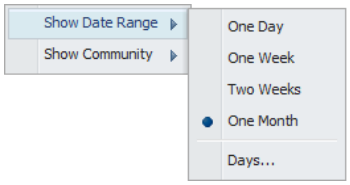
4.7.3 Customizing the Community Updates News Feed

There are two filters that can be set to customize the news feed for your communities.

- **Date Range:** Limit or expand the scope of the list based on date range or specific date.
- **Community:** Select to display events for all your communities or a selected community.

To customize your community news feed:

1 Click + (*Customize*) at the top of the *Community Updates* section to display a drop-down menu:



2 Select the desired options under *Show Date Range* to set time boundaries for event feed information.

3 Select the desired options under *Show Community* to refine your events feed by domain.

This option is only available for Home as feeds for community pages are community-specific.

5 Viewing CIs, Searching, and Reporting

The following sections cover accessing CI information, searching for CIs, and using reports to view, analyze and share CI information:

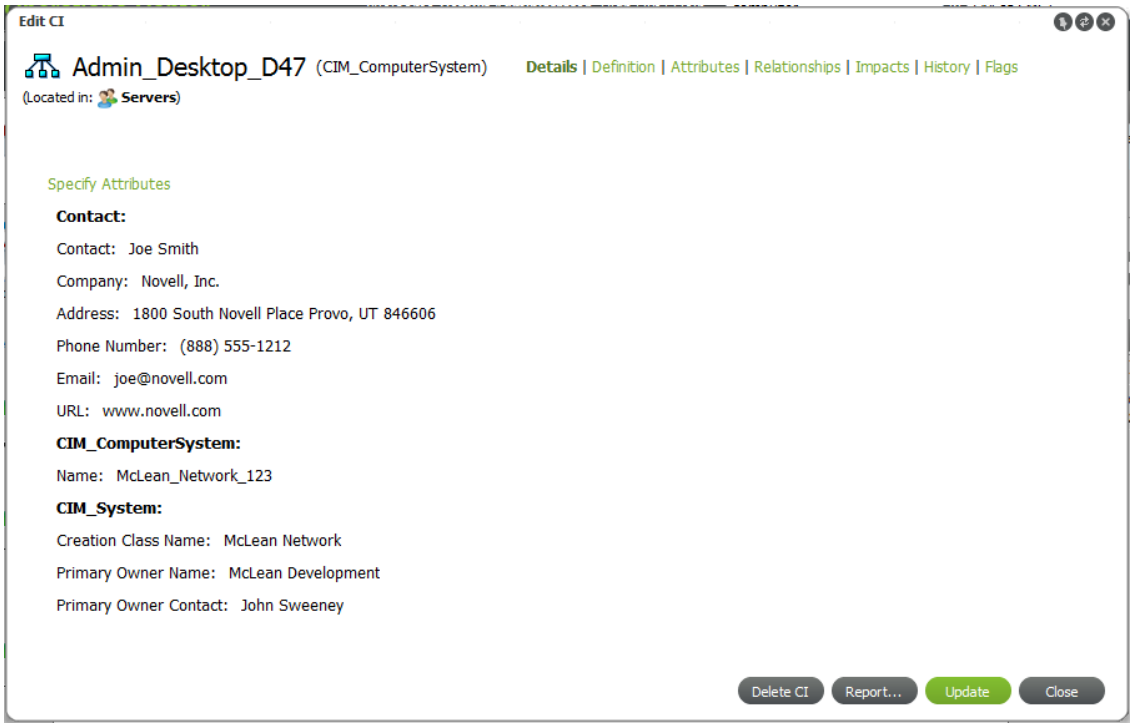
- Section 5.1, “Viewing CI Details,” on page 55
- Section 5.2, “Searching in CMS,” on page 56
- Section 5.3, “Using Reporting,” on page 62

5.1 Viewing CI Details

CIs can be located various ways through CMS, including from a tag cloud, the pinboard, or via a search.

To view CI details:

1 Anywhere a CI name is linked, click it to view or edit the CI details.



2 To view or edit any of the following information, click the associated link at the top of the page:

Definition: CI name and class.

Attributes: CI properties.

Relationships: Relationship rules associate the CI with other CIs. You can navigate a visual diagram of related CIs.

Impacts: You can navigate a visual diagram of CIs the current CI impacts.

History: A list and calendar timeline of all events related to the CI.

Flags: A list of all flags and comments on the CI.

For more information about creating CIs or editing CI information, see Chapter 6, "Contributing to the CMDB," on page 71.

3 While viewing or editing CI details and you think someone else might have updated the same CI, click (*Refresh*) to update information.

5.2 Searching in CMS

- Section 5.2.1, "Understanding Searching in CMS," on page 56
- Section 5.2.2, "Drilling In with the Tag Cloud," on page 58
- Section 5.2.3, "Performing a Simple Search," on page 58
- Section 5.2.4, "Performing an Advanced Search," on page 58
- Section 5.2.5, "Refining a Search," on page 61
- Section 5.2.6, "Saving a Search Query," on page 62
- Section 5.2.7, "Renaming a Search Query," on page 62

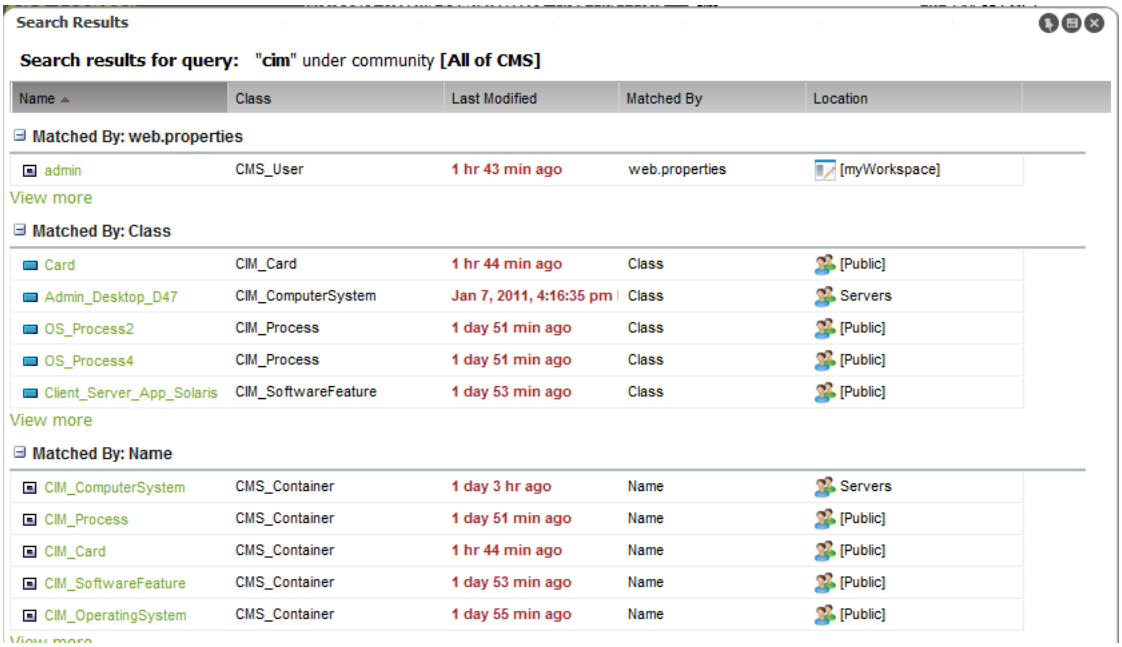
5.2.1 Understanding Searching in CMS

Searches are likely to be the fastest way to locate a CI or group of CIs of interest. After you find the CI you are looking for, you can select the CI and:

- Refine the search based on specific attributes of the selected CI.
- Open the CI details and edit information about the CI if you have permissions.
- View and navigate related CI or see what the CI directly impacts.
- View the location of the CI. For linked CIs, the location always shows the location of the actual CI, rather than the linked location.
- View event history for the CI.
- Right-click the CI link to edit the CI to do any of the following:
  - Further refine your search.
  - Add the CI to Favorites or the pinboard.
  - Edit the CI or create new relationships.
  - Add a flag.
  - View relationships, history or impacts.
  - Create a new CI based on that CI.

Figure 5-1 illustrates a Search Results page:

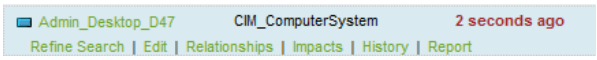
Figure 5-1 *Search Results Page*



There are a number of ways to search for the data you need through CMS. They include:

- One click drill-in using the tag cloud (found on the main landing page)
- Perform a simple search using the Search box
- Perform an advanced search

From any search results, you can click to expand the entry for any item and expose links to edit the CI (for the features above), run a report on the CI, or use other links to view the diagrams for relationship and impacts, or historical timeline:



However, the viewers opened by the *Relationships* and *History* links as shown above (and from the CI's right-click menu) are limited in functionality—they only show the visual representation of relationships and the historical timeline. To access the detail listings and the Relationship Builder, you must edit the CI.

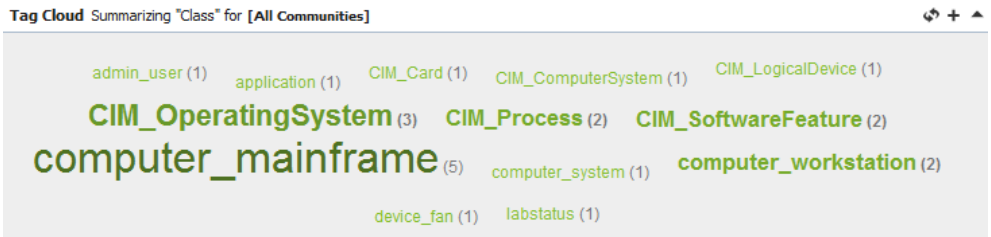
Search queries can be saved and rerun on demand later.

5.2.2 Drilling In with the Tag Cloud

The Tag Cloud is a useful feature that gives overview of your CIs. On the Home Summary page, the tag cloud can be customized to search all CIs or only a specific community. It can also be further tailored to show tags based on class name or any attribute name.

With a tag cloud, you can see immediately which category has the most CIs (largest word) and the exact number of matching CIs. Click a tag to view a list of matching CIs.

Figure 5-2 *List of Matching CIs*

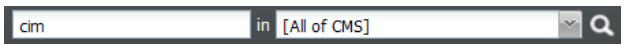


5.2.3 Performing a Simple Search

You can search for matches in your entire CMS environment (all communities and myWorkspace) or only in a specific community.

To perform a simple search:

1 The Search dialog box is available at the top of all CMS pages:



2 Enter your search criteria in the first field.

3 Select a domain from the second field's drop-down list.

4 Click *Go*.

5.2.4 Performing an Advanced Search

Use the Advanced Search to set up an advanced search query based on attribute/class matches or Boolean expressions.

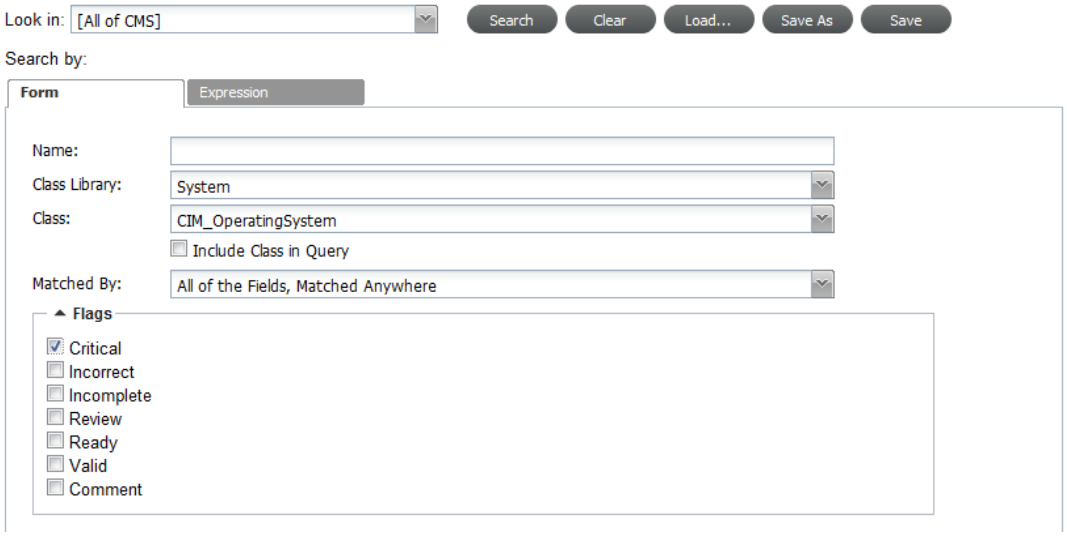
If any criteria is specified on the *Expression* tab, any settings on the *Form* tab are disregarded in the search.

Perform an advanced search using one of the following methods:

- "Performing an Advanced Search with Simple AND/OR Matchers" on page 59
- "Performing an Advanced Search Using a Boolean Expression" on page 60

Performing an Advanced Search with Simple AND/OR Matchers

1 Click the main *Search* tab to open the Search page:



To work with an existing search, do one of the following:

- Click *Load* to select a saved search.
- Click and drag a saved search over from the pinboard.

2 To narrow the domain of the search, select the searchable area from the *Look In* drop-down list. Select a specific community, or select:

All of CMS: Searches public space, all communities, and myWorkspace.

All Communities: Searches only the communities you belong to.

Public: Searches the default community that all users have access to.

myWorkspace: Searches your myWorkspace area only.

3 Specify the parameters of the desired search by specifying any one of the following search criteria on the *Form* tab:

- To match by name, enter the full or partial name to match in the *Name* field.

  If specifying a partial name, be sure to specify a *Matched By* value that contains *Matched Anywhere* (see Step 4).

- To specify which class library to search in, select a library from the *Class Library* drop-down list.
- To specify which classes to search, select a class from the *Class* drop-down list.

  Select the *Include Class in Query* check box to consider the class value in the search.

  Depending on the class selection, the additional attribute selectors display under the *Flags* section for more complex search criteria.

TIP: Begin typing in the *Class* drop-down list and CMS narrows the list of items to select from.

---

4 From the *Matched By* drop-down list, specify how the search criteria are evaluated.

Select from:

- *All of the Fields, Matched Anywhere*
- *All of the Fields, Matched Exactly*
- *Any of the Fields, Matched Anywhere*
- *Any of the Fields, Matched Exactly*

5 From the *Flags* section, select the check boxes of any or all flags that a matching CI must contain.

6 If a class is selected from the *Class* drop-down list, specify any search criteria using the available class attributes fields found beneath the *Flags* section including, but not limited to:

- Relationships
- Contact Information
- Class Specific Information

Also specify the search columns to include in the results by adding, removing, and ordering column names in the Search Results Columns section.

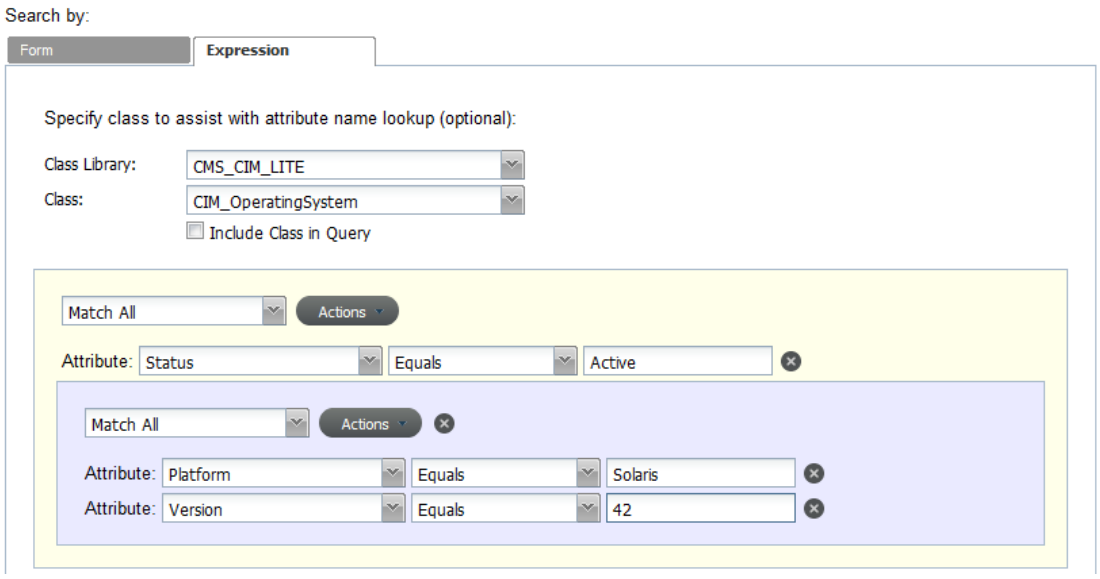
7 Click *Search* to run the search query.

Performing an Advanced Search Using a Boolean Expression

1 Click the main *Search* tab to open the Search page.

2 To narrow the domain of the search, select a community from the *Look In* drop-down list.

3 Click the *Expression* tab to specify advanced expressions for the search query.



4 If desired, select a class library and class from the respective drop-down lists.

Selecting a class library and/or class narrows options to a more useful (and shorter) list in the *Attribute* selectors used to define the expressions.

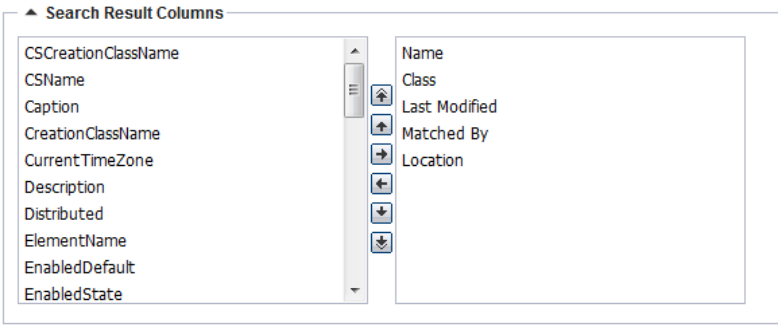
5 Do one of the following:

- Click *Actions*, then select *Add Field* to add a single expression.
- Click *Actions*, then select *Add Group* to add a group of expressions that are evaluated together before continuing to evaluate any additional expressions.

Expressions are evaluated in the order they are defined.

New expression fields and groups are added below existing fields or groups.

6 Modify the information shown in the search results by adding, removing, and ordering columns in the Search Results Column section:



Columns vary depending on the class selected.

7 Click *Search* to run the search query.

5.2.5 Refining a Search

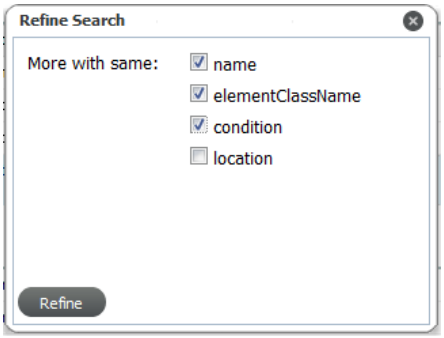
CMS allows you to search for a CI of interest and gives you the ability to quickly search for other CIs that are similar from those search results.

To refine a search:

1 From any Search Results dialog box, locate a CI has some attribute or quality that you want to use to search for similar CIs.

2 Click the row of the CI to select and expand the CI's options.

3 Click *Refine Search* under the selected CI to open the Refine Search dialog box:



4 Select any desirable options to assist the search in finding similar CIs.

5 Click *Refine*.

The dialog box closes and search results are returned.

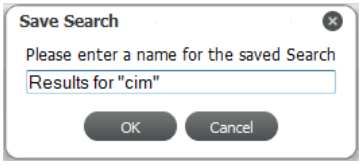
5.2.6 Saving a Search Query

You can save any of your search queries so that they can be easily rerun at another time.

To save a search:

1. Do one of the following:
   - From any Search Results, click (*Pin*).
   - From the Search page, specify the desired search criteria, then click *Save*.

   A Save Search dialog box opens.
2. Specify the desired name for the saved search.



   Names of saved searches must be unique. If a search already exists with the same name, you are prompted to enter another name.
3. Click *OK* and the search is saved and added to the pinboard on the *Saved Searches* tab.

5.2.7 Renaming a Search Query

To rename a saved search:

1. From the *Searches* section of the pinboard, right-click the search name, then click *Rename*.
2. Edit the name.

5.3 Using Reporting

CMS has a variety of report types that are available by default. Community owners and producers can create community reports that can be accessed by community members. You can also create any number of personal reports to meet your needs.

To view reports exported from CMS to into the Mircosoft Excel, Word, or PowerPoint formats, you need Mircosoft Office 2003 or later.

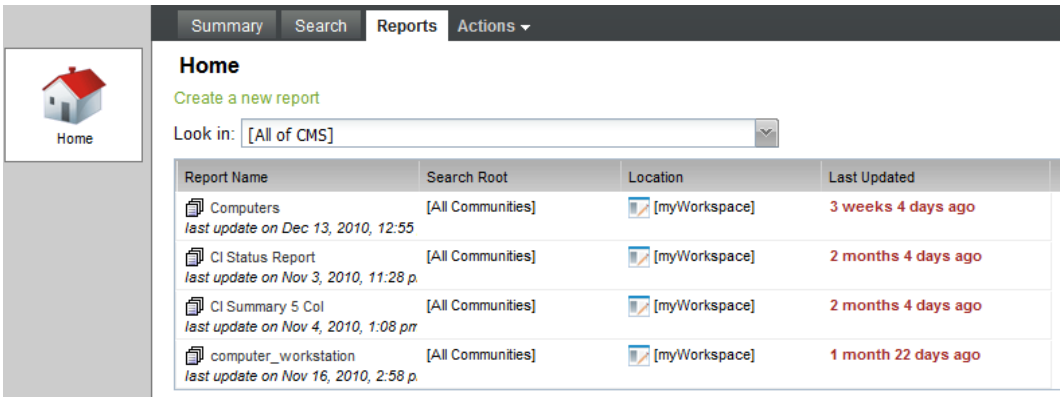
The following sections cover how to run CMS reports:

- Section 5.3.1, “Understanding the Reports Page,” on page 63
- Section 5.3.2, “Understanding Report Parameters,” on page 64
- Section 5.3.3, “Running a Quick Report on a Single CI,” on page 68
- Section 5.3.4, “Running Reports,” on page 68
- Section 5.3.5, “Creating Reports,” on page 69
- Section 5.3.6, “Editing Reports,” on page 70

5.3.1 Understanding the Reports Page

All reports can be accessed from the Reports page:

Figure 5-3 *A list of Saved Reports is found under the Reports Tab*



From the Reports page you can run reports or create a new one:

Figure 5-4 *CI Details and CI Attribute Chart Reports*

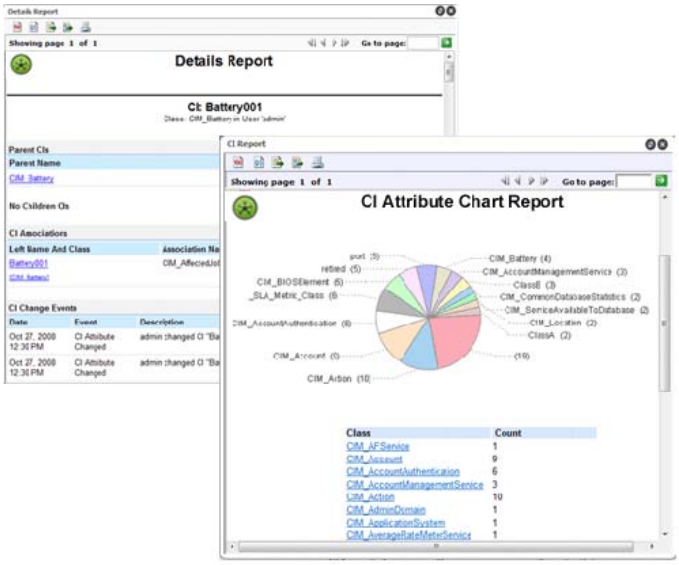


Table 5-1 lists the default reports included with CMS.

Table 5-1 *CMS Reports*

Name	Description
CI Attribute Chart	Summarizes an attribute for a container (such as objectClass), showing a pie chart of the breakdown by the hits on that attribute. For example, if run on the Contact attribute, it charts the people whose contact name shows up.
CI Details	Details specified values for the CIs.

Name	Description
CI Impacts	Lists impacted CIs.
CI Summary (Flags)	Lists flags on a CIs.
CI Summary (5 column)	Shows the values for specified attributes for each CI.
CI Summary (Multiple Attributes)	Shows the values of multiple attributes for each CI.

All reports have the following features, including exporting data and reports:

Table 5-2 *Report Options*

Icon	Description
	Opens a Table of Contents
	Run report
	Export data
	Export report
	Print report
	Reloads the report

5.3.2 Understanding Report Parameters

Report parameters vary by the type of report selected:

- "CI Attribute Chart" on page 64
- "CI Details" on page 64
- "CI Impacts" on page 66
- "CI Summary (Multiple Attributes)" on page 67
- "CI Summary (Flags)" on page 67

CI Attribute Chart

Table 5-3 lists report parameters for CI Attribute Chart.

Table 5-3 *CI Attribute Chart: Report Parameters*

General	Description
Attribute Name	Specify the attribute to chart.

CI Details

Table 5-4 lists report parameters for CI Details.

Table 5-4 *CI Details: Report Parameters*

Basic	Description
Show Parents	Select to include parent CIs.
Show Children	Select to include child CIs.
Show Associations	Select to include relationships to other CIs.
Show Property Pages	Select to include all CI properties.
Show Historical Event Feed	Select to include historical information for the CI.
Show Impacted	Select to include CIs impacted by the CI.
Show Compare	Select to include comparison on properties against a baseline CI.
Parents	Specify the kinds of parents to show, including: ◆ NAM ◆ ORG ◆ MAP ◆ TOP
Children	Specify the kinds of children to show, including: ◆ NAM ◆ ORG ◆ MAP ◆ TOP
Associations	Specify associations to include or exclude: ◆ Include Associations ◆ Exclude Associations
Event Feed	Specify parameters on the event feed information, such as date range, maximum number of events, and event channel: ◆ From Date ◆ To Date ◆ Start Event ◆ Event Limit ◆ Event channel

Basic	Description
Impacted	Show impacted CIs. Specify the following parameters to refine the type of impacted items to show: ◆ Include Association Names ◆ Exclude Association Names ◆ Include Class Names ◆ Exclude Class Names ◆ Stop At Class Names ◆ Boundary DNames ◆ Maximum Path Length ◆ Maximum Paths
Compare	Specify the CI to compare against. Drag and drop a CI from the Pinboard into the *Compare Identity* field.

CI Impacts

Table 5-5 *CI Impacts: Report Parameters*

Advanced	Description
Include Association Names	Specify an association names or matcher expression to include CIs based on relationship associations.
Exclude Association Names	Specify an association names or matcher expression to exclude CIs based on relationship associations.
Include Class Names	Specify a class names or matcher expression to include CIs based on class.
Exclude Class Names	Specify a class names or matcher expression to exclude CIs based on class.
Stop At Class Names	Specify a DName or matcher expression, that when reached, halts that path of the search for impacted CIs.
Boundary DNames	Specify the search range based on DName. Select the *Traverse Left To Right* check box to include outbound relationships associations. Select the *Traverse Right To Left* check box to include inbound relationship associations.
Maximum Path Length	Specify the maximum length of the path to search for impacted CIs.
Maximum Paths	Specify the maximum number of paths to include in the report for each CI.

CI Summary (Multiple Attributes)

Table 5-6 *CI Summary (5 Column and Multiple Attributes): Report Parameters*

Column Information	Description
Attribute Column Names	Comma-delimited list of attribute names.
Relationship Column Names	Comma-delimited list of relationship association types.
Column Maximum	Number of maximum columns to show in the report.

CI Summary (Flags)

Table 5-7 *CI Summary (Flags): Report Parameters*

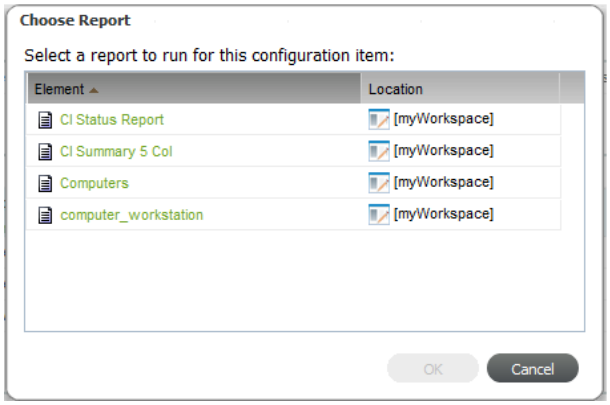
Flag Information Options	Description
Show If No Flags	Select to include a CI even if there are no existing flags.
Show Critical Flags	Select to include critical flags.
Show Incorrect Flags	Select to include incorrect flags.
Show Incomplete Flags	Select to include incomplete flags.
Show Review Flags	Select to include review flags.
Show Ready Flags	Select to include ready flags.
Show Valid Flags	Select to include valid flags.
Show Comment Flags	Select to include comments.

5.3.3 Running a Quick Report on a Single CI

CMS lets you run a report on a selected CI. This feature runs an existing report on a selected CI. If no reports have been created yet, you should do that first. For more information, see Section 5.3.5, "Creating Reports," on page 69.

To run a report on a single CI:

1 From search results or the pinboard, right-click the desired CI, then select *Report* from the drop-down list to open the Choose Report dialog box:



Another way to run a report on a single CI is to click *Report* while editing the CI.

2 Click the line of the report type to run on the CI to select it, then click *OK* to run the report.

3 Click any of the links to drill in to item details.

4 (Optional) Click (*Reload*) to return to the original report.

5.3.4 Running Reports

The Reports page for each community contains access to all reports created for that community by the community owner or community producers. Any personal reports you create can be accessed from the Reports page for myWorkspace or the Public area.

To run a report:

1 From the Reports page or the pinboard, right-click the report name, then select *Run* to run the report.

2 Click any of the links to drill in to item details.

3 (Optional) Click (*Reload*) to return to the original report.

5.3.5 Creating Reports

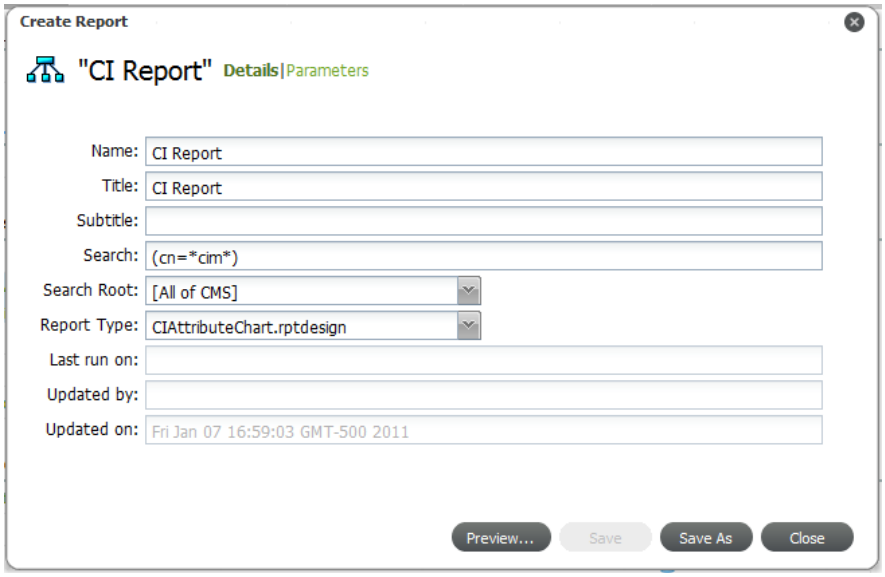
There are a couple of ways to create a report. One is by going through the Reports page. However, one of the easiest ways is to first refine search until it contains a list of desired CIs, then save it as a report.

To create a new report from a Search:

1 Use a search to build a query that matches your specifications for the report.

For instructions on searching, see Section 5.2, "Searching in CMS," on page 56.

2 When you are satisfied with the search results, click (*Save As a Report*) to open the Save Report dialog box:



3 Specify the report details:

3a Specify the desired report name in the *Name* field.

This is the name of the report when it shows in a list of available reports.

3b Specify the report title in the *Title* field.

This is the main heading shown at the top of the actual report.

3c Specify a subtitle in the *Subtitle* field.

This is the secondary heading shown at the top of the actual report.

3d From the *Search Root* drop-down, select the scope of the report.

3e From the *Report File* drop-down list select the report type.

3f Select from the following options:

CIAttributeChart: To run a report charting the number of hits on a specific attribute.

CIDetails: To run a report showing CI information.

CIImpacts: To run a report showing the CIs impacted by the selected CI.

CISummary5Column: To report on up to 5 specified attributes for each CI.

CISummaryFlags: To show flags for each CI.

CISummaryMultipleAttribute: To report on attributes for each CI.

4 Click *Parameters* to specify any report parameters.

   For a description of each report parameter, see Section 5.3.2, "Understanding Report Parameters," on page 64.

5 At anytime, do one of the following:

   - Click *Preview* to view what the report will look like.
   - Click *Save As* to save the report.

6 If you decided to preview the report, check to make sure everything is as expected.

7 Return to the Create Report dialog box to save the report after everything is set up properly:

   7a Click *Save As* to open the Save As dialog box.

   7b In the *Name* field, specify the name of the report.

   7c From the *Report Location* drop-down list, select *myWorkspace* or the desired community.

   7d Click *Save*.

5.3.6 Editing Reports

1 From the Reports page or the pinboard, double-click the report name (or right-click the report name), then select *Edit* to open the Edit Report dialog box.

2 Make any changes to the report configuration as desired.

3 Do one of the following:

   - Click *Preview*.

     The report runs.

   - Click *Save* to save your changes.

6 Contributing to the CMDB

As a general user, you could be contributing information about configuration items (CIs) to various communities, but might not be a community owner and involved in setting up other features for the community. This section only covers information about creating and contributing to CIs.

If you are a Consumer member of a community, you won't have permissions to register or edit CIs.

The more you are involved with developing or maintaining a community, for additional topics on setting up features for communities, see Chapter 7, "Managing Communities," on page 91.

- Section 6.1, "Registering CIs," on page 71
- Section 6.2, "Copying, Moving, or Linking Objects," on page 76
- Section 6.3, "Managing CIs," on page 78
- Section 6.4, "Flagging and Commenting on CIs," on page 79
- Section 6.5, "Exploring CI Relationships," on page 83
- Section 6.6, "Exploring CI Impacts," on page 88
- Section 6.7, "Viewing CI History," on page 89

6.1 Registering CIs

Upon registration, CIs are assigned to a community. Owners and producers can use myWorkspace to create private CIs that can be assigned (published) to a community later.

Concerning CI relationships, part of registering a CI might be defining rules that create associations between items. If you are a Operations Center administrator, you can define these relationships through the Operations Center console. For more information, see Section 3.6, "Managing CMS Elements from Operations Center," on page 33. For ways to relate CIs after creation, see Section 6.5.2, "Adding Additional CI Relationships," on page 84.

Review the following sections to register CIs:

- Section 6.1.1, "Registering a CI," on page 72
- Section 6.1.2, "Registering a CI as a Child (Nesting)," on page 75

6.1.1 Registering a CI

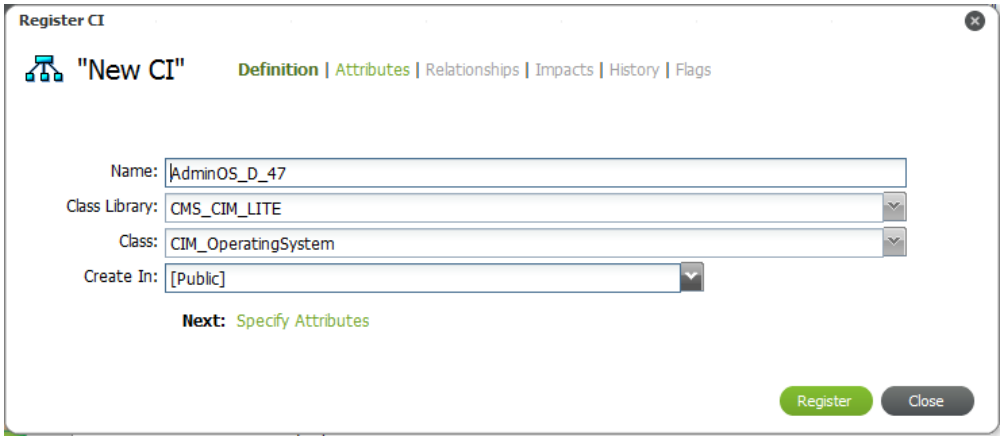
To register a configuration item:

1 Do one of the following:

- Click the *Actions* menu, then select *Register a CI*.
- Click the name under any community icon, then select *Register a CI*.

  This presets the CI to be created in that community by default.

The Register CI dialog box opens:



2 Specify the name of the CI in the *Name* field.

3 Select the library of classes from the *Class Library* drop-down list.

4 Select the class from the *Class* drop-down list.

Class options are available based on the *Class Library* selection above.

TIP: Begin typing (or enter a portion of a word) in the drop-down lists to start an automatic search of matches for a quicker selection.

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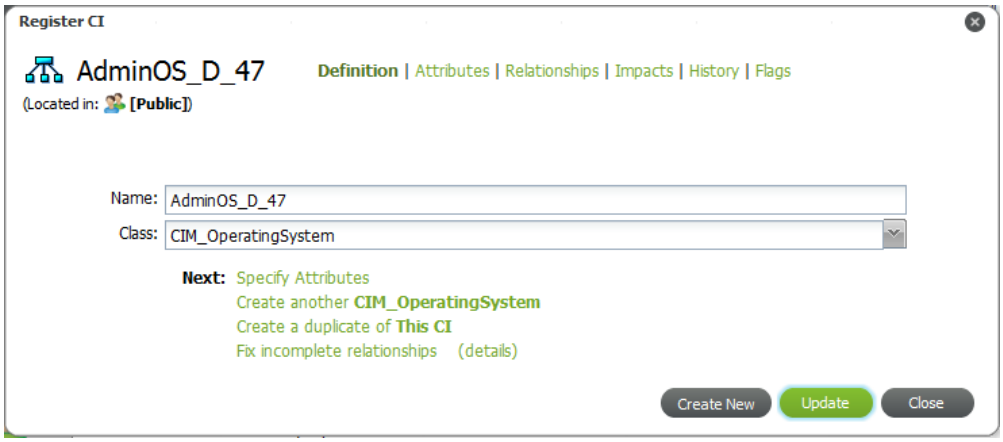
5 Select the community the CI belongs to from the *Create In* drop-down list.

You must be a community owner or producer to create CIs in a community.

6 When the definition section is complete, click *Register* to check for relationship rules.

Clicking *Register* not only creates the new CI, but also check against association cardinality rules to see if there is a relationship that must be created to make this CI complete.

If an association rule exists, you'll see additional options below the definition fields:



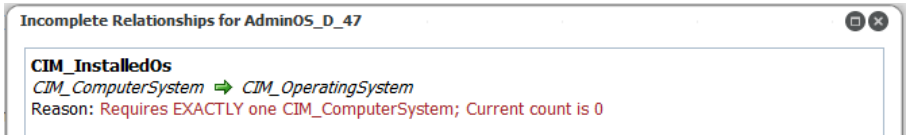
Clicking *Create New* after registration closes the current CI you are defining and starts with a completely new CI definition.

To continue with the CI definition without fixing an incomplete relationship if there is one, click *Specify Attributes*, then skip to Step 8.

To establish the necessary relationship, follow the steps below.

7 To view details of an incomplete relationship, click *Details*.

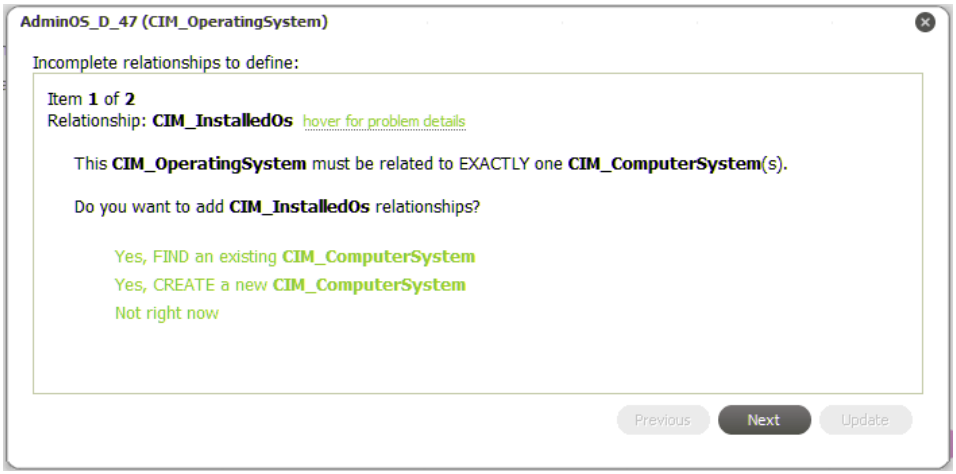
A message displays describing the incomplete relationship:



In this example, the Operating System requires relationship to one Computer System.

8 Do the following:

8a To fix the incomplete relationship, click *Fix Incomplete Relationships*:



8b Do one of the following:

- Click *Yes, FIND an existing CI_type* to search and link to an existing CI to open a search dialog box.

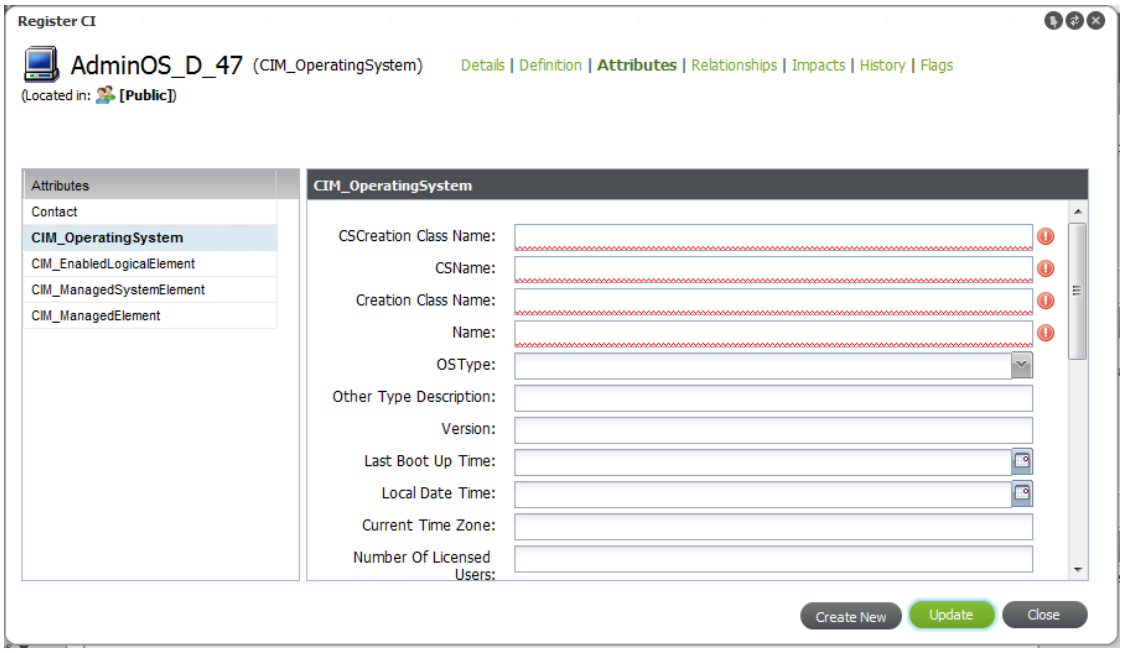
  Select the desired CIs, then click either *Return Selected Results* or *Return All Results*.

- Click *Yes, CREATE a new CI_type*.

8c When finished, click *Update* to return to specify details for the new CI.

9 Click *Attributes* to specify attribute values for the CI.

The *Attributes* section opens:

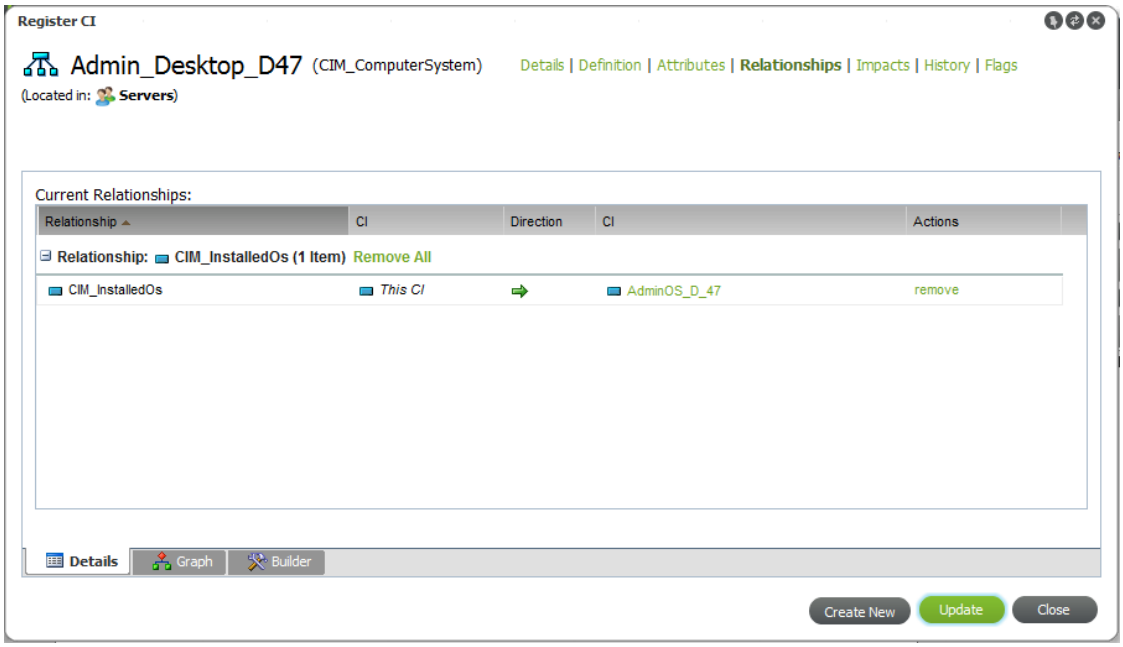


10 Click each attribute name to define any fields as desired or required.

Red highlighted fields are mandatory.

11 Click *Relationships* to define any further relationships.

The *Relationships* section opens:



The *Details* tab shows existing relationships (that were defined in Step 7 by fixing a broken relationship rule).

12 Do the following:

12a Click the *Builder* tab.

The Builder is used to define additional relationships.

12b Select the desired relationship type from the *Available Relationship Types* drop-down list.

A new relationship item displays in the *Relationships to Define* section.

12c Do one of the following:

- Select the CIs to relate (as source or destination endpoints) by clicking *Search* next to *Elements* to relate.
- Create a new CI that will be related with this rule when clicking *Create* next to the *Elements* to relate.

12d Click *Update* to save the new relationships and add them to the *Details* tab.

13 To complete the CI registration and save any additional changes, click *Update*.

6.1.2 Registering a CI as a Child (Nesting)

CIs can be created (or nested) under a parent CI to create an additional hierarchical structure, if necessary.

To register a CI as a child CI (nest a CI):

1 From the pinboard, right-click the desired CI to be the parent CI, then select *Create* to open the Register CI dialog box.

2 Define the CI as required.

The CI is created under the parent CI.

6.2 Copying, Moving, or Linking Objects

A drag and drop action can be used to move or link any CI, report, or search. However, there are two methods for creating new items, searches, or reports based on existing items:

- Copy as
- Drag and drop

Table 6-1 shows when to use the *Copy As* menu option or the drag and drop feature:

Table 6-1 *When to use Copy As or Drag and Drop*

To…	Applies To…	Method to Use
Create a link	CI, Report, or Search	Drag and Drop
Move the item	CI, Report, or Search	Drag and Drop
Duplicate the item	CI, Report, or Search	Drag and Drop or Copy As
Duplicate a CI and customize properties	CI	Copy As

WARNING: Concerning CI hierarchical structures, a copy, link, or move action affects the selected CI, as well as any CIs created under that CI. Therefore, copying, linking, or moving a parent CI copies, links, or moves not only that CI but also any of its child CIs.

Review the following sections to copy, move, or link objects:

- Section 6.2.1, "Using the Drag and Drop Method," on page 76
- Section 6.2.2, "Using the Copy As Method," on page 77

6.2.1 Using the Drag and Drop Method

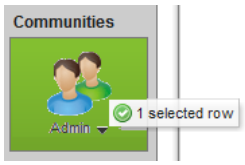
To copy, move, or link objects using Drag and Drop:

1. Locate the item you wish to move.

   Some of the easiest ways include:

   - Find the item on the pinboard.
   - Run a search.

2. Click and drag from the item name (from the search results or pinboard) over onto the community's large icon in your *Communities* list:



   When contact is made, the tool tip shows the number of items selected, then you can release your mouse.

   On the pinboard, you can select multiple items to move/copy.

3 Select whether to move, link, or copy the items:



Move Here: Moves the items into the selected community.

Link Here: Creates a link to the items from the selected community.

Copy Here: Creates a new copy of the items from the selected community.

4 Click *OK* to complete the action.

6.2.2 Using the Copy As Method

Copy As is a useful feature when you'd like to duplicate a CI that has some attribute values or relationships that are different from the original CI. While the duplication works the same as with Drag and Drop, this action can automatically open Edit CI on creation, thus allowing you to easily modify the new CI with the least number of steps.

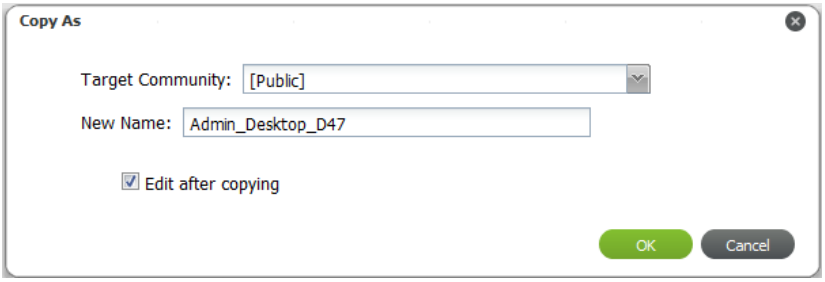
To create CIs from an existing CI:

1 Locate the CI.

Some of the easiest ways include:

- Find the item on the pinboard.
- Run a search.

2 Right-click the CI, then select *Copy As* to open the Copy As dialog box.



3 Select a community from the *Target Community* drop-down list.

4 Edit the name of the new CI in *Name* field, if desired.

5 Leave the *Edit After Copying* check box selected to open the Edit CI dialog box for the CI on creation.

From there, other properties can be modified for the new CI.

6.3 Managing CIs

A natural part of maintaining a CMDB is updating CI information as it changes. This might include renaming a CI, updating various properties, or even deleting a CI when it is retired or has expired for some reason.

- Section 6.3.1, "Editing CIs," on page 78
- Section 6.3.2, "Retiring CIs," on page 78
- Section 6.3.3, "Deleting CIs," on page 78

6.3.1 Editing CIs

CI information can be edited if you have the appropriate permissions.

To edit CI information:

1. Locate the desired CI in Search Results or the pinboard.
2. Do one of the following:
   - From the pinboard, right-click the CI, then select *Edit*.
   - From *Search Results*, click the CI or expand the CI line item, then select *Edit*.

   The Edit CI dialog box opens.
3. Make the necessary changes to the CI information.

   TIP: When editing a CI, it is a good habit to click *Update* on each tab where you make changes before continuing on to another tab. That way, if you are interrupted, you know all your changes are saved.
4. When finished, click *Update*.

6.3.2 Retiring CIs

There are various ways to allow CMS owners and producers to retire CIs. Check with your CMS administrator to see if your implementation has been customized to include a feature to retire CIs.

6.3.3 Deleting CIs

Contributing to the CMDB means that occasionally CIs are not valid and must be deleted. There are two main ways to delete a CI.

WARNING: Deleting a CI deletes any child CIs created under the CI.

If you do not have permissions to delete CIs, all Delete CI options are hidden. To allow producers who are not Operations Center administrators to delete CIs, you can configure this permission in the CMS Configuration Manager. See Section 2.1.3, "Configuring CMS Settings," on page 15.

To delete a CI:

1 Do one of the following:

- Locate the desired CI on the pinboard, then do the following:
  1. Right-click the CI's name.
  2. Select *Delete CI*.
- Locate the desired CI in any Search Results, then do the following:
  1. Click the CI, or expand the CI line item.
  2. Click *Edit* to open the Edit CI dialog box.
  3. Click *Delete CI*.

6.4 Flagging and Commenting on CIs

Flagging is a way to mark and track the lifecycle of a CI. Flag notifications show in community events feeds and in the CI's history.

Each new or updated flag or comment is easily reviewed by the community owner who has permissions to reject the flag or comment. For information on reviewing flags or comments and rejecting them if you are a community owner, see Section 7.6, "Reviewing Flags for Your Communities," on page 98.

- Section 6.4.1, "Viewing and Maintaining Flags and Comments," on page 79
- Section 6.4.2, "Adding Flags and Comments," on page 80
- Section 6.4.3, "Editing, Deleting, and Resubmitting Flags and Comments," on page 81

6.4.1 Viewing and Maintaining Flags and Comments

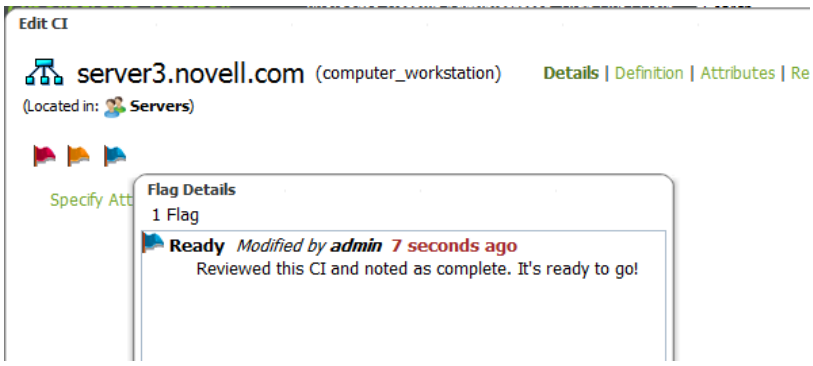
Flags and comments can be viewed while viewing or editing CI details.

To view all flags and comments for a CI:

1 From search results or the pinboard, right-click the desired CI, then select *Edit* from the drop-down list.

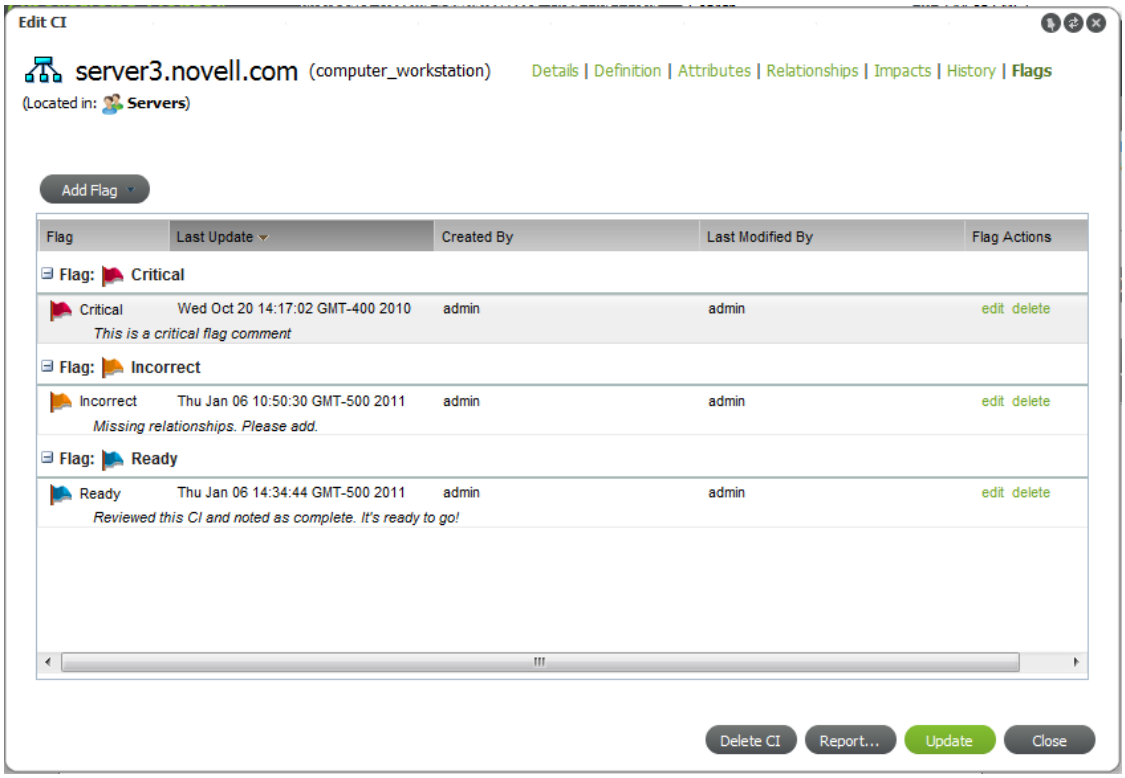
The Edit CI dialog box opens, showing flag icons at the top under the CI's name.

2 Hover the mouse over a flag to see a pop-up description of flag details:



3 To open a list of all CIs, click any of the flag icons, or click *Flags*.

The *Flag* list displays showing all current flags or comments:



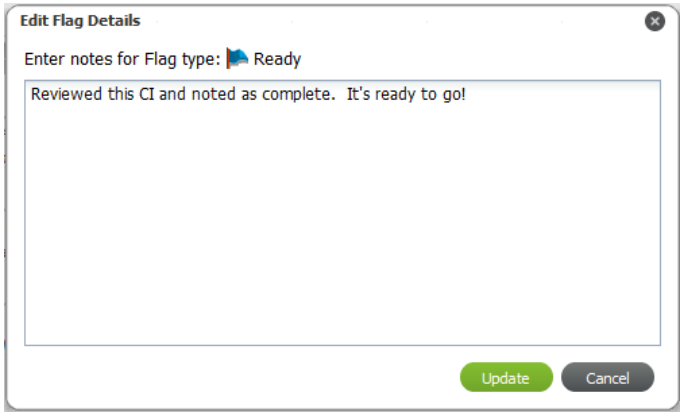
6.4.2 Adding Flags and Comments

It is not necessary to edit a CI to add a flag or comment. You can access this feature directly from CI menu options.

Adding flag details to a CI appends to existing flag notes. To view existing flag notations and edit them, use the Edit CI feature as explained below.

To add a flag or comment on a CI:

1 From search results, a report or the pinboard, right-click the desired CI, then select *Flag* from the drop-down list to open the Add Flag Details dialog box:



2 In the Flag Details dialog box, select the flag type and enter a description.

If there was a preexisting flag of this type, the note is appended to the existing flag.

3 Click *Add* to update the flag.

6.4.3 Editing, Deleting, and Resubmitting Flags and Comments

Flags and comments can be edited and deleted while editing a CI.

Only a community owner has permissions to reject a flag or comment. If your flag or comment is rejected, you have the opportunity to resubmit it. For information on reviewing flags/comments and rejecting them if you are a community owner, see Section 7.6, "Reviewing Flags for Your Communities," on page 98.

To edit, delete, or resubmit flags or comments:

- "Editing Flags or Comments" on page 81
- "Deleting Flags or Comments" on page 81
- "Resubmitting Rejected Flags or Comments" on page 81

Editing Flags or Comments

1 From search results, a report or the pinboard, double-click the desired CI, then select *Edit* from the drop-down list.

The Edit CI dialog box opens, showing flag icons at the top under the CI's name.

2 Click any of the flag icons or click *Flags*.

The *Flag* list displays showing all current flags.

3 To edit a flag, click the flag or comment's *Edit* link.

The Edit Flag Details dialog box opens to allow you to update the description.

Deleting Flags or Comments

1 From search results, a report or the pinboard, double-click the desired CI, then select *Edit* from the drop-down list.

The Edit CI dialog box opens, showing flag icons at the top under the CI's name.

2 Click any of the flag icons or click *Flags*.

The *Flag* list displays showing all current flags.

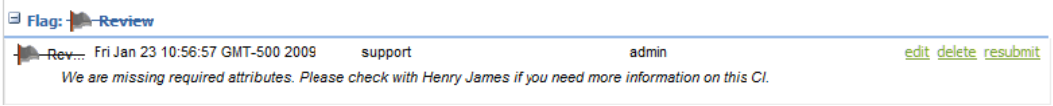
3 To delete a flag or comment, click the flag or comment's *Delete* link.

A confirmation box displays.

4 Click *Yes* to confirm the deletion.

Resubmitting Rejected Flags or Comments

Rejected flags or comments show a strikethrough:



To use the *Resubmit* link to resubmit the flag or comment:

1. From search results, a report or the pinboard, double-click the desired CI, then select *Edit* from the drop-down list.

   The Edit CI dialog box opens, showing flag icons at the top under the CI's name.

2. Click any of the flag icons or click *Flags*.

   The *Flag* list displays showing all current flags.

3. To resubmit a rejected flag or comment, click the flag or comment's *Resubmit* link

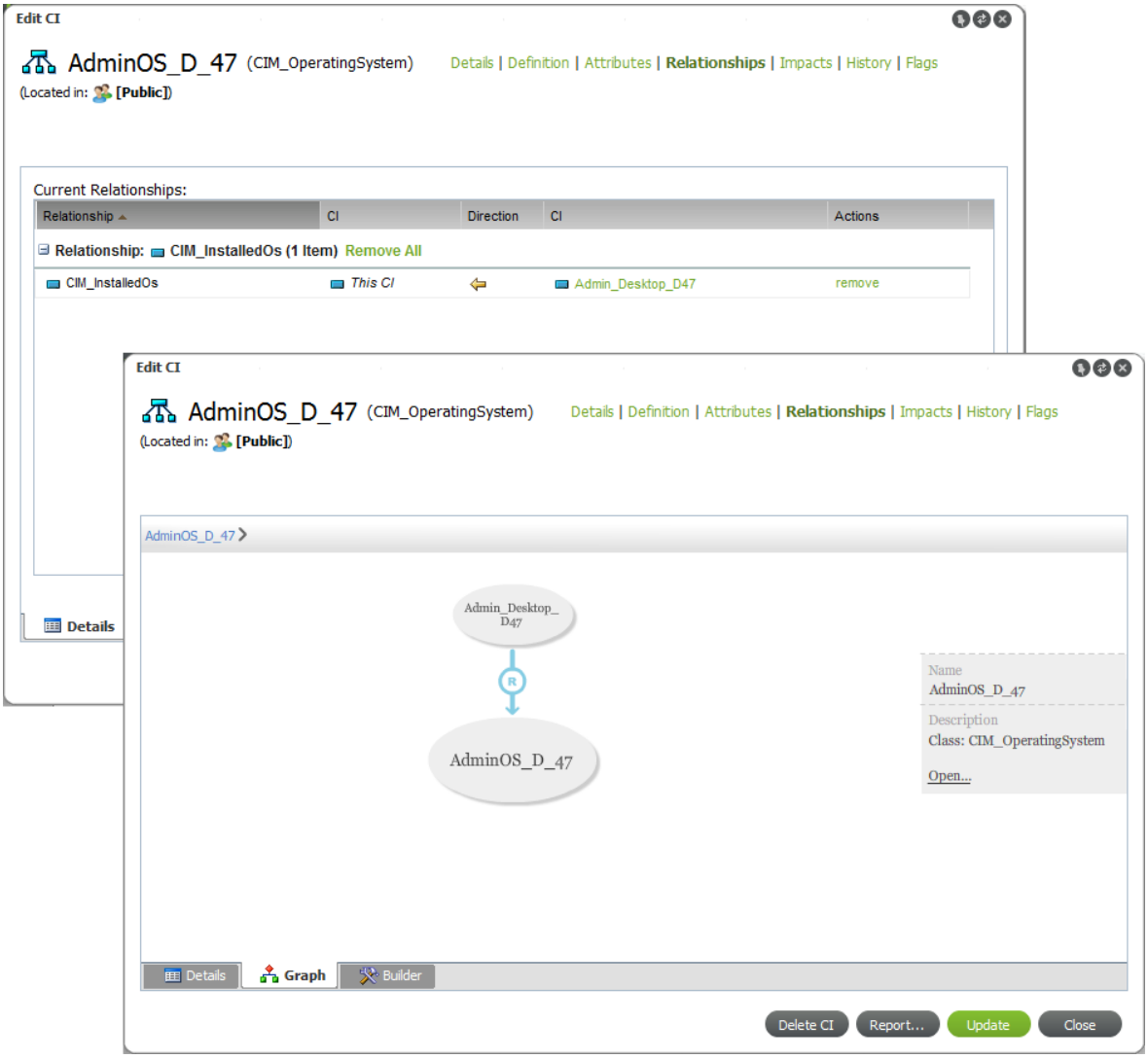
   The Edit Flag Details dialog box opens to allow you to update the description.

4. Click *Resubmit* to submit the flag or comment again.

6.5 Exploring CI Relationships

A CI rarely exists independently from other assets in your environment. In fact, the goal of a CMBD is often to be able to quickly identify how and what a certain CI might affect. Relationships show all CIs or communities that a CI is related to. Figure 6-1 illustrates viewing relationships in list format (Details tab) or browse them visually (Graph tab):

Figure 6-1 *Details Tab and Graph Tab Views*



The following sections provide details on viewing and adding relationships:

- Section 6.5.1, “Viewing All Relationships for a CI,” on page 84
- Section 6.5.2, “Adding Additional CI Relationships,” on page 84

6.5.1 Viewing All Relationships for a CI

Note that some relationship types are reserved and do not show in relationships. For more information about reserved types, see Section 3.2.2, “Reserved Association Types,” on page 23.

To view CI relationships:

1. From the search results or the pinboard, right-click the CI, then select *Edit* to open the Edit CI dialog box.

   Clicking *Relationships*, under a CI item in search results, opens a *Relationship* viewer. To access the *Details* listing for CI Relationship, you must use the *Edit* option on a CI.
2. Click *Relationships*.
3. Do any of the following:
   - To view a list of relationships, click the *Details* tab.
   - To browse a visual representation, click the *Graph* tab.
4. To define additional relationships, click the *Builder* tab.

   For more information, see Section 6.5.2, “Adding Additional CI Relationships,” on page 84.

6.5.2 Adding Additional CI Relationships

Relationships with other CIs are usually defined when the CI is first registered. However, additional relationships can be defined for the CI at any time. There are 3 ways to relate CIs:

- Drag and drop one or more CIs from *Search Results* onto a CI on the pinboard. For more information, see “Relating CIs Using Drag and Drop” on page 85.
- Right-click a CI, then select *Create Relationships*. For more information, see “Relating CIs Using Item Right-Click Menus” on page 86.
- Edit the CI details and use the Relationship Builder. For more information, see “Relating CIs from CI Details” on page 87.

Relationships can also be defined through the Operations Center console. For steps on defining relationship from the MO console, see Section 3.6, “Managing CMS Elements from Operations Center,” on page 33.

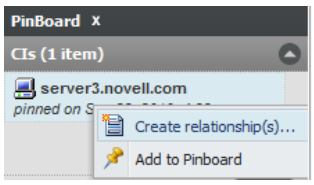
Use the following methods to relate CIs:

- “Relating CIs Using Drag and Drop” on page 85
- “Relating CIs Using Item Right-Click Menus” on page 86
- “Relating CIs from CI Details” on page 87

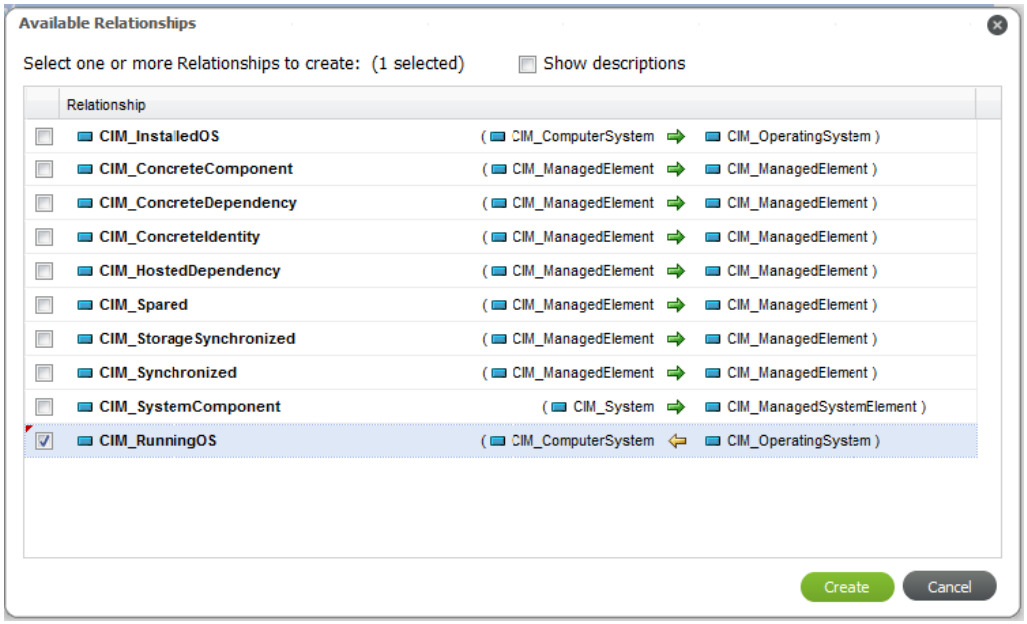
Relating CIs Using Drag and Drop

To add relationships using Drag and Drop:

1. Verify the desired CI is available on the pinboard that has one endpoint of the relationship.
2. From search results, a report or the pinboard, select one or more CIs to relate and drag them over to the other CI on the pinboard. The following menu options display:



3. Click *Create Relationships* to display the Available Relationship dialog box:



4. Select the *Show Descriptions* check box to view the CIM descriptions of the various item classes.
5. Select the check boxes for the desired relationships between the selected elements.
6. Click *Create*.

   The relationships are created.

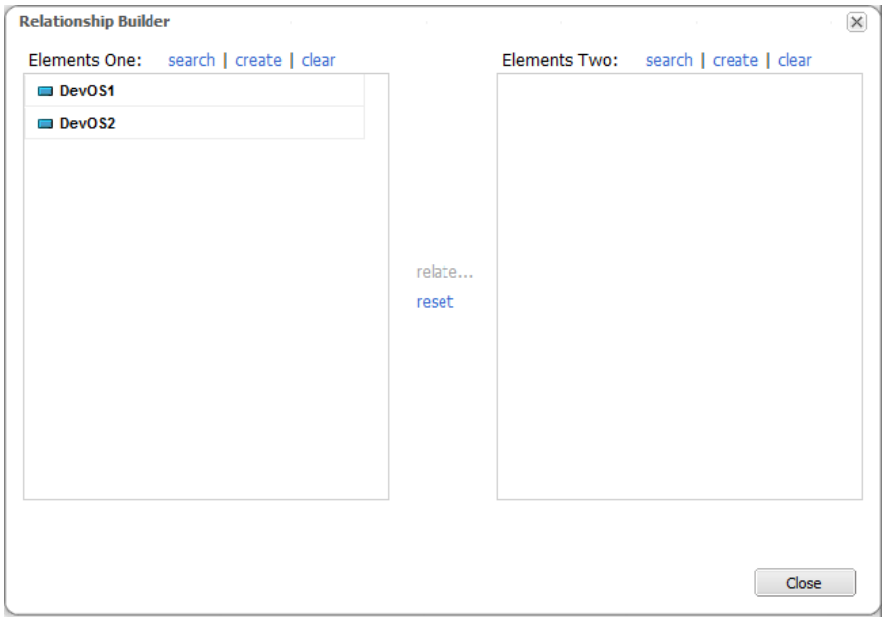
   Relationship rules can be broken when creating relationships with this method. To fix any broken or incomplete relationships, edit the CI and use the notifications provided. To see how to fix incomplete relationships, see the procedure in Section 6.1, “Registering CIs,” on page 71.

   If relationship rules exist, such as a one to one relationship between CI types, and additional relationships are created between the same types, the relationship viewer only shows valid relationships. None of the relationships that cause the rule to be invalidated are shown.

Relating CIs Using Item Right-Click Menus

To add relationships from a CI:

1 From the pinboard or search results, right-click a CI, then select *Create Relationships*.
The Relationship Builder opens:



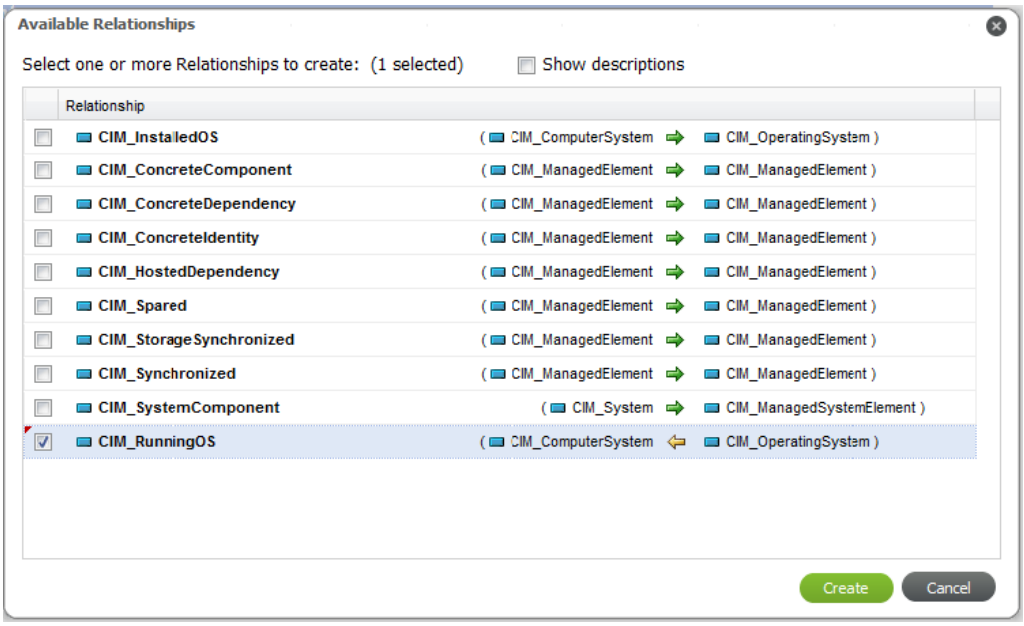
Selected CIs show in the left pane.

2 Use any of the following tasks to select elements to relate:

- Drag and drop any CI listed to the opposite pane to switch endpoints.
- Drag and drop any CIs from the pinboard or search results into either element panes.
- Click either *Search* link to search for elements to relate.
- Click either *Create* link to create a new CI.
- Click the associated *Clear* link to remove any CIs from either element pane.
- Click the *Reset* link to remove any CIs from both element panes.

3 Click the *Relate* link to view, then select the relationships to create.

The Available Relationship dialog box displays:



4 Select the *Show Descriptions* check box to view the CIM descriptions of the various item classes.

5 Select the check boxes for the desired relationships between the selected elements.

6 Click *Create*.

The relationships are created.

Note that relationship rules can be broken when creating relationships with this method. To fix any broken or incomplete relationships, edit the CI and use the notifications provided. To see how to fix incomplete relationships, see the procedure in Section 6.1, "Registering CIs," on page 71.

If relationship rules exist, such as a one to one relationship between CI types, and additional relationships are created between the same types, the relationship viewer only shows valid relationships. None of the relationships that cause the rule to be invalidated are shown.

Relating CIs from CI Details

To add relationships by editing a CI:

1 From search results, a report or the pinboard, double-click the desired CI or right-click the CI, then select *Edit* from the drop-down list.

The Edit CI dialog box opens, showing flag icons at the top under the CI's name.

2 Click any of the flag icons or click *Relationships*.

The *Details* list displays showing all current relationship definitions.

It is always a good idea to check on the *Definition* tab to see if there are any relationship rules that have not been defined. If there are, there will be a *Fix incomplete relationships (details)* link. Clicking that link walks you through the process to fix those.

For steps on using this method to define relationships, see Section 6.1, "Registering CIs," on page 71.

3 Click the *Builder* tab.

4 From the *Available Relationship Types* drop-down list, select the type of new relationship to define.

   A new relationship item is added to the *Relationships to Define* pane.

5 If an extra relationship is added by mistake or is invalid, click ☒ (*Remove*).

6 To select an elements to relate to the relationship rule:

   - Click *Select* to assign one or more existing CIs to the open endpoint.
   - Click *Create* to create a new CI to assign to the open endpoint.

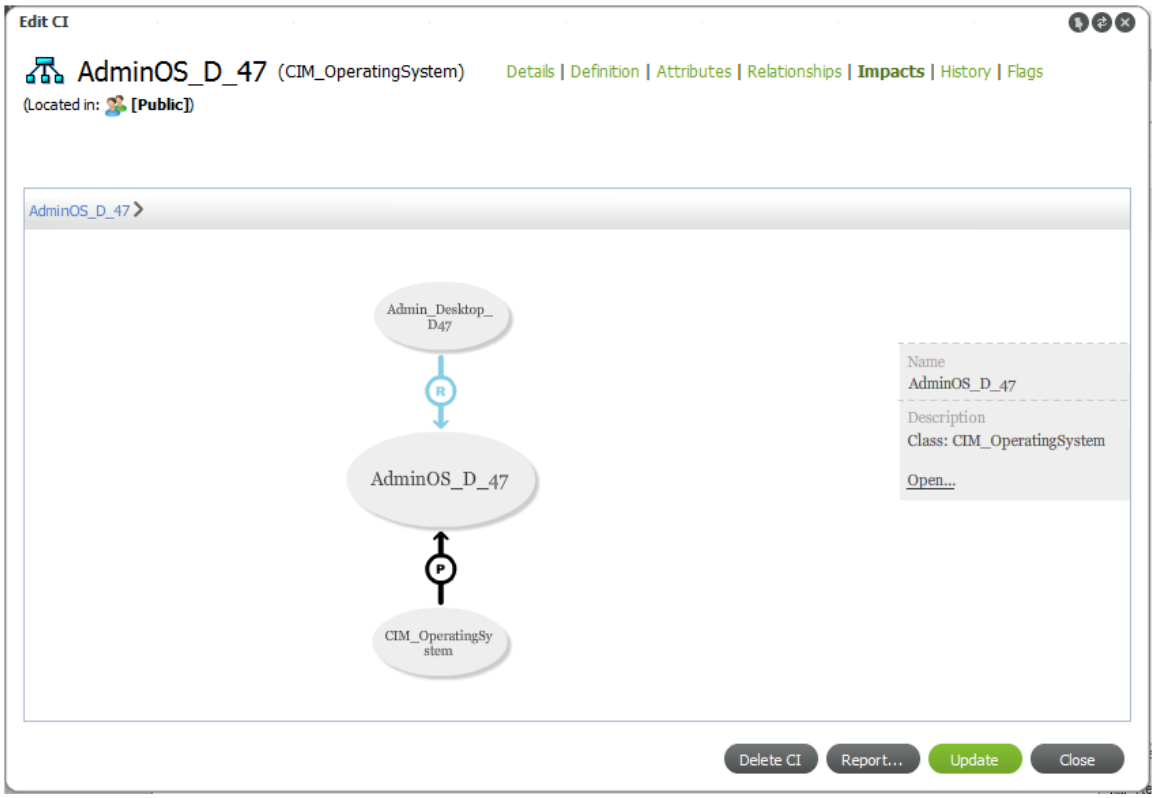
7 When the relationship is fully defined, click *Update* to add the relationship.

   The relationships displays on the *Details* tab of the *Relationships* section.

6.6 Exploring CI Impacts

Do you need to know what other CIs a specific CI affects? Impacts show us just that. This looks very similar to Relationships but only shows us those CIs that can be affected by the CI.

Figure 6-2 *Browse all CIs impacted by a CI*



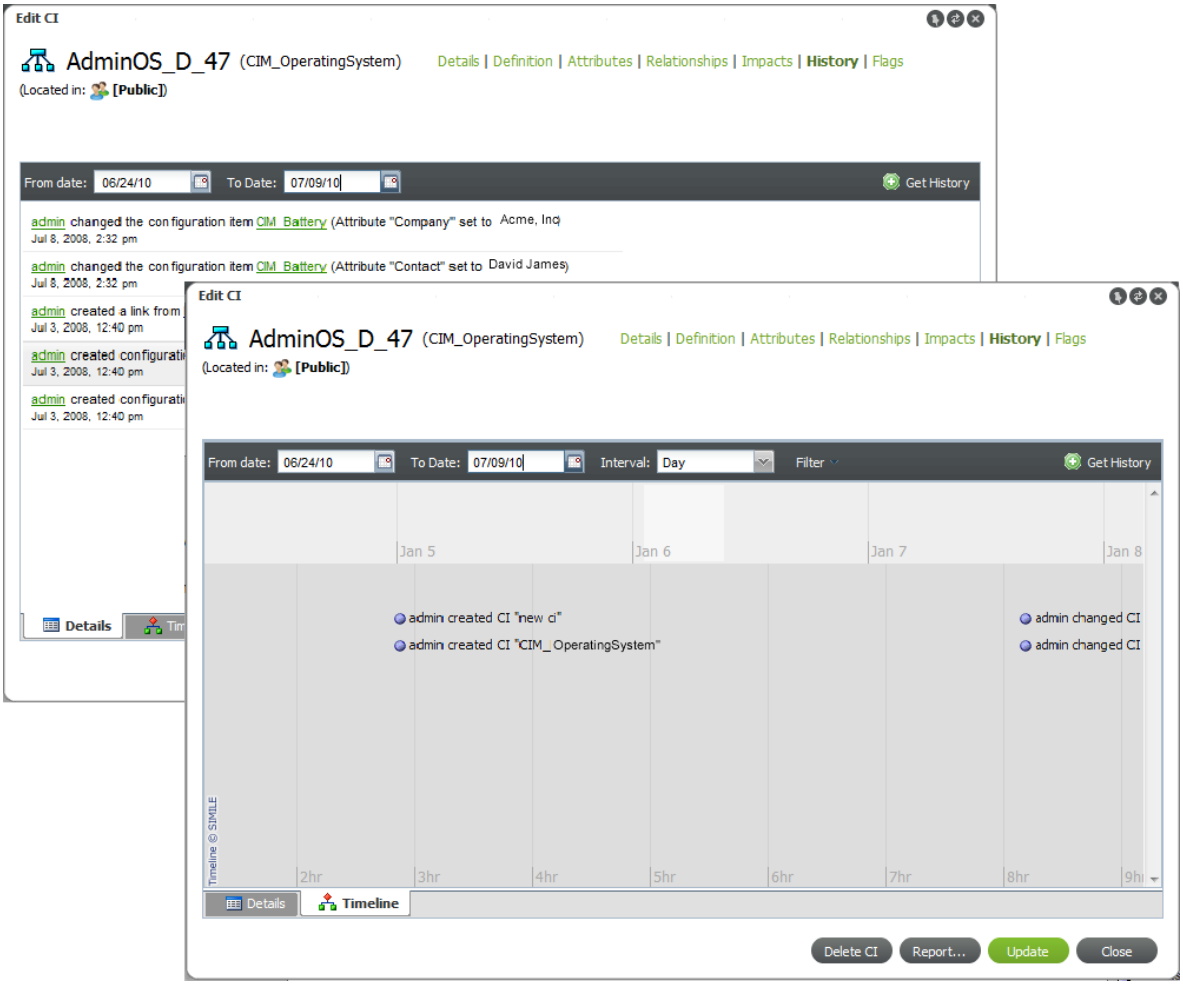
To view only CIs affected by a specific CI, do one of the following:

- **From the Search Results Page:**
  1. Right-click the desired CI, then select *Impacts* to open the *Impacts* viewer.
  2. Click any of the CI bubbles to further explore the impacting CIs.
- **From the Pinboard Search Results:**
  1. Right-click the CI, then select *Edit* to open the Edit CI dialog box.
  2. Click *Impacts*.

6.7 Viewing CI History

Every update or action on a CI creates an events history that can be viewed in CI Details to two ways: a tabular listing and a timeline display:

Figure 6-3 *View a listing of historical events (Details tab) or browse them visually in a timeline (Timeline tab)*



To view the history of a CI:

1. From the search results or the pinboard, right-click the CI, then select *Edit* to open the Edit CI dialog box.

   Clicking *History* under a CI item in search results opens a *Timeline* viewer. To access the *Details* listing for *CI History*, you must use the *Edit* option on a CI.

2. Click *History*.
3. Do either of the following:
   - To view a list of historical events, click the *Details* tab.
   - To view a timeline of events, click the *Timeline* tab.
4. Using the *From Date* and *To Date* calendar buttons, select the date range to poll for historical information about the CI.

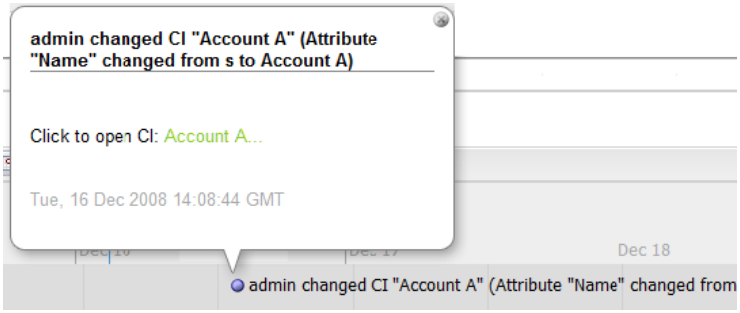
   The From and To dates are inclusive.
5. Click *Get History*.

   Matching events displays in a listing or timeline format.

TIP: After switching from the *Details* to the *Timeline* tab (and vice versa), click *Get History* to populate the view with data.

---

6. On the *Timeline* tab, do any of the following:
   - Note the following about the *Timeline* tab:
     - The light grey block in the bottom timeline band indicates the section of time in focus.
     - A blue line inside the bottom timeline band indicates that there are events present.
   - Click and drag along the timeline to view various events.
   - Click any event item to open event details, as shown:



7. To update the data viewed, change the date range, then click *Get History* to retrieve a new data set.

7 Managing Communities

Communities are an important part of CMS. These groups of users will help to compile and maintain CMDB information.

The following sections provide details about managing communities:

- Section 7.1, “Managing Communities for Community Owners,” on page 91
- Section 7.2, “Creating a Community,” on page 93
- Section 7.3, “Inviting Members to Join Invite Only Communities,” on page 94
- Section 7.4, “Viewing and Managing Community Roles,” on page 95
- Section 7.5, “Setting Favorites for Community Summary Pages,” on page 96
- Section 7.6, “Reviewing Flags for Your Communities,” on page 98

7.1 Managing Communities for Community Owners

As a community owner, you’ll create the community, then build community membership, either organically (as people request membership) or by invitation. Before inviting members to join, here are the main items that you (and your producers) should consider setting up to make the community user-friendly for your consumer-type users:

- Registering and maintaining configuration items

  For more information, see Section 6.1, “Registering CIs,” on page 71 and Section 6.2, “Copying, Moving, or Linking Objects,” on page 76.
- Creating and saving some basic searches

  For more information, see Section 5.2.6, “Saving a Search Query,” on page 62.
- Creating a library of useful reports

  For more information, see Section 5.3.5, “Creating Reports,” on page 69.
- Creating favorites for the community’s Summary page, which contains links to prominent CIs, saved searches, and reports

  For more information, see Section 7.5, “Setting Favorites for Community Summary Pages,” on page 96.

To manage communities, review the following sections:

- Section 7.1.1, “Building Community Data Offline,” on page 92
- Section 7.1.2, “Community Types,” on page 92
- Section 7.1.3, “Community User Roles,” on page 92

7.1.1 Building Community Data Offline

As a community owner, you might decide to create the community as an Invite Only community. This give you time to establish a baseline by creating some CIs or building reports before other users are involved. Producers, members that can help you populate the community before the others while the community is being ramped up. For how you would bring producer members on board early, see Section 7.3, "Inviting Members to Join Invite Only Communities," on page 94. When you are ready, you can invite users to join or switch the community over to be an Open or By Request community.

If a community is already established and somewhat mature, there are two strategies you can use to develop new items and objects without surfacing them before they are ready:

- Utilize your myWorkspace area to define the items, then move, link, or copy them over when ready
- Create a private community that is only accessible by you and selected producers

  This strategy has the advantage of allowing multiple users to contribute data before publication. For this purpose, we suggest a similar naming convention to the active community, such as CommunityName_Dev to help identify the exact purpose of this private development area.

7.1.2 Community Types

There are various types of communities:

- **Open:** Communities are always public and visible to everyone. Users can join and leave at will.
- **By Request:** Communities are always public and visible to everyone. Users can request membership and those requests show in your Inbox if you are the community owner.
- **Invite Only:** Communities can be either public or private/hidden. Members can only join by invitation.

Based on the type of community, it is completely visible or private/hidden to CMS users.

7.1.3 Community User Roles

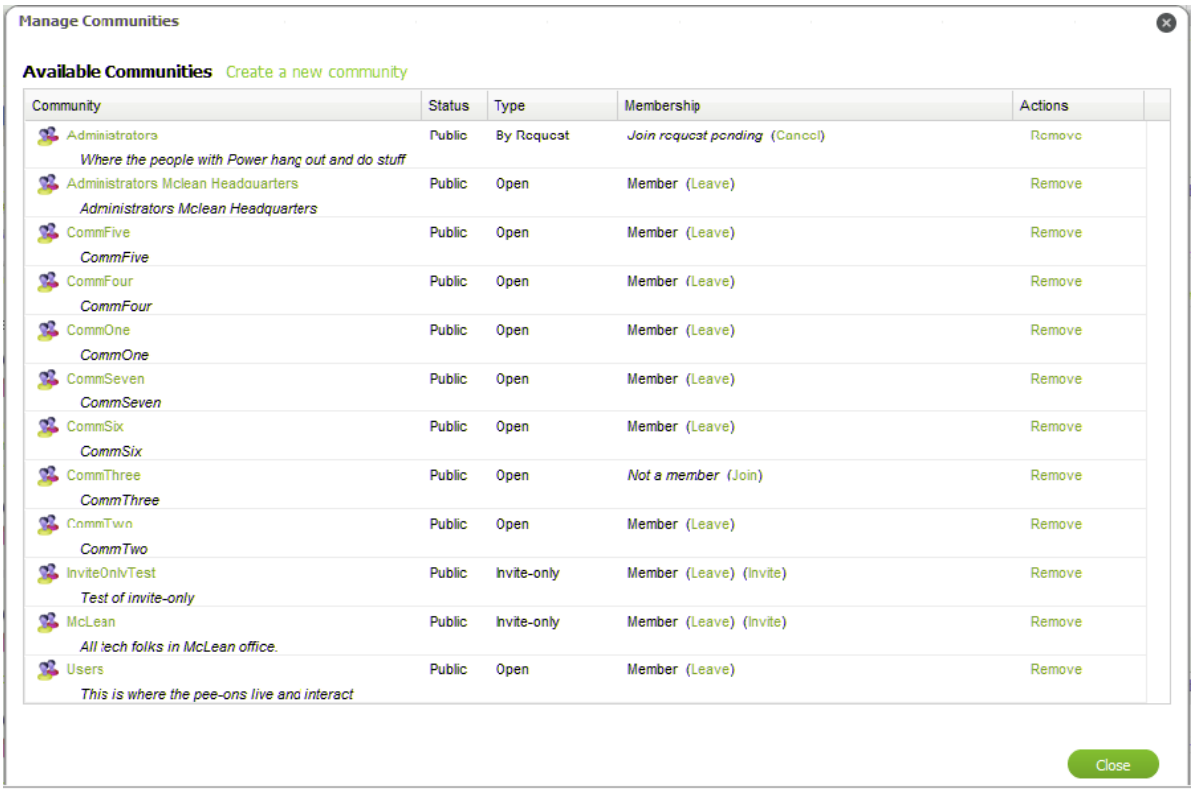
To build a successful community, you not only need members that find your information helpful but members that can actively contribute information. Community members can have one of the following two roles:

- **Producers:** Able to contribute to the community by creating and maintaining CIs, save searches and reports for the community and, managed favorites for community Summary pages.
- **Consumers:** Can only view community data. The consumer user does not have permission to contribute to community information.

7.2 Creating a Community

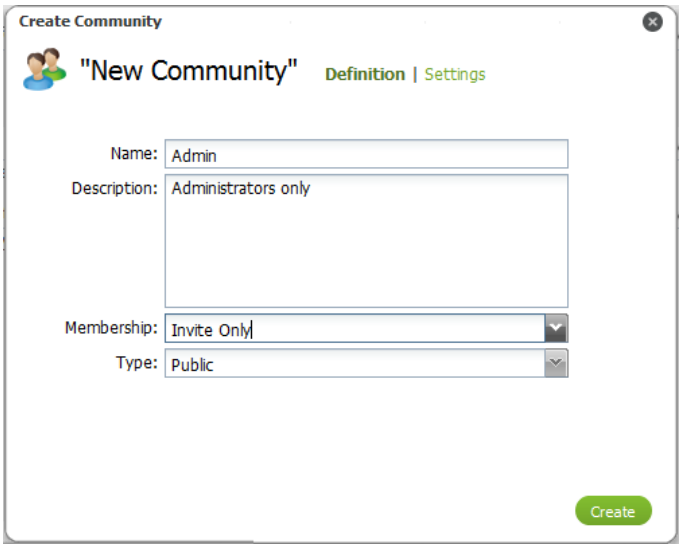
In Manage Communities, you'll see a list of all public communities with information about membership status. You can also create a new community.

Figure 7-1 *View all communities and manage your memberships*



To create a community:

1. Click *Actions*, then select *Manage Communities* to open the Manage Communities dialog box.
2. Click *Create a New Community* to open the Create Community dialog box:



3 Specify the name of the new community in the *Name* field.

4 Enter a description for the community in the *Description* field.

5 Select the rule for users to join from the *Membership* drop-down list:

Open: The community is open and users can join at anytime. Open communities are always public.

By Request: The community only allows users to join by request. By Request communities are always public.

Invite Only: The community only allows users to join if they have received an invitation. Invite Only communities can be private or public.

6 Select the community type from the *Type* drop-down list.

Public: Users can see the community listed on the Communities page and in searches.

Private: The community is not visible to users and only applies to Invite Only communities. When a community is set to Private, it cannot be made Public later.

7 Click *Settings* to set permission for the community, then select or deselect any of the following options:

- Allow producers to move CIs into this community.
- Allow producers to copy CIs into this community.
- Allow producers to link CIs into this community.

8 Click *Create* to create the new community.

7.3 Inviting Members to Join Invite Only Communities

As an owner of an Invitation-Only community, you can send invite notifications to each user you wish to become a member. These notifications automatically show in the user's Inbox.

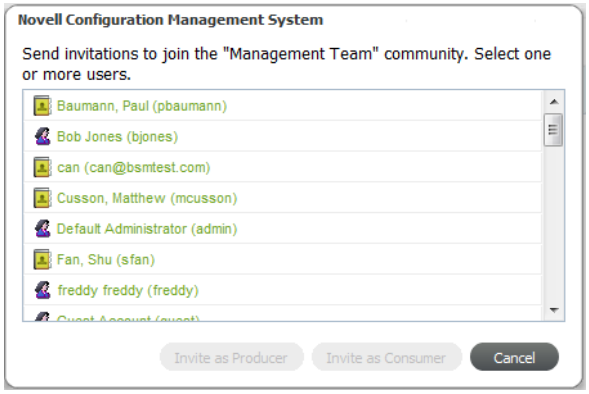
To invite user to join your community:

1 From the Communities page, click *Manage Communities*.

A list of all communities displays.

2 Click *Invite* next to your community.

The *Invite* link, if available, displays in the *Membership* column for each community to open an invitation dialog box:



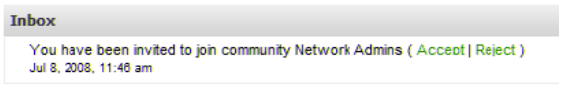
3 Select one or more users.

Use Ctrl+click to select more than one noncontiguous user names.

Use Shift+click to select more than one contiguous user names.

4 Click *Invite as Producer* or *Invite as Consumer* to send the invite.

The users are invited and see a notification in their Inbox on their next login:



7.4 Viewing and Managing Community Roles

A list of users and their roles can be viewed from inside the Edit Community dialog box.

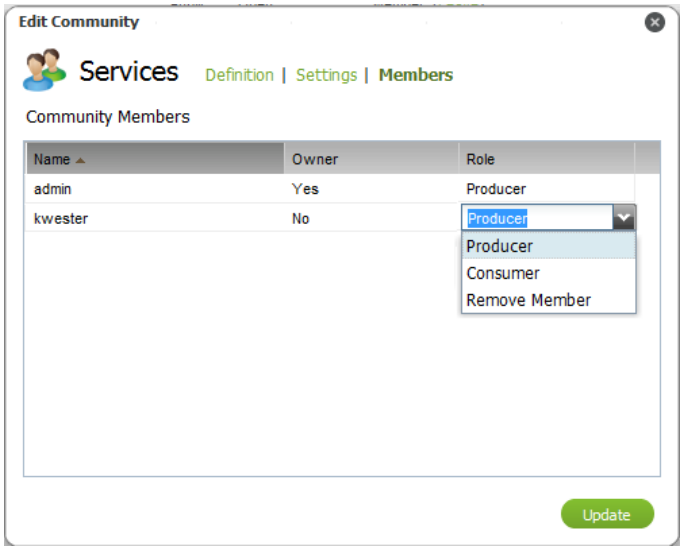
To update roles for community users:

1 From the main menu, click *Actions*, then select *Manage Communities*.

A list of all communities displays.

2 Find the community of interest, then click the link for the community name to open the Edit Community dialog box.

3 Click *Members* to display a list of all users:



4 To change a user's role, click the *Role* value in the user's row to display a drop-down list.

Select *Producer* or *Consumer* to change the user's role for that community.

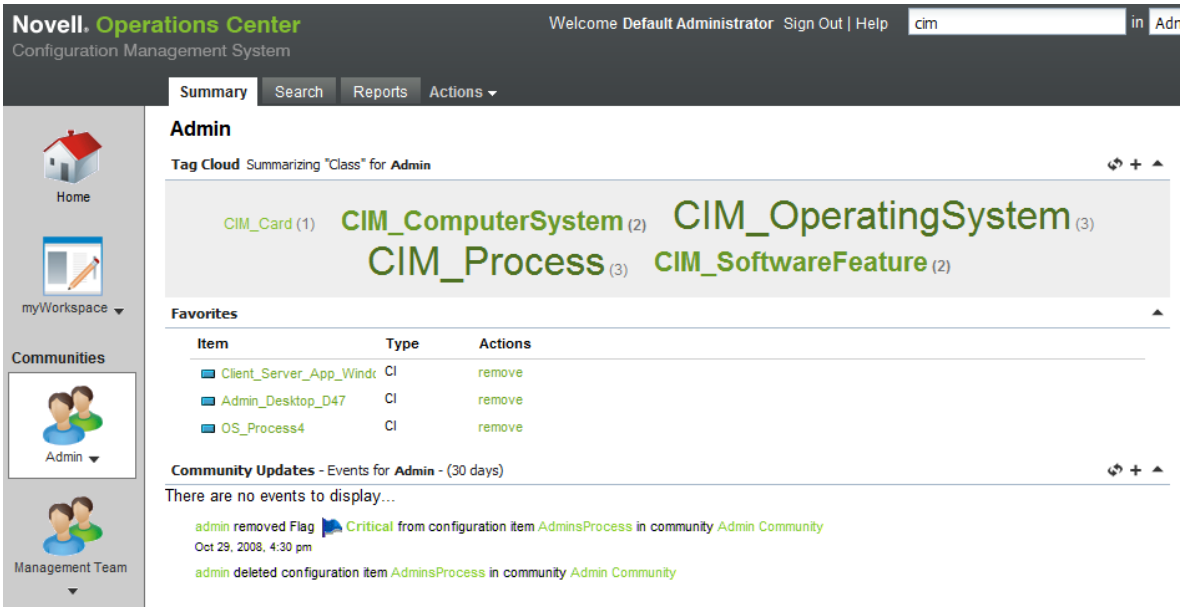
5 Click *Update* to save changes and close the dialog box.

7.5 Setting Favorites for Community Summary Pages

As a community owner, you can select CIs, searches and reports to be linked directly from the community's summary page. Favorites display directly under *Tag Cloud* (when visible) on Summary pages. These should the items or reports that can assist your members the most.

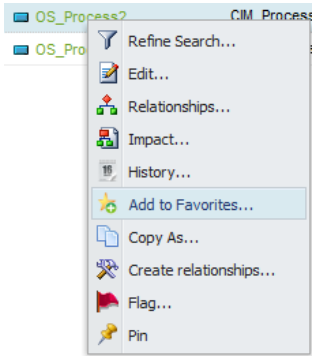
Figure 7-2 illustrates community favorites that are located under the Tag Cloud (if displayed via preferences) and above Community Updates:

Figure 7-2 *Admin Community on Summary Tab*



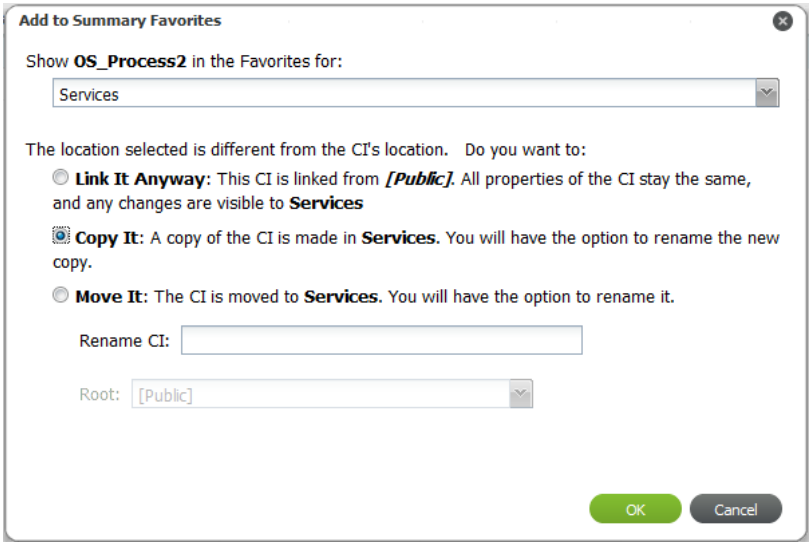
To build a favorites list for a community:

1 Right-click a CI, saved search or report (in a page, search, pinboard, or report), then select *Add to Favorites* to display the *Add to Summary Favorites* menu option:



2 Do one of the following:

- If you want to add the *Favorite* link within the same domain as the item is, accept the default selection, then click *OK*.
- To add the favorite within another domain/community, select the desired location from the drop-down list to display more options in the dialog box:



Do any of the following:

- Select *Link It Anyway* to create a *Favorites* link back to the original item.
- Select *Copy It* to create a copy of the CI, search, or report for the new community where the *Favorites* link is.

  (Optional) Specify a new name for the item.

  The item no longer exists in the former community.
- Select *Move It* to cut and copy the CI, search, or report into the new community where the *Favorites* link is.

  (Optional) Specify a new name for the item.

  The item no longer exists in the former community.

3 Click *OK*.

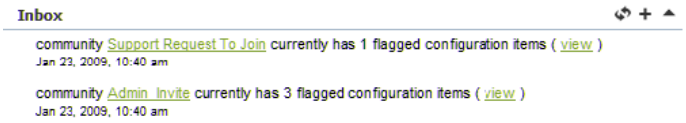
The *Favorites* link is added along with the specified *Copy* or *Move* action, if appropriate.

7.6 Reviewing Flags for Your Communities

As a community owner, you receive notifications in your Inbox that allow you to easily see what flags have been added or edited for CIs in your community.

Figure 7-3 illustrates Flag summary notifications displaying in your Inbox when you are a community owner:

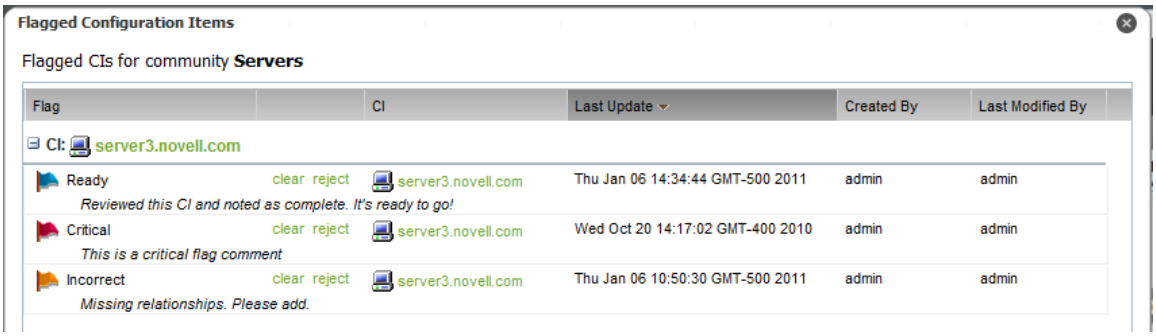
Figure 7-3 *Inbox*



The *View* link next to an item opens a list of all recent flags for that community. This feature is only available for community owners.

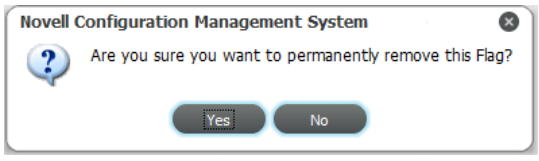
Figure 7-4 illustrates Flagged Configuration Items showing a list of flags and comments made for community CIs:

Figure 7-4 *Flagged Configuration Items*

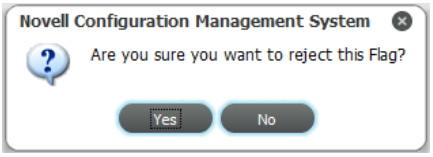


To view *Flags* and *Comments* made in a community:

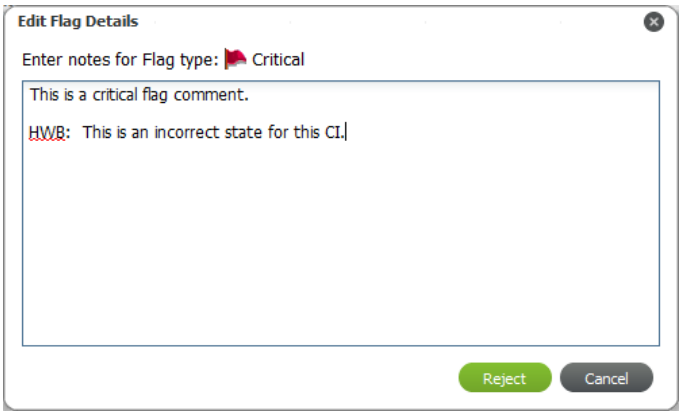
1. In your Inbox, locate an item belonging to the desired community or, switch the Summary page to view only the desired community.
2. Click *View* next to the flag summary notification to open the Flagged Configuration Items dialog box.
3. To view CI details for the associated CI, click the CI name link in the *CI* column.
4. To remove the flag or comment from this view (this does not delete the flag or comment from the CI), click *Clear* next to the flag or comment, then click click *Yes* when the warning message displays:



5 To reject the flag or comment, click *Reject* next to the flag or comment, then click *Yes* when the warning message displays:



The Edit Flag Details dialog displays:



6 Do any of the following:

- Add or edit the flag or comment description.

  Typing over the existing text removes it from the flag or comment.
- Click *Reject* to reject the flag or comment.

  The flag or comment creator can resubmit the flag or comment, if desired.

8 Using the myWorkspace Sandbox

The myWorkspace is a personal workspace to develop and work with CIs, before pushing them into production.

The following sections show you how to use the myWorkspace:

- Section 8.1, “About myWorkspace,” on page 101
- Section 8.2, “Moving or Copying CIs, Searches, and Reports into a Community,” on page 101

8.1 About myWorkspace

The myWorkspace is a personal workspace to develop and work with CIs, before pushing them into production. It is also a great space for developing searches and reports that you are not ready to share with other users. myWorkspace can be used for:

- Getting a head start defining CMDB components that are not yet in production
- Creating a basic CI type for a popular CMDB component that can be copied out to multiple communities and then customized
- Creating standard type searches and reports that can be used as “templates” that are further customized when copied into a community
- Developing searches and reports that are not visible to community members until they are finalized

The myWorkspace area is a great place to try things offline, in a place where only you have access. However, what do you do if you need multiple people contributing to developmental items? Create a new community that is Private, then invite only those members that will contribute before publication. The private community can never be made public but is a perfect development area to support your active communities.

8.2 Moving or Copying CIs, Searches, and Reports into a Community

Because myWorkspace is a private area useful for the development of CIs, searches, and reports, items eventually need to be pushed into production. myWorkspace CIs, searches, and reports can be moved into a different community or copied into one or more communities.

Any item can be copied or moved from one community to another by Section 6.2, “Copying, Moving, or Linking Objects,” on page 76. Also, when you mark something as a favorite, you’ll have the option to link, move, or copy an item.

Depending on the type of item, there are a couple different methods for creating items using myWorkspace templates. For more information about moving items from myWorkspace into a community, see Section 6.2, “Copying, Moving, or Linking Objects,” on page 76.

There might be various CIs or CI structures that are common among your various communities. If this is the case, create the container CIs (parent CI with a structure of child CIs), then use Copy As (or the Copy function in Drag and Drop) to push these CIs into production or into an active community. After you duplicate, you can edit the CIs to update specific properties unique for your items and communities.