



CHAPTER 17

Managing Groups

These topics describe the concepts and processes involved in configuring groups:

- [Understanding Operations Manager Groups, page 17-1](#)
- [Using Group Administration and Configuration, page 17-10](#)

Understanding Operations Manager Groups

A group consists of Unified Communications s, where Unified Communications s refer to devices, applications, and groups. Each group has a set of properties (such as a name, description, permission, and so on), but what defines a group are its associated rules. Rules determine the membership of a group, which may change whenever the rule is evaluated.

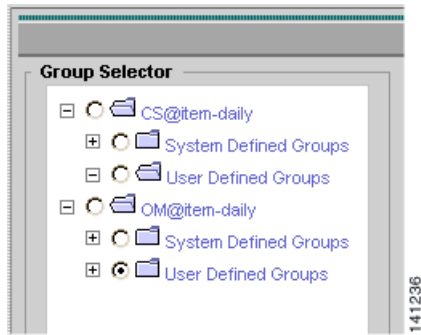
Cisco Unified Operations Manager manages groups in a hierarchical fashion that supports subgrouping. Each child group is a subgroup of a parent group, and its group membership will be a subset of its immediate parent group. For an object to belong to a group, it must satisfy the immediate group rules and the parent group rules.

What you see in the Operations Manager group selector depends on the function you are using. Normally when you view the Operations Manager group selector, some groups are displayed under Operations Manager and other groups under Common Services, as shown in [Figure 17-1 on page 17-2](#).

- Common Services groups are created by Common Services when devices are added to the DCR. These are device groups. The group to which a device belongs is determined by Common Services group rules. Common Services groups include Unified Communications s such as routers, switches, and hubs. All Common Services groups are shared with Operations Manager—in other words, they are shown in the Operations Manager user interface. Groups are only shown when they have members.
- Operations Manager groups are created by Operations Manager. The group to which a device belongs is determined by Operations Manager group rules.

[Figure 17-1](#) shows the object selector, with some groups under Common Services and others under Operations Manager.

Figure 17-1 Group Selector Showing Common Services and Operations Manager Groups

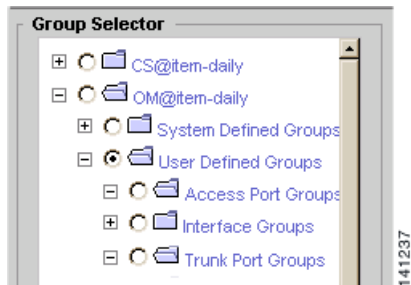


Group	Description
CS@<server-name>	Groups that are controlled by Common Services.
OM@<server-name>	Groups that are controlled by Operations Manager.

As shown in [Figure 17-2](#), the following *types of groups* are supported in Operations Manager:

- System Defined groups—The default grouping of devices in CiscoWorks Common Services. System-defined groups cannot be deleted or edited. For a description of each system-defined group, see the [“Working with System-Defined Groups”](#) section on [page 17-3](#).
- User Defined groups—Groups that you edit or create to reflect the way you manage the network. You can edit or create user-defined groups Operations Manager and determine whether they can be viewed by other users. User-defined groups include the following:
 - Access Port Groups—Predefined groups that you can edit for your own purposes. For a detailed description, see [Working with User-Defined Groups, page 17-9](#).
 - Interface Groups—Predefined groups that you can edit for your own purposes. For a detailed description, see [Working with User-Defined Groups, page 17-9](#).
 - Trunk Port Groups—Predefined groups that you can edit for your own purposes. For a detailed description, see [Working with User-Defined Groups, page 17-9](#).
 - Groups you create (to use with views in the Monitoring Dashboard displays, or with notification groups in Notification Services). These are the only groups you can *create*. These appear in the Group Selector under User Defined Groups so you can view the group membership (device groups are created when the devices are added to the Operations Manager inventory).

Figure 17-2 Group Selector Showing Operations Manager Groups



Groups and ACS

The CiscoSecure Access Control Server (ACS) provides device-based filtering for many of the Operations Manager user interfaces that use Group Administration. For more information on ACS, see [Device-Based Filtering, page 20-22](#).

Working with System-Defined Groups

The group selector displays some groups under Operations Manager and other groups under Common Services. The Common Services groups are created by Common Services and are visible when devices are added to the DCR. See [Common Services System-Defined Groups, page 17-8](#) for more information.

The Operations Manager groups are created by Operations Manager. These groups include Access Port Groups, Trunk Port Groups, and Interface Groups. See [Table 17-1](#) for a list of the Operations Manager system-defined groups.

You can control the polling and thresholds settings for these groups using **Administration > Polling and Thresholds**. See [Configuring Polling and Thresholds, page 19-1](#).

Operations Manager System-Defined Groups

The Operations Manager system-defined groups are visible to all users, and are the default groups that are administered by Operations Manager.

[Table 17-1](#) describes the system-defined groups (device types) that come preconfigured in Operations Manager.

Table 17-1 Operations Manager System-Defined Groups /Device Types

Group Name	Definition	Examples
78XX Media Servers	Any Cisco-supported hardware platform that runs Cisco voice applications.	Cisco Media Convergence Servers that are running: <ul style="list-style-type: none"> • Cisco Unified Communications Manager • Cisco Emergency Responder • Cisco Customer Response Application • Cisco Unity • Cisco Personal Assistant • [and so on]
Access Port Groups <ul style="list-style-type: none"> • 1 GB Ethernet • 10MB-100MB Ethernet • ATM • Others 	A switch port that is connected to a host.	Any switch

Table 17-1 Operations Manager System-Defined Groups (continued)/Device Types

Group Name	Definition	Examples
<p>Cisco Unified Communications Manager or Cluster</p> <p>When a single Cisco Unified Communications Manager or a cluster is added to Operations Manager, Group Management automatically creates a group under the Cisco Unified Communications Manager or Cluster folder. The new group name will be preceded by VE; for example, VE-TEST1-CCM.</p> <p>Under the new folder, the following subfolders appear:</p> <ul style="list-style-type: none"> • 78XX Media Servers • Digital Voice Gateways • Gatekeepers • Voice Gateways • Voice Mail Gateways 	<p>Cisco Unified Communications Manager or cluster. Subgroups of the Cisco Unified Communications Manager or Cluster group contain all of the devices associated with the corresponding instance of the Cisco Unified Communications Manager or cluster.</p>	—
	All media servers running Cisco Unified Communications Manager in the cluster.	MCS 78XX box
	Any DT-24+ or DE-30+ devices that belong to a Cisco Unified Communications Manager or a cluster.	<ul style="list-style-type: none"> • DT-24+ • DE-30+
	Gatekeepers to which a Cisco Unified Communications Manager or cluster is registered.	<ul style="list-style-type: none"> • Cisco 2600 • Cisco 3640 • Cisco 3660 • Cisco 7200 • [and so on]
	Voice gateways whose port (interface) acts as a gateway to a Cisco Unified Communications Manager or a cluster.	<ul style="list-style-type: none"> • VG-200 • Catalyst 6000 (with a T1, E1, or FXS card) • SIP-Gateway
	Any voice mail gateway that belongs to a Cisco Unified Communications Manager or a cluster.	<ul style="list-style-type: none"> • DPA-7610 • DPA-7639
<p>Cisco Unified Communications Applications</p> <p>Under the All Cisco Unified Communications Applications folder, the following subgroups appear:</p> <ul style="list-style-type: none"> • Cisco Unified Presence • Communications Manager Business Edition • Communications Manager Express 	<p>Cisco Unified Communications Applications running on a device.</p>	—
	Any Cisco Unified Presence Server applications running on a media server.	Cisco Unified Presence Servers
	Any Cisco Unified Communications Manager Business Edition applications running on a media server.	Cisco Unified Communications Manager Business Edition
	Any Cisco Unified Communications Manager Express applications running on a router.	Cisco Unified Communications Manager Express

Table 17-1 Operations Manager System-Defined Groups (continued)/Device Types

Group Name	Definition	Examples
<ul style="list-style-type: none"> Communications Managers 	Any Cisco Unified Communications Manager applications running on a media server.	Cisco Unified Communications Manager
<ul style="list-style-type: none"> Conference Server 	Media servers running Cisco Conference Connection.	Cisco Conference Connection
<ul style="list-style-type: none"> Customer Response Applications 	Any Cisco Customer Response Application (CRA) running on a media server.	Cisco CRA
<ul style="list-style-type: none"> Customer Voice Portals 	Any Cisco Unified Customer Voice Portal (CVP) application.	Cisco Unified Customer Voice Portal
<ul style="list-style-type: none"> Emergency Responders 	Any Cisco Emergency Responder running on a media server.	Cisco Emergency Responder
<ul style="list-style-type: none"> Expert Advisor 	Any Cisco Expert Advisor running on a media server.	Cisco Expert Advisor
<ul style="list-style-type: none"> Unified Contact Center Enterprise 	Any Cisco Unified CCE running on a media server	Cisco Unified CCE
<ul style="list-style-type: none"> Meeting Place 	Any Cisco Meeting Place running on a media server.	Cisco Meeting Place
<ul style="list-style-type: none"> Meeting Place Express 	Any Cisco Meeting Place Express running on a media server.	Cisco Meeting Place Express
<ul style="list-style-type: none"> Personal Assistants 	Any Cisco Personal Assistant (PA) running on a media server.	Cisco PA
<ul style="list-style-type: none"> Unity 	Any Cisco Unity application running on a media server.	Cisco Unity
<ul style="list-style-type: none"> Unity Connection 	Any Cisco Unity Connection application running on a media server.	Cisco Unity Connection
<ul style="list-style-type: none"> Unity Express 	Any Cisco Unity Express application running on a media server.	Cisco Unity Express
Digital Voice Gateways	Any DT-24+ or DE-30+ devices.	<ul style="list-style-type: none"> DT-24+ DE-30+
Gatekeepers	Gatekeepers that provide address translation, bandwidth control and access control to H323 devices including H323 gateways and Cisco Unified Communications Manager Intercluster Trunks.	<ul style="list-style-type: none"> Cisco 2600 Cisco 3640 Cisco 3660 Cisco 7200 [and so on]

Table 17-1 Operations Manager System-Defined Groups (continued)/Device Types

Group Name	Definition	Examples
H323 Gateways	Switch modules or routers that have voice ports and are configured as H323 gateways.	<ul style="list-style-type: none"> • Catalyst 4000 with Access Gateway Module • Cisco 1700 • Cisco 2600 • Cisco 2800 • Cisco 3600 • Cisco 3700 • Cisco 3800 • [and so on]
IP SLA Devices	Cisco devices that are running Cisco IOS IP SLA (IP SLA).	IP SLA-capable devices
Interface Groups: <ul style="list-style-type: none"> • 1 GB Ethernet • 10MB-100MB Ethernet • ATM • Backup • Dial-On-Demand • FDDI • ISDN B channel • ISDN D channel • ISDN physical interface • Others • Serial • Token ring 	Devices that represent a logical (typically Layer 2) connection to the network.	Any host, hub, router, or switch
MGCP Gateways	Switch modules or routers that have voice ports and are configured as MGCP gateways.	<ul style="list-style-type: none"> • Catalyst 6000 with T1/E1/FXS ports • Cisco 1700 • Cisco 2600 • Cisco 2800 • Cisco 3600 • Cisco 3700 • Cisco 3800 • [and so on]

Table 17-1 Operations Manager System-Defined Groups (continued)/Device Types

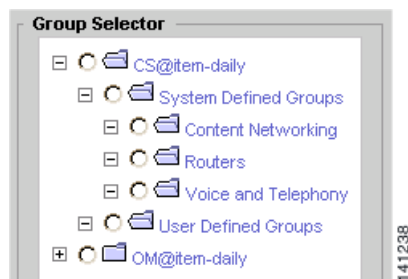
Group Name	Definition	Examples
Phones with tests configured	Cisco Unified IP Phones that are configured for testing.	<ul style="list-style-type: none"> • 7910 • 7935 • 7960 • 12SP • 30VIP
SRST Devices	Devices that are configured for Survivable Remote Site Telephony (SRST).	SRST-enabled routers
Switches with phones connected	Cisco switches that have Cisco Unified IP Phones connected to them (through ports on the switch).	<ul style="list-style-type: none"> • Catalyst 6000 • Catalyst 3500 XL • Catalyst 4000 • Catalyst 2900 • Catalyst 2950 XL
Trunk Port Groups <ul style="list-style-type: none"> • 1 GB Ethernet • 10MB-100MB Ethernet • ATM • Others 	A switch port that is connected to a switch, hub, or bridge.	Any switch, hub, or bridge

Table 17-1 Operations Manager System-Defined Groups (continued)/Device Types

Group Name	Definition	Examples
Voice Gateways	Any Cisco switch or router that is voice enabled (contains a voice card or voice port and its function is to aid IP Telephony operations).	Switch or router with BRI, E and M, FXS, FXO, T1 or E1 ports. Routers with gatekeeper functions. For example: <ul style="list-style-type: none"> • Cisco 1700 • Cisco 2600 • Cisco 3600 • Cisco 5300 • Cisco 5400 • Cisco 5800 • Cisco 7200 • Cisco 7500 • Cisco VG-200 • Cisco VG-248 • Catalyst 6000 • Catalyst 4000 • Catalyst 3500 • Catalyst 2900 • [and so on]
Voice Mail Gateways	Any device that connects IP Telephony voice mail systems with legacy voice mail systems.	<ul style="list-style-type: none"> • DPA-7610 • DPA-7639

Common Services System-Defined Groups

The Common Services system-defined groups, as shown in [Figure 17-3](#), are visible to all users, and are the default groups administered by Common Services. Not all system-defined groups are shown in [Figure 17-3](#) because groups only appear in the group selector when they have device members (in other words, devices in the DCR that belong to that group).

Figure 17-3 Group Selector Showing Common Services System-Defined Groups

The following are the Common Services system-defined groups:

- Broadband Cable
- Content Networking
- DSL and LRE
- Interfaces and Modules
- Network Management
- Optical
- Routers
- Security and VPN
- Storage Networking
- Switches and Hubs
- Universal Gateways and Access Servers
- Unknown
- Voice and Telephony
- Wireless

For more information about Common Services system-defined groups, refer to the Common Services online help.

Working with User-Defined Groups

Because you cannot change the rules for system-defined groups, Operations Manager provides user-defined groups that can contain the devices, ports, or interfaces in which you are interested. Port and interface containment is only seen and used by Polling and Thresholds (see [Configuring Polling and Thresholds, page 19-1](#)), but device groups will contain members when devices are added to the Operations Manager inventory. Once you edit or create a group, you can determine whether other users can view the group.

User-defined groups are the basis for the views that appear in the Monitoring Dashboards (Service Level View, Alerts and Events, Phone Activities, and Service Quality Alerts). For every user-defined group you create, a corresponding view is automatically created. For creating user-defined groups, see [Creating and Editing Groups, page 17-11](#).

By default, no devices belong to the predefined user-defined groups. To see membership details for the groups that are created in the Access Port, Interface, and Trunk port folders, you must go to the polling and thresholds pages. (See [Configuring Polling and Thresholds, page 19-1](#).)

[Table 17-2](#) describes the predefined user-defined groups.

Table 17-2 Operations Manager User Defined Groups

Group Name	Use this group to monitor...	Settings you can configure for this group:
Access Port Groups	Access ports	Thresholds
Interface Groups	Interfaces	Thresholds
Trunk Ports Groups	Trunk ports	Thresholds

Using Group Administration and Configuration

The Group Administration and Configuration page is where all group management activities take place. To open the Group Administration and Configuration page, select **Devices > Device Groups**.

These topics explain how to use the Group Administration and Configuration page:

- [Creating and Editing Groups, page 17-11](#)
- [Viewing Group Details, page 17-29](#)
- [Viewing Membership Details, page 17-30](#)
- [Refreshing Membership, page 17-31](#)
- [Deleting Groups, page 17-32](#)

Figure 17-4 shows an example of the Group Administration and Configuration page.

Figure 17-4 Group Administration and Configuration Page

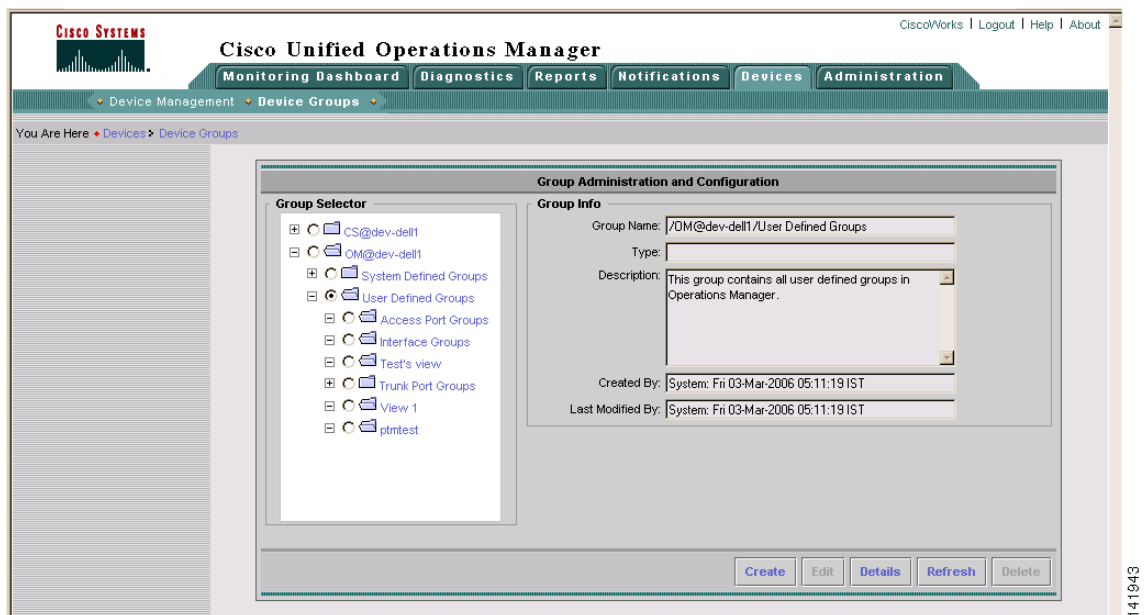


Table 17-3 describes the fields in the Group Administration and Configuration page.

Table 17-3 *Fields on Group Administration and Configuration Page*

GUI Element	Description
Group selector	A hierarchical display of all available groups.
Group Info pane	When you select an item from the Group Selector, the Group Info pane displays the following information: <ul style="list-style-type: none"> • Group Name—The name of the group you selected. • Type—The type of Unified Communications s in the selected group. • Description—A text description of the group. • Created By—The person who created the group. • Last Modified By—The last person to edit the group settings.
Create button	Starts the Group Creation Wizard for creating a group, as described in the “Creating a Group” section on page 17-12.
Edit button	Starts the Group Edit Wizard for editing an existing group, as described in the “Editing Group Properties” section on page 17-19.
Details button	Opens the Properties: Details page, as described in the “Viewing Group Details” section on page 17-29.
Refresh button	Refreshes a group’s membership, as described in the “Refreshing Membership” section on page 17-31.
Delete button	Deletes a group, as described in the “Deleting Groups” section on page 17-32.

Creating and Editing Groups

The processes for creating and editing groups are similar.

Keep these points in mind:

- You can only *edit* the predefined user-defined group folders (Access Port Groups, Interface Groups, and Trunk Port Groups), which means you cannot remove these folders from the device selector. Once you create a user-defined group under any of these folders, you can edit or delete the group you created. (See [Creating an Access Port, Interface, or Trunk Port Group](#), page 17-15 and [Editing an Access Port, Interface, or Trunk Port Group](#), page 17-21.)
- You can *create or edit* all other user-defined groups (to use with, for example, views in the Monitoring Dashboard displays, or with notification groups in Notification Services). For example, you could create a group called test, which would appear directly under Operations Manager User Defined Groups in the Operations Manager group selector. (See [Creating a Group](#), page 17-12 and [Editing Group Properties](#), page 17-19.)

Operations Manager uses the Group Creation Wizard to guide you through the steps required to create or edit a group. The wizards steps will vary depending on what you are creating. For example, the steps for creating a group using a template (see [Creating a Group—Using a Template](#), page 17-17 and [Editing Group Properties—For a Group that Uses a Template](#), page 17-22) are different from the steps for creating a user-defined group without using a template. Further, if you are creating an Access Port, Interface, or Trunk Port group, the wizard steps are different.

For creating a user-defined group, the wizard consist of four steps:

1. Setting properties (for details, see [Creating a Group, page 17-12](#) and [Editing Group Properties, page 17-19](#)).
2. Creating rules (for details, see [Understanding Rules, page 17-23](#)).
3. Editing group membership (for details, see [Finalizing Group Membership, page 17-28](#)).
4. Viewing the summary (for details, see [Viewing the Group Summary, page 17-28](#)).

**Note**

Operations Manager provides you with templates to make it easier for you to create user-defined groups. The four templates that are provided are based on the following:

- Location
- Name
- Subnet
- Service

For instructions on creating groups using the templates, see [Creating a Group—Using a Template, page 17-17](#).

Creating a Group

-
- Step 1** Select **Devices > Device Groups**. The Group Administration and Configuration page appears.
- Step 2** In the Group Selector, select the parent group under which you want the new group to reside.

**Note**

You must select the User Defined Groups folder or any subfolder. You can only add user-defined groups under the User Defined Groups folder.

- Step 3** Click **Create**. The Properties: Create page appears. [Figure 17-5](#) shows an example of the Properties: Create Page.

Figure 17-5 Properties: Create Page

- Step 4** In the Select Group Type field, select the Rule radio button.
- Step 5** Enter a group name for the new group. The group name cannot contain single quotation marks, dots, or backslashes.
- Step 6** If you do not want to copy the attributes of an existing group to your new group, proceed to [Step 7](#). If you want to copy the attributes of an existing group to the new group, do the following:



Note All attributes except the group name are copied to the new group.

- a. Click **Select Group**. The Replicate Attributes page appears.
 - b. Select the group from which you want to copy the attributes.
 - c. Click **OK**.
- Step 7** If you want to change the parent group (the location where the group will reside in the Group Selector), do the following:
- a. Click **Change Parent**. The Select Parent page appears.
 - b. Select the parent group.
 - c. Click **OK**.
- Step 8** (Optional) Enter a description.
- Step 9** Choose how you want the group membership updated:
- If you want the membership for this group updated automatically, select automatic.
 - If you want the membership for this group updated only when the Refresh button is clicked, select Only Upon User Request.
- Step 10** Select a Visibility Scope:
- Private—Available to created user only
 - Public—Available to all users
- Step 11** Click **Next**. The Rules: Create page appears. (For more information on creating rules, see [Understanding Rules, page 17-23](#).)

Do one of the following:

- To create rules to apply to the group, go to [Step 12](#).
- If you only want to add devices, click **Next** and select the devices on the Membership: Create page. Then go to [Step 13](#).



Note If you need to return to any of the previous pages in the wizard, click **Back**.

Step 12 Create all rules that you want to apply to the group:

- a. From the first list, select a logical operator.



Note The list of logical operators is enabled after at least one rule expression is entered.

- b. Select an object type.
- c. Select a variable.
- d. Select an operator.
- e. In the Value field, enter a value.
- f. Click **Add Rule Expression**. The rule expression appears in the Rule Text box.



Note You can manually add or change any of the text in the Rule Text box. If you enter a single backslash (\), an error is displayed. To enter a single backslash in the Rule Text box, you must type two backslashes (\\) in place of the single backslash. You should always check the syntax after changing a rule expression.

- g. If you have added complex rules (containing both AND and OR conditions), you must manually enter parentheses, as in the following example:

```
(:AccessPort.Mode equals "" OR
:AccessPort.Mode contains "BACKUP" OR
:AccessPort.Mode contains "NORMAL") AND
(:AccessPort.DuplexMode contains "HALFDUPLEX" OR
:AccessPort.DuplexMode contains "FULLDUPLEX")
```

- h. To verify that the rule syntax is correct, click **Check Syntax**. A dialog box appears, stating that the syntax is valid. Click **OK**.
- i. If you want to view the rules for the parent group, select **View Parent Rules**.



Note All rules assigned to a parent group also apply to any of its subgroups.

- j. Click **Next**. The Membership: Create page appears.

Step 13 You can add or remove specific Unified Communications s from the group membership (not supported for port and interface groups).



Note The group's rule captures the list of Unified Communications s that are added to or deleted from the group. The rule will contain an Includelist and/or Excludelist section to reflect this.

Although it is acceptable for a rule to have more than one Includelist or Excludelist, the recommended practice is to consolidate them, forming one Includelist and one Excludelist. Check for duplicates across both lists and ensure that no device is both included and excluded.



Note Some IPSLA devices do not automatically appear in the Unified Communications s Matching Membership column, even though they belong to the created group. You will have to manually move these devices from the Unified Communications s from Parent Group column to the Unified Communications s Matching Membership column in the Membership: Create page.

To add an Unified Communications :

- a. In the Unified Communications s from Parent Group column, select the device to add.
- b. Click **Add**.

To delete an Unified Communications :

- a. In the Unified Communications s Matching Membership column, select the device to remove.
- b. Click **Remove**.

Step 14 Click **Next**. The group's information appears on the Summary: Create page.

Step 15 Click **Finish**.

Creating an Access Port, Interface, or Trunk Port Group

Step 1 Select **Devices > Device Groups**. The Group Administration and Configuration page appears.

Step 2 In the Group Selector, select the parent group under which you want the new group to reside.



Note You must select one of the following folders: Access Port Groups, Interface Groups, or Trunk Port Groups.

Step 3 Click **Create**. The Properties: Create page appears.

Step 4 Enter a group name for the new group.



Note When you enter the group name; if you want to use special characters, the only allowable special characters are periods, underscores, and dashes.

Step 5 If you do not want to copy the attributes of an existing group to your new group, proceed to [Step 7](#). If you want to copy the attributes of an existing group to the new group, do the following:



Note All attributes except the group name are copied to the new group.

- a. Click **Select Group**. The Replicate Attributes page appears.
- b. Select the group from which you want to copy the attributes.
- c. Click **OK**.

Step 6 If you want to change the parent group (the location where the group will reside in the Group Selector), do the following:

- a. Click **Change Parent**. The Select Parent page appears.
- b. Select the parent group.
- c. Click **OK**.

Step 7 (Optional) Enter a description.

Step 8 Select a Visibility Scope:

- Private—Available to created user only
- Public—Available to all users

Step 9 Click **Next**. The Rules: Create page appears. (For more information on creating rules, see [Understanding Rules, page 17-23](#).)



Note If you need to return to any of the previous pages in the wizard, click **Back**.

Step 10 Create all rules that you want to apply to the group:

- a. From the first list, select a logical operator.



Note The list of logical operators is enabled after at least one rule expression is entered.

- b. Select an object type. You will have only one choice. This is dictated by which parent group you selected in [Step 2](#).
- c. Select a variable.
- d. Select an operator.
- e. In the Value field, enter a value.
- f. Click **Add Rule Expression**. The rule expression appears in the Rule Text box.



Note You can manually add or change any of the text in the Rule Text box. If you enter a single backslash (\), an error is displayed. To enter a single backslash in the Rule Text box, you must type two backslashes (\\) in place of the single backslash. You should always check the syntax after changing a rule expression.

- g. If you have added complex rules (containing both AND and OR conditions), you must manually enter parentheses, as in the following example:

```
(:AccessPort.Mode equals "" OR
:AccessPort.Mode contains "BACKUP" OR
:AccessPort.Mode contains "NORMAL") AND
(:AccessPort.DuplexMode contains "HALFDUPLEX" OR
:AccessPort.DuplexMode contains "FULLDUPLEX")
```

- h. To verify that the rule syntax is correct, click **Check Syntax**. A dialog box appears, stating that the syntax is valid. Click **OK**.
- i. If you want to view the rules for the parent group, select **View Parent Rules**.



Note All rules assigned to a parent group also apply to any of its subgroups.

- j. Click **Next**. The group's information appears on the Summary: Create page.

Step 11 Click **Finish**.

Creating a Group—Using a Template

To simplify the group creation process, Operations Manager provides you with templates to help you create a group. The groups you create can only be listed in the group selector under the User Defined Groups folder.



Note

The groups that you create using these templates can only be based on the single attribute of the template. If you need to create a group using multiple attributes, you must create a rule. See [Creating a Group, page 17-12](#).

Operations Manager provides the following templates:

- Location based—Creates a group based on device locations. In the group creation wizard you can enter a comma-separated list of locations, and all the devices in the listed locations will appear in the group.
- Name based—Creates a group based on device names. In the group creation wizard you can enter a comma-separated list of device names, and all the devices with the specified names will appear in the group.
- Subnet based—Creates a group based on the devices's subnet. In the group creation wizard you can enter a comma-separated list of subnets, and all the devices in those subnets will appear in the group.
- Service based—Creates a group based on the type of service the device provides. In the group creation wizard you can enter a comma-separated list of device services, and all the devices that provide the specified services will appear in the group. There are specific services that you can enter to create a service based group. You can only use the services that appear in the following list:



Note The service name must be entered just as it appears in this list.

- callmanager
- IPSLA

- callmanager express
- unity express
- conference connection
- unity connection
- emergency responder
- unity
- SRST
- gatekeeper
- h323
- mgcp
- Unified CCE

Step 1 Select **Devices > Device Groups**. The Group Administration and Configuration page appears.

Step 2 In the Group Selector, select the parent group under which you want the new group to reside.



Note You must select the User Defined Groups folder or any subfolder. You can only add user-defined groups under the User Defined Groups folder.

Step 3 Click **Create**. The Properties: Create page appears.

Step 4 In the Select Group Type field, select the Template radio button.

Step 5 Enter a group name for the new group.



Note When you enter the group name; if you want to use special characters, the only allowable special characters are periods, underscores, and dashes.

Step 6 If you want to change the parent group (the location where the group will reside in the Group Selector), do the following:

- a. Click **Change Parent**. The Select Parent page appears.
- b. Select the parent group.
- c. Click **OK**.

Step 7 (Optional) Enter a description.

Step 8 Choose how you want the group membership updated:

- If you want the membership for this group updated automatically, select automatic.
- If you want the membership for this group updated only when the Refresh button is clicked, select Only Upon User Request.

Step 9 Select a Visibility Scope:

- Private—Available to the creator only
- Public—Available to all users

Step 10 Click **Next**. The Templates: Create page appears.

Step 11 In the Template Name field, select the template you want to base your group selection on.

Step 12 (Optional) Enter a description.

Step 13 In the List of Values field, enter the values that you want to use for filtering. For example, if you choose the name-based template, you can enter a list of device names.



Note Wild cards are not supported. Also, the operator that is being used for filtering is contains. For example, if you enter *test*, all devices that contain *test* anywhere in their name will be displayed.

Step 14 Click **Next**. The Membership: Create page appears. You can view the members of the group, but you cannot make any changes.

Step 15 Click **Next**. The group's information appears on the Summary: Create page.

Step 16 Click **Finish**.

Editing Group Properties

Step 1 Select **Devices > Device Groups**. The Group Administration and Configuration page appears.

Step 2 In the Group Selector, select the group you want to edit.

Step 3 Click **Edit**. The Properties: Edit page appears.

Step 4 You can edit the following in the Properties: Edit page:

- Group Name



Note When you enter the group name; if you want to use special characters, the only allowable special characters are periods, underscores, and dashes.

- Description
- Membership update type (not supported for port and interface groups)
- Visibility Scope



Note The parent group is displayed, but it cannot be edited.

Step 5 Click **Next**. The Rules: Edit page appears. For more information on creating rules, see [Understanding Rules, page 17-23](#).



Note If you need to return to any of the previous pages in the wizard, click **Back**.

Step 6 You can add new rules or delete existing rules in the Rules: Edit page.

To add a new rule:

- From the first list, select a logical operator.



Note The list of logical operators is enabled after at least one rule expression is entered.

- b. From the Object Type list, select an object type.
- c. From the Variable list, select a variable.
- d. From the Operator list, select an operator.
- e. In the Value field, enter a value.
- f. Click **Add Rule Expression**. The rule expression appears in the Rule Text box.



Note You can manually add or change any of the text in the Rule Text box. If you enter a single backslash (\), an error is displayed. To enter a single backslash in the Rule Text box, you must type two backslashes (\\) in place of the single backslash. You should always check the syntax after changing a rule expression.

- g. If you have added complex rules (containing both AND and OR conditions), you must manually enter parentheses, as in the following example:

```
(:AccessPort.Mode equals "" OR
:AccessPort.Mode contains "BACKUP" OR
:AccessPort.Mode contains "NORMAL") AND
(:AccessPort.DuplexMode contains "HALFDUPLEX" OR
:AccessPort.DuplexMode contains "FULLDUPLEX")
```

- h. To verify that the syntax of the rule is correct, click **Check Syntax**. A dialog box appears, stating that the syntax is valid. Click **OK**.
- i. If you want to view the rules for the parent group, select **View Parent Rules**.



Note All rules assigned to a parent group also apply to any of its subgroups.

- j. Click **Next**. The Membership: Edit page appears.

To delete a rule:

- a. In the Rule Text box, select the entire rule text and press the **Delete** key.
After deleting the rule, you must click the page so that the page can refresh, removing the list of logical operators.
- b. Click **Next**. The Membership: Edit page appears.

Step 7 You can add or remove specific Unified Communications s from the group membership (not supported for port and interface groups).



Note The group's rule captures the list of Unified Communications s that are added to or deleted from the group. The rule will contain an Includelist and/or Excludelist section to reflect this.

Although it is acceptable for a rule to have more than one Includelist or Excludelist, the recommended practice is to consolidate them, forming one Includelist and one Excludelist. Check for duplicates across both lists and ensure that no device is both included and excluded.



Note Some IPSLA devices do not automatically appear in the Unified Communications s Matching Membership column, even though they belong to the created group. You will have to manually move these devices from the Unified Communications s from Parent Group column to the Unified Communications s Matching Membership column in the Membership: Create page.

To add an Unified Communications :

- a. In the Available Unified Communications s from Parent Group column, select the device to add.
- b. Click **Add**.

To remove an Unified Communications :

- a. In the Unified Communications s Matching Membership Criteria column, select the device to remove.
- b. Click **Remove**.

Step 8 Click **Next**. The group's information appears on the Summary: Edit page.

Step 9 Click **Finish**.

Editing an Access Port, Interface, or Trunk Port Group

Step 1 Select **Devices > Device Groups**. The Group Administration and Configuration page appears.

Step 2 In the Group Selector, select the access port group, interface group, or trunk port group that you want to edit.

Step 3 Click **Edit**. The Properties: Edit page appears.

Step 4 You can edit the following in the Properties: Edit page:

- Description
- Visibility scope

Step 5 Click **Next**. The Rules: Edit page appears. (For more information on creating rules, see [Understanding Rules, page 17-23](#).)



Note If you need to return to any of the previous pages in the wizard, click **Back**.

Step 6 You can add new rules or delete existing rules in the Rules: Edit page.

To add a new rule:

- a. From the first list, select a logical operator.



Note The list of logical operators is enabled after at least one rule expression is entered.

- b. From the Object Type list, select an object type.
- c. From the Variable list, select a variable.
- d. From the Operator list, select an operator.
- e. In the Value field, enter a value.

- f. Click **Add Rule Expression**. The rule expression appears in the Rule Text box.



Note You can manually add or change any of the text in the Rule Text box. If you enter a single backslash (\), an error is displayed. To enter a single backslash in the Rule Text box, you must type two backslashes (\\) in place of the single backslash. You should always check the syntax after changing a rule expression.

- g. If you have added complex rules (containing both AND and OR conditions), you must manually enter parentheses, as in the following example:

```
(:AccessPort.Mode equals "" OR
:AccessPort.Mode contains "BACKUP" OR
:AccessPort.Mode contains "NORMAL") AND
(:AccessPort.DuplexMode contains "HALFDUPLEX" OR
:AccessPort.DuplexMode contains "FULLDUPLEX")
```

- h. To verify that the syntax of the rule is correct, click **Check Syntax**. A dialog box appears, stating that the syntax is valid. Click **OK**.
- i. If you want to view the rules for the parent group, select **View Parent Rules**.



Note All rules assigned to a parent group also apply to any of its subgroups.

- j. Click **Next**. The Membership: Edit page appears.

To delete a rule:

- a. In the Rule Text box, select the entire rule text and press the **Delete** key.
After deleting the rule, you must click the page so that the page can refresh, removing the list of logical operators.
- b. Click **Next**. The group's information appears on the Summary: Edit page.

Step 7 Click **Finish**.

Editing Group Properties—For a Group that Uses a Template

Step 1 Select **Devices > Device Groups**. The Group Administration and Configuration page appears.

Step 2 In the Group Selector, select the group you want to edit.

Step 3 Click **Edit**. The Properties: Edit page appears.

Step 4 You can edit the following in the Properties: Edit page:

- Group Name



Note When you enter the group name; if you want to use special characters, the only allowable special characters are periods, underscores, and dashes.

- Description
- Membership update type (not supported for port and interface groups)

- Visibility Scope



Note The parent group is displayed, but it cannot be edited.

Step 5 Click **Next**. The Templates page appears.

Step 6 You can change the following in the Templates page:

- Template
- Description
- List of Values

Step 7 Click **Next**. The Membership: Edit page appears. You can view the members of the group, but you cannot make any changes.

Step 8 Click **Next**. The group's information appears on the Summary: Edit page.

Step 9 Click **Finish**.

Understanding Rules

Every group is defined by a set of rules. A rule set contains a Boolean combination of individual rule expressions.

Rules are created to filter in the objects that you want to belong to the group, and to filter out those that you do not want in the group. When determining which Unified Communications s belong to a group, Group Management compares object information to the rule. If an Unified Communications 's information satisfies all of the rule's requirements, it is placed in the group.

One or more rule expressions can be applied to form a rule.

Each rule expression contains the following:

<object type>.<variable> <operator> <value>

For example:

```
:Gatekeeper.Cisco_CommunicationManager_or_Cluster.Name equals "ccm test1"
```

Rules are defined through the Group Creation Wizard on the Rules: Create page.

You can define the following:

- OR, AND, EXCLUDE—Logical operators. This field appears after a rule expression is added in the Rule Text box.
 - OR—Include devices that fulfill the requirements of either rule.
 - AND—Include only devices that fulfill the requirements of both rules.



Note When using the AND operator, the rule expressions cannot contain different types of devices. For example, you cannot use the AND operator with the following rule expressions:

```
:Gatekeeper
:MediaServer
```

In this example, you would have to use the OR operator.

- EXCLUDE—Do not include these devices.
- Object Type—The type of object that is used to form a group. The object can be all devices, a group, or a type of device.

In the Object Type field you will see the following choices:

- AccessPort
- Device
- CUE
- DigitalVoiceGateway
- Gatekeeper
- Unified CCE
- MediaServer
- PhoneAccessSwitch
- VoiceGateway
- VoiceMailGateway
- Interfaces
- PRPhone
- SRSTDevice
- TrunkPort
- Variable—An attribute of the selected object type to be used for the rule. The list of possible variables changes based on the object type that is selected.
- Operator—The operator to be used in the rule. The list of possible operators changes based on the object type and the variable selected.



Note When using the *equals* operator the rule is case-sensitive.

- Value—The value of the rule expression. The possible values depend upon the object type, variable, and operator selected. Depending on the operator selected, the value may be free-form text or a list of values.

Some devices (Object Types) cannot be grouped using certain attributes (Variables), because the attributes for these devices do not exist. [Table 17-4](#) lists the devices and the attributes.

Table 17-4 *Devices and Attributes that Cannot Be Used for Grouping*

Device (Object Type)	Attributes (Variables)
DigitalVoiceGateway	<ul style="list-style-type: none"> • IP.Address • IP.Netmask • Location • Type • SystemObjectID
Any device with these attributes	<ul style="list-style-type: none"> • VoiceInterface.Type • VoicePort.Type

**Note**

After you have defined the rule, you should verify the syntax. You can do this on the Rules: Create page.

Figure 17-6 shows an example of the Rules: Create page.

Figure 17-6 *Rules: Create Page*

Table 17-5 describes the fields on the Rules: Create page of the Group Creation Wizard.

Table 17-5 *Fields on the Rules: Create Page*

GUI Element	Description
OR, AND, EXCLUDE drop down list	<p>Logical operators.</p> <ul style="list-style-type: none"> • OR—Include devices that fulfill the requirements of either rule. • AND—Include only devices that fulfill the requirements of both rules. • EXCLUDE—Do not include these devices. <p>This field is present only after a rule expression is added in the Rule Text box.</p>
Object Type drop down list	The type of object that is used to form the group.
Variable drop down list	The attribute of the selected object type to be used for the rule.
Operator drop down list	The operator to be used in the rule.
Value field	The value of the rule expression.
Add Rule Expression button	Used to add the rule expression to the group rules.
Rule Text field	Displays the rule.
Check Syntax button	Verifies that the rule syntax is correct.
View Parent Rules button	Used to view the parent group rules. Note All parent group rules apply to the subgroups.

Understanding What to Enter in the Value Field

Most of the values that can be entered in the Value field of the Rules: Create page are self-evident, but some of the Unified Communications s in the Variables field have special meanings or restrictions on how to enter the related attribute in the Value field.

[Table 17-6](#) describes the Unified Communications s that appear in the Variable field of the Rules: Create page that might need further explanation.

Table 17-6 Explanations of Special Variables

Variable	Explanation
Cisco_CommunicationManager_Or_Cluster.Name	The name of the cluster to which the device belongs. You can find the cluster names by opening the Group Configuration page and selecting the Cisco_CommunicationManager_Or_Cluster group. A list of cluster group names appears. Use these names in the Value field of the Rules: Create page.
Type	<p>The capability of the device.</p> <p>In the Value field of the Rules: Create page, use the following corresponding values for the device:</p> <ul style="list-style-type: none"> • MediaServer—MediaServer • VoiceMailGateway—VoiceMailGateway • PhoneAccessSwitch—SWITCH or ROUTER • VoiceGateway—SWITCH, ROUTER, or VG248 • Gatekeeper—ROUTER, SWITCH • Router—ROUTER • Switch—SWITCH <p>Note When using the <i>equals</i> operator in the rule, enter the values exactly as indicated.</p>
ClassName	<p>In the Value field of the Rules: Create page, use the following corresponding values:</p> <ul style="list-style-type: none"> • VoiceGateway—VoiceGateway • MediaServer—MediaServer • VoiceMailGateway—VoiceMailGateway
Interfaces	<p>In the Value field of the Rules: Create page, use the following corresponding values:</p> <ul style="list-style-type: none"> • LAPD • DS1 • FXS/FXO • FXS/FXO,DS1

Examples of Rules

Example 1

You want to create a group that contains all of the media servers in the vegas cluster. Form the following rule:

```
:MediaServer.Cisco_CommunicationManager_or_Cluster.Name contains "VEGAS"
```

- Object Type—MediaServer
- Variable—Cisco_CommunicationManager_or_Cluster.Name

- Operator—contains
- Value—“VEGAS”

Example 2

You want to create a group that contains all of the voice gateways that have 172 as part of their IP address.

```
:VoiceGateway.IP.Address contains "172"
```

- Object Type—VoiceGateway
- Variable—IP.Address
- Operator—contains
- Value—“172”

Example 3

You want to create a group that contains all of the phone access switches in the San Jose location.

```
:PhoneAccessSwitch.Location equals "San Jose"
```

- Object Type—PhoneAccessSwitch
- Variable—Location
- Operator—equals
- Value—“San Jose”

**Note**

To help you to better understand group rules, you may want to look at the rules used for system-defined groups. These rules appear in the Properties: Details page. For a description of the Properties: Details page, see [Viewing Group Details, page 17-29](#).

Finalizing Group Membership

After the group rules have been defined, they are evaluated, and you can view the group's members. In addition, the group membership can be modified by adding or removing specific Unified Communications s. The group rule will be automatically modified to reflect the Unified Communications s that were added or removed from the group. You add or remove specific Unified Communications s from a group's membership in the Membership: Create page of the Create Group Wizard.

**Note**

If you used a template to create your group, you can only view membership details. You cannot add or remove Unified Communications s from a group's membership in the Membership: Create page.

Viewing the Group Summary

The final step in the Create Group Wizard is a summary page that displays the new group's definition. [Figure 17-7](#) shows an example of the Summary: Create page.

Figure 17-7 Summary: Create Page

Summary: Create	
Group Name:	Test
Parent Group:	/OM@item-daily/User Defined Groups
Description:	
Membership Update:	Automatic
Rules:	<pre> INCLUDELIST { # /CS@item-daily/System Defined Groups/Unknown Device Type Group\$/CS@item-daily/System Defined Groups/Unknown Device Type>, # /CS@item-daily/System Defined Groups/Switches and Hubs Group\$/CS@item-daily/System Defined Groups/Switches and Hubs>, # /CS@item-daily/System Defined Groups/Routers Group\$/CS@item-daily/System Defined Groups/Routers> } </pre>
Visibility Scope:	Public

Table 17-7 describes the fields on the Summary: Create page of the Group Creation Wizard.

Table 17-7 Fields on the Group Summary Page

Heading/Button	Description
Group Name	Name of the group you are creating.
Parent Group	The parent group of the group you are creating.
Description	A text description of the group.
Membership Update	How group membership is updated. Membership updates can be automatic (updated every time the group is accessed) or can be upon user request only (updated only when you click the Refresh button).
Rules	The rules used to filter group membership.
Visibility Scope	Setting that determines whether all users or only the created user can view the group.

Viewing Group Details

A group's information is displayed on the Properties: Details page.

-
- Step 1** Select **Devices > Device Groups**. The Group Administration and Configuration page appears.
 - Step 2** In the Group Selector, select the group for which you want to view details.
 - Step 3** Click **Details**. The Properties: Details page appears (see [Figure 17-8](#)).
-

Figure 17-8 Properties: Details Page

Properties: Details	
Group Name:	CallManagers
Parent Group:	/OM@item-daily/System Defined Groups/Cisco IP Telephony Applications
Type:	MediaServer
Description:	Media servers running Cisco CallManager software.
Membership Update:	Automatic
Created By:	System : Wed 09-Nov-2005 13:18:25 PST
Last Modified By:	System : Wed 09-Nov-2005 13:18:25 PST
Rules:	MediaServer.CiscoCallManager.ClassName equals "CiscoCallManager"
Visibility Scope:	Public
<input type="button" value="View Parent Rules"/> <input type="button" value="Membership Details"/> <input type="button" value="Cancel"/>	

Table 17-8 describes the fields on the Properties: Details page.

Table 17-8 Fields on the Properties: Details Page

Heading/Button	Description
Group Name	Name of the group you are viewing.
Parent Group	The parent group of the group you are viewing.
Type	The type of the Unified Communications s that belong to the group.
Description	A text description of the group.
Membership Update	How group membership is updated. Membership updates can be automatic (updated every time the group is accessed) or can be upon user request only (updated only when you click the Refresh button).
Created By	The person who created the group.
Last Modified By	The last person to edit the group.
Rules	The rules used to filter group membership.
Visibility Scope	Setting that determines whether all users or only the created user can view the group.
View Parent Rules	Used to view the parent group rules. Note All parent group rules apply to the subgroups.
Membership Details	Used to view membership details. See Viewing Membership Details, page 17-30 .
Cancel	Closes the page and takes you back to the Group Administration and Configuration page.

Viewing Membership Details

You can view a list of the Unified Communications s that belong to a group by accessing the Membership: Details page.

- Step 1** Select **Devices > Device Groups**. The Group Administration and Configuration page appears.
- Step 2** In the Group Selector, select the group for which you want to view details.
- Step 3** Click **Details**. The Properties: Details page appears.
- Step 4** Click **Membership Details**. The Membership: Details page appears.

Figure 17-9 shows an example of the Membership: Details page.

Figure 17-9 Membership: Details Page

Membership: Details	
Group Name: 78XX Media Servers	
Showing 1-1 of 1 records	
Name	Object Type
1.1-skate-7845h.cisco.com	MediaServer
Rows per page: 10	Go to page: 1 of 1 Pages Go
Property Details Cancel	

Table 17-9 describes the fields on the Membership: Details page.

Table 17-9 Fields on the Membership: Details Page

Heading/Button	Description
Name	Name of the device for which you want to view membership details.
Object Type	The type of object for which you want to view details.
Property Details	Takes you back to the Properties: Details page.
Cancel	Closes the page and takes you back to the Group Administration and Configuration page.

Refreshing Membership

Refreshing a group's membership forces the group to recompute its membership by reevaluating its rules and obtaining membership information from the data collectors. Port and interface group membership listings are not supported, because these groups are only used for polling and threshold purposes.

- Step 1** Select **Devices > Device Groups**. The Group Administration and Configuration page appears.
- Step 2** In the Group Selector, select the group you want to refresh.
- Step 3** Click **Refresh**.
- Step 4** In the confirmation dialog box, click **Yes**. In the next dialog box, click **OK**.

Deleting Groups

You can only delete user-defined groups. This includes any Access Port, Interface, or Trunk Port groups that you created. You cannot delete the Access Port Groups, Interface Groups, or Trunk Port Groups folders.

-
- Step 1** Select **Devices > Device Groups**. The Group Administration and Configuration page appears.
 - Step 2** In the Group Selector, select the group you want to delete.
 - Step 3** Click **Delete**.
 - Step 4** In the confirmation dialog box, click **Yes**. In the next dialog box, click **OK**.
-

**Note**

Edit, Refresh, and Delete cause internal processes to start. For this reason, Operations Manager could experience a period of high CPU utilization after these processes are triggered.
