



Controlling Device Access and Authorization Using Device Scopes

These topics describe how to create and manage device scopes. Device scopes determine the devices a user can access, and the actions the user can perform on the devices. The same device scope can be applied to multiple user accounts, but you can specify more or less strict privileges on a per-user basis.



Note

If Prime Network is installed with Cisco Prime Central, you can also cross-launch the Prime Network application (From the **Prime Central** menu, choose **Administration > Scope Management > Prime Network**) to create and manage device scopes. For more information, refer the [Cisco Prime Central User Guide](#).

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What Are Device Scopes?



Note

If Prime Network is installed with Cisco Prime Central, you can also cross-launch the Prime Network application (From the **Prime Central** menu, choose **Administration > Scope Management > Prime Network**) to create and manage device scopes. For more information, refer the [Cisco Prime Central User Guide](#).

In Prime Network, *user roles* and *device scopes* determine which tasks a user can perform. A user role is specified when you create the user's account. The user role determines the *GUI*-based actions the user can perform.

The actions a user can perform on a *device* are controlled by device scopes. Device scopes are groups of devices that you assign to users. If a device is in a scope that is assigned to a user, then the user can access the device. Device scopes are listed in the Administration GUI client when you choose **Scopes** in the navigation tree.

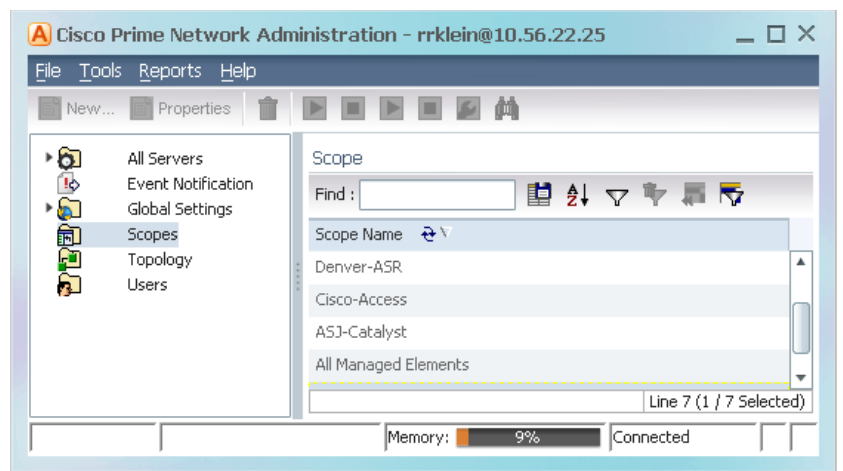
This topic does not address authentication—that is, the process of verifying the identity of the user. For information on user authentication, see [User Authentication, page 7-2](#).

When you create a new device scope, you specify a name for the scope and which devices to include in the scope (as many or as few as you want). This allows you to group devices in a way that fits your deployment—for example, by geography, by device type, by customer, and so forth. However, just because a user has access to a device does not mean they can perform all actions on the device. When you assign a device scope to a user, you also specify the *security level* for that scope. In this way, you control the devices a user can access, and what actions the user can perform on those devices.

Creating scopes and assigning them to users is controlled from the Administration GUI client. If you create an account for a user but do not assign any device scopes to the account, the user will be able to open Prime Network but will not see any devices.

[Figure 6-1](#) shows an example of the Prime Network Administration Scopes window.

Figure 6-1 Scopes Window



Severity levels for device scopes can override GUI user access roles. For example:

1. John's user access role (for GUI operations) is Operator.
2. John's security level for the device scope CE-SJ is Configurator.

Prime Network will allow John to perform Configurator operations on any devices in the CE-SJ device scope.

The All Managed Elements Device Scope

The All Managed Elements device scope is a predefined scope that is automatically assigned to users with Administrator privileges. It contains all NEs that are managed by Prime Network and has a security level named Special. The Special security level only applies to this device scope, and only when the scope is assigned to Administrators.

New devices are automatically added to the All Managed Elements device scope when the VNEs are created.



Note You can edit the scope to have less privileges, or even delete it completely, but this is not recommended. It would result in Administrators only having access to GUI functions that do not affect devices.

You are permitted to assign the All Managed Elements device scope to non-Administrators.

[Table 6-1](#) lists the device-based actions a user can perform, based on the device scope security level.



Note Users with higher user roles can perform all the actions for which lower roles are authorized. For example, the Configurator is authorized to perform all the actions that the Viewer, Operator, and OperatorPlus can perform.

Table 6-1 Comparison of Permitted Actions for Device Scope and GUI Client Based on Security Level/User Role

Security Level/ User Role	Device Based (Scope) Actions Permitted to Users with This Role	GUI Client Actions Permitted to Users with This Role
Administrator	All actions.	All actions.
Configurator	Activation services: Create command scripts for managed NE (regardless of whether the NE is inside or outside the Configurator's scope).	Maps: Create maps. Advanced tools: Ping and Telnet an NE directly from the GUI client; enable and disable port alarms; create command scripts using Command Manager. and Command Builder, run transactions using Transaction Manager
OperatorPlus	Maps: Create business tags for NEs. Network information: Display include path tool traffic, rates, drops, or any dynamic data.	Maps: Create new maps and add NEs; edit, delete, rename, and save maps; create and break aggregations; change map layout and set background image; create business links.
Operator	Network information: Refresh port information from NE.	Maps: Create and delete business tags for NEs.
Viewer	Network and business tag information: View alarm list and alarm properties, and find alarms; find and view attachments; view NE properties and inventory; calculate and view affected parties; open port utilization graphs.	Application: Log into the Vision GUI client; change their password (local authentication); view the device list and map; view link properties; use table filters and export data from tables.

Creating New Device Scopes To Control Device Access



Note If Prime Network is installed with Cisco Prime Central, you can also cross-launch the Prime Network application (From the **Prime Central** menu, choose **Administration > Scope Management > Prime Network**) to create and manage device scopes. For more information, refer the [Cisco Prime Central User Guide](#).

Before you create a scope, consider the following:

- Which devices a user (or group of users) should be allowed to access

- The security level (user access role) that should be applied to the devices in the scope. (Remember security levels can override user access roles. For example, if a user has an Operator access role and a Configurator scope security level, the user will be allowed to perform Configurator-level operations on the devices in the scope.)

When you create a device scope, you must give it a name and choose the devices to include in the scope. When you assign a scope to a user, you adjust the security level to be more or less strict.



Note By default, users can only view links if both endpoints are in this scope. If you want to change this setting so that only one link endpoint is required, see [Displaying Links Based On Whether Endpoints Are In User's Scope, page 6-4](#).

To create a scope:

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- Step 1** Right-click **Scopes** and choose **New Scope** to open the New Scope dialog box.
 - Step 2** In the Scope field, enter a name for the scope.
 - Step 3** Add devices to the scope by selecting them from the Available Devices list and moving them to the Selected Devices list.
 - Step 4** Click **OK**. The scope is saved and is displayed in the content area.
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Displaying Links Based On Whether Endpoints Are In User's Scope



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By default, a user can view a link in Prime Network Vision only if *both* link endpoints are in the user's device scope. If you want link to be viewable if only *one* endpoint is in a user's scope, you must edit the registry as follows. Changes are applied to all device scopes in the system.

To change the settings that control whether these links are displayed, choose **Tools > Registry Controller > Link Display** from the main menu of the Administration GUI client.



Note You must restart the gateway to apply your changes. See [Stopping and Restarting Prime Network Components, page 3-17](#)

Moving Devices In and Out of a Scope


Note

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To make this device scope change...	Do the following:
Change the device membership	Follow the procedure in this topic.
Change the name	Create a new scope. You cannot change an existing scope's name.
Change the security level	Edit the security level in the user's account. See Changing a User's Device Scope Security Level, page 6-6


Caution

Changes you make to an existing device scope are applied to *all* users with access to the scope.

To add or remove devices from a scope:

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- Step 1** Select **Scopes** to populate the list of existing scopes.
 - Step 2** Right-click a scope and choose **Properties**.
 - Step 3** Modify the scope device list by selecting them from the Available Devices list and moving them to the Selected Devices list.


Note

You can select multiple devices by using the Ctrl key.

- Step 4** Click **OK**. The scope is updated and is displayed in the content area.
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Changing a User's Device Scope Security Level



Note

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This procedure explains how to change the security level for a device scope. This is done from the user accounts dialog box. When you change the security level, it only affects this user. (Scopes do not have a default security level; the security level is set when the scope is added to a user account.)

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- Step 1** Select **Users** to populate the list of existing user accounts.
 - Step 2** Double-click a user. The **Properties** dialog box appears.
 - Step 3** Click the **Authorization** tab.
 - Step 4** In the Device Security area, highlight the scope you want to edit and click **Edit**.
 - Step 5** In the Edit Scope dialog box, make sure the correct scope is highlighted, and click the new security level.
 - Step 6** Click **OK** and **Apply**.
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Deleting a Device Scope from Prime Network



Note

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Caution

When you delete a scope using this procedure, the scope is removed from all user accounts it was assigned to.

To delete a scope:

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- Step 1** Select **Scopes** in the navigation pane.
 - Step 2** Right-click the scope you want to remove, then choose **Delete**.



Note You can select multiple scopes by using the Ctrl key.

The scope is deleted and is removed from the content area.

Tracking Device Scope-Related Events

The following table provides ways you can get historical information on device scope-related events. You can tailor your search or reports by specifying keywords (such as *scope*).

For historical events related to:	See:
Device scopes that were created, edited, or deleted	Security events report, which you can launch from the main menu by choosing Reports > Run Report > Events Reports > Detailed Non-Network Events > Detailed Security Events

