Managing Global Settings

About this chapter:

This chapter describes how to define and manage the Cisco ANA Manage global settings, including, client licenses, polling groups, protection groups and customizing a message of the day (service disclaimer).

Managing Client Licenses, describes how to install and uninstall a client license. In addition, it describes viewing client license properties.

Viewing DB Segments, describes how to view the database segments table.

Customizing a Message of the Day, describes how to customize a message of the day (service disclaimer).

Managing Polling Groups, describes how to customize and modify polling groups using Cisco ANA Manage. In addition, it describes how to view polling group properties.

Managing Protection Groups, briefly describes changing the default setup of Cisco ANA Units by customizing protection groups (clusters) and then assigning Cisco ANA Units to these groups.

For more information about the *Global Settings* branch, see the Global Settings Branch section.

Note The *Global Settings* branch can be expanded to view the required sub-branch in the *Tree* pane.

Managing Client Licenses

Cisco ANA Client applications and BQL connectivity is based on installed license files. Cisco ANA Manage enables the administrator to control and monitor the number of Cisco ANA Client and BQL connections over a limited or unlimited period of time based on the client licenses installed. Two types of licenses are supported, namely, fixed (the number of installed users are identified by user names or IP addresses or both) or floating (the number of installed users operating concurrently).

For more information on the *Client Licenses* sub-branch, see the Client Licenses section.

To install a license:

Step 1 Select the *Client Licenses* sub-branch in the Cisco ANA Manage window's *Tree* pane. The *Client Licenses* table is displayed.

Step 2 Right-click the *Client Licenses* sub-branch to display the shortcut menu and select **New License**, or from the *File* menu select **New License** or in the toolbar click **New License**. The New Client License dialog box is displayed.

Step 3 Copy the key from the file provided to you by Cisco Systems.

Step 4 Paste the information in the New Client License dialog box.

Step 5 Click **OK**. The new license information is displayed in the *Workspace*.

The administrator can uninstall the client license, for example, if it has expired.

Note The default license cannot be deleted.

To uninstall a license:

Step 1 Select the *Client Licenses* sub-branch in the Cisco ANA Manage window's *Tree* pane. The *Client Licenses* sub-branch is displayed.

Step 2 Select the license that you want to uninstall in the *Workspace* pane.

Step 3 Right-click the license line in the table to display the shortcut menu and select **Delete**, or click **Delete** in the toolbar. The license is uninstalled and is no longer displayed in the *Workspace* of the Cisco ANA Manage window.

Viewing Client License Properties

Cisco ANA Manage enables the user to view the properties of a license, for example, the IP address and account name.

To view client license properties:

Step 1 Select the *Client Licenses* sub-branch in the Cisco ANA Manage window's *Tree* pane. The *Client Licenses* table is displayed.

Step 2 Select the required license in the table.

Step 3 Right-click to display the shortcut menu and select **Properties**, or from the *File* menu select **Properties** or in the toolbar click **Properties**. The Client License Properties dialog box is displayed.

The following fields are displayed at the top of the Client License Properties dialog box:

- **License Type—**The license type, namely:
- **Fixed—**The number of installed users are identified by user names or IP addresses or both. For example, 5 users with the user names a, b, c, d and e.

  or
- **Floating—**The number of installed users operating concurrently (unspecified). For example, 5 users.
- **Client Type—**The applications to which the user is authorized to connect, namely, BQL and/or Cisco ANA Client applications.
- **User Count—**The number of users allowed to operate the Cisco ANA Client applications, as defined in terms of the license. The exact number of users is displayed if the number is limited or 0 indicates an unlimited number of users.

- **Creation Date—**The date when the license was implemented.

When the properties of the license are displayed in the *Workspace* table then the properties of the allocated users are displayed as follows:

- **IP—**Where the license is location based, (namely, limited to a specific seat), this is the IP address from which logins will be allowed for this license.
- **BQL Enabled—**Indicates whether the license includes BQL connections or just the Client applications.
- **Account Name—**The username used to login.

Step 4 Click to close the Client License Properties dialog box.

Viewing DB Segments

Cisco ANA Manage enables the administrator to view and monitor the following:

- Database segments' storage allocation information
- Database disk usage
- Database growth

The information is automatically checked by the system.

To view the DB Segments:

Step 1 Select the *DB Segments* branch in the Cisco ANA Manage window's *Tree* pane. The DB Segments are displayed in the *Workspace*.

For more information about the columns displayed in the DB Segments table, see the DB Segments Branch section.

Customizing a Message of the Day

Cisco ANA Manage enables the user to define a message (service disclaimer) that is displayed when the user logs in to any Cisco Client application (optional). The user must accept the message before logging in. If the user does not accept the message the user will be unable to login. The message supports HTML format.

The message can be changed, as required; however, only one message is applied at any given point in time.

To customize a message of the day:

Step 1 Select the *Message of the Day* branch in the Cisco ANA Manage window's *Tree* pane. The Title and Message fields are displayed in the *Workspace*.

Step 2 Enter a **Title** for the message.

Step 3 Enter a **Message**.

Note **Abort** and **Continue** buttons are displayed in the message dialog box by default, so the message must be related to these actions. For example, "Do you accept the terms of use in the Product License Agreement? Click **Continue** to proceed or click **Abort** to cancel."

Step 4 Click **Save**. A confirmation message is displayed.

Step 5 Click **OK**. The message is displayed when the user logs in to any Cisco Client application.

To remove a message of the day:

Step 1 Select the *Message of the Day* sub-branch in the Cisco ANA Manage window's *Tree* pane.

Step 2 In the *Workspace*, select the text in the **Message** area and press **Delete** on your keyboard.

Step 3 Click **Save**. A confirmation message is displayed.

Step 4 Click **OK**. The message is no longer displayed when the user logs in to the Cisco Client applications.

Managing Polling Groups

This section includes the following:

Polling Groups Overview, provides general information about polling groups.

Customizing a Polling Group, describes how to customize new polling groups using Cisco ANA Manage.

Modifying a Polling Group, describes how to modify existing polling groups using Cisco ANA Manage and view polling group properties.

Deleting a Polling Group, describes how to delete polling groups.

Adaptive Polling, describes adaptive polling for VNEs.

Polling Groups Overview

The Cisco ANA Unit servers poll the NEs to discover and display accurate and up-to-date information of the network. The system periodically triggers polling at set intervals. The polling rates can be customized or optimized by the administrator.

Cisco ANA provides the ability to fine-tune the frequency in which information is retrieved from the managed elements in order to enable a high degree of control and flexibility over the amount of network traffic used by the various VNEs. Different polling intervals can be set for gathering the information for:

- **Status**. Sets the polling rate for status-related information, such as device status (up/down), port status, admin status and so on. The information is related to the operational and administrative status of the NE.
- **Configuration**. Sets the polling rate for configuration-related information, such as VC tables, scrambling and so on.

- **System**. Sets the polling rate for system-related information, such as device name, device location and so on.
- **Topology Layer 1 Counters**. Sets the polling rate of the topology process as an interval for the Layer 1 counter. This is an ongoing process.
- **Topology Layer 2 Counters**. Sets the polling rate of the topology process as an interval for the Layer 2 counter. This process is available on demand.

Note All polling rates are expressed in seconds.

In addition to the defined polling intervals, the VNEs implement adaptive polling ensuring that the element is not overloaded. Checking the device CPU, may defer specific polls in order to avoid an additional load on the managed element. For more information about adaptive polling, see the Adaptive Polling section.

The user can define polling profiles by setting customized polling intervals, which can be applied to managed elements. The VNE then polls the network element according to the preset values. This ensures polling of devices for different information consistently and in accordance with technical and business requirements.

Core devices can be assigned to a polling group (namely, all devices use the same polling profile) that specifies a higher frequency for status but a lower frequency for configuration-related information while edge or access devices can be polled more frequently for system and configuration-related information. Managed Network Service operators for example, can use polling groups to reflect their agreement with customers so that premium customer devices are polled more frequently than normal devices.

Cisco ANA includes the pre-configured polling group “default” for the administrator’s convenience, which cannot be deleted. The default polling group includes the following settings:

- Status polling rate is 60 seconds.
- Configuration polling rate is 360 seconds.
- System polling rate is 900 seconds.
- Layer 1 polling rate is 60 seconds.
- Layer 2 polling rate is 60 seconds.

Customizing a Polling Group

Cisco ANA Manage enables the user to create and customize new polling groups. The new polling groups that are created can then be used when defining a VNE. For more information, see the Defining VNEs section.

Note **Warning**—Changing the polling rates may result in excess traffic and Network Element crashes.

To create and customize a polling group:

Step 1 Select the *Global Settings* branch in the Cisco ANA Manage window’s *Tree* pane. The *Global Settings* branch is displayed.

Step 2 Expand the *Global Settings* branch and select the required sub-branch in the *Tree* pane.

Step 3 Select the *Polling Groups* sub-branch in the Cisco ANA Manage window's *Tree* pane. The *Polling Groups* table is displayed in the *Workspace*.

Step 4 Right-click to display the shortcut menu and select **New Polling Group** or from the *File* menu select **New Polling Group** or in the toolbar click **New**.

The New Polling Group dialog box is displayed.

The following fields are displayed at the top of the New Polling Group dialog box:

- **Name—**The polling group name defined by the user.
- **Description—**A description of the polling group.

Step 5 Type the name and description of the polling group in the appropriate fields.

The following fields are displayed in the **Polling Intervals** area:

- **Status—**Sets the polling rate for status-related information, such as device status (up/down), port status, admin status and so on. The information is related to the operational and administrative status of the Network Element.
- **Configuration—**Sets the polling rate for configuration-related information, such as VC tables, scrambling and so on.
- **System—**Sets the polling rate for system-related information, such as device name, device location and so on.

The following fields are displayed in the **Topology** area:

- **Layer 1—**Sets the polling rate of the topology process as an interval for the Layer 1 counter. This is an ongoing process.
- **Layer 2—**Sets the polling rate of the topology process as an interval for the Layer 2 counter. This is process is available on demand.

Step 6 Define the new polling groups' properties.

Step 7 Click **OK**. The new polling group is displayed in the *Workspace*.

The new polling group can be used when defining a new VNE. For more information, see the Defining VNEs section.

Modifying a Polling Group

Cisco ANA Manage enables the user to modify a polling group and view polling group properties.

To modify a polling group:

Step 1 Select the *Polling Groups* sub-branch in the Cisco ANA Manage window's *Tree* pane. The *Polling Groups* table is displayed in the *Workspace*.

Step 2 Right-click the required polling group in the *Workspace* to display the shortcut menu, and select **Properties** or, from the *File* menu select **Properties** or in the toolbar click **Properties**. The Update Polling Group dialog box is displayed.

For more information on the fields displayed in the Update Polling Group dialog box, see the Customizing a Polling Group section.

Step 3 Edit the properties of the polling group as required.

Note If any VNE is using this polling group then a warning message is displayed.

Step 4 Click **Apply**.

Step 5 Click **OK.** The polling group's settings are modified accordingly.

Note Modifying the polling group settings affects all of the VNEs and devices using the selected polling group.

Deleting a Polling Group

Cisco ANA Manage enables the user to delete polling groups.

To delete a polling group:

Step 1 Select the *Global Settings* branch in the Cisco ANA Manage window's *Tree* pane and choose the *Polling Groups* sub-branch. The Polling Groups are displayed in *Polling Groups* table in the *Workspace*.

Step 2 Right-click on the required polling group in the *Polling Group* table in the *Workspace* to display the shortcut menu, and select **Delete**. A warning message is displayed.

Step 3 Click **Yes**. A confirmation message is displayed.

Step 4 Click **OK**. The polling group is deleted from the *Polling Group* table.

Note You cannot delete a Polling Group being used by another VNE.

Adaptive Polling

VNEs implement adaptive polling ensuring that the element is not overloaded in addition to defined polling intervals. Checking the device CPU usage, may defer specific polls in order to avoid an additional load on the managed element.

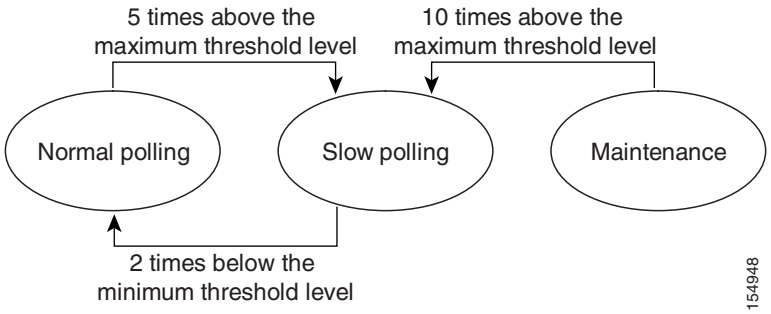
When a VNE exceeds the maximum CPU usage threshold value an alarm is sent and the VNE is automatically transferred to a slow polling interval, namely, the VNE is polled less regularly (a delay is added between the commands).

When the CPU usage threshold values for the VNE fall below the clear threshold value then an alarm is sent and the VNE returns to normal polling.

The values for any VNE can be customized through the system registry, for example, the minimum and maximum CPU usage threshold values. When the defined values are reached an alarm is sent. A clear value can also be defined so that when the CPU usage threshold value drops below the maximum value or rises above the minimum value a message is sent clearing the original alarm. These values are defined in the Registry.

In addition, the maximum and minimum tolerance levels can be customized through the system registry. When a VNE is using normal polling and CPU usage is high, Cisco ANA waits for the maximum CPU usage threshold value (upper tolerance level) to be exceeded five times (default) and only then does the VNE move to slow polling, as shown in the diagram below.

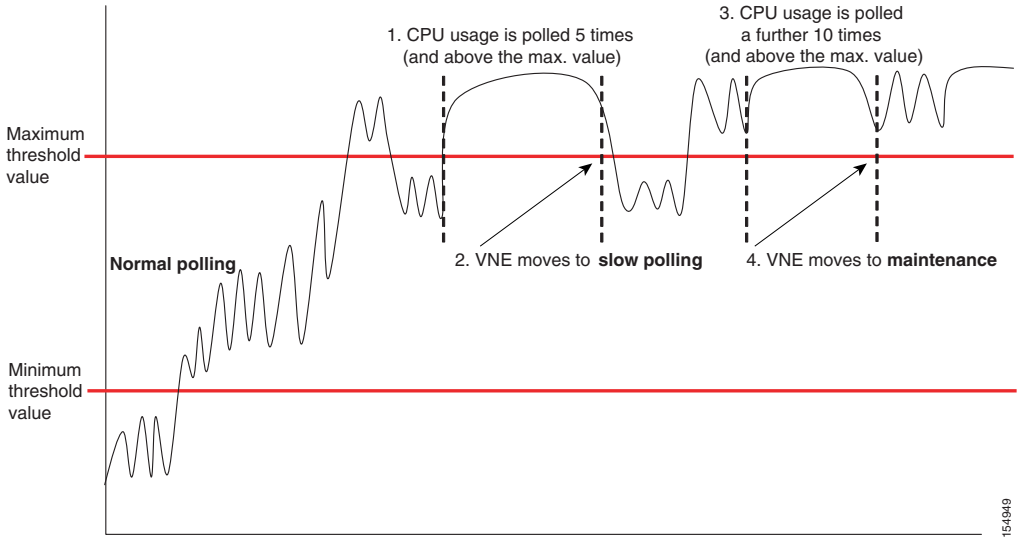
Figure 7-1 Polling Threshold Levels



If the VNE is using slow polling after it has been checked five times, then the VNE is checked a further 10 times (default) to see whether the CPU usage is still high. If this is the case, the VNE is moved to maintenance mode. Once the VNE is in maintenance mode the user must manually set the VNE back to normal polling, (it does not automatically return to regular polling). Once the VNE is in maintenance mode the device is not polled.

In the example below CPU usage is polled five times and it is above the maximum value, so the VNE moves to slow polling. The CPU usage is the polled a further 10 times and it is above the maximum value, so the VNE moves to maintenance mode.

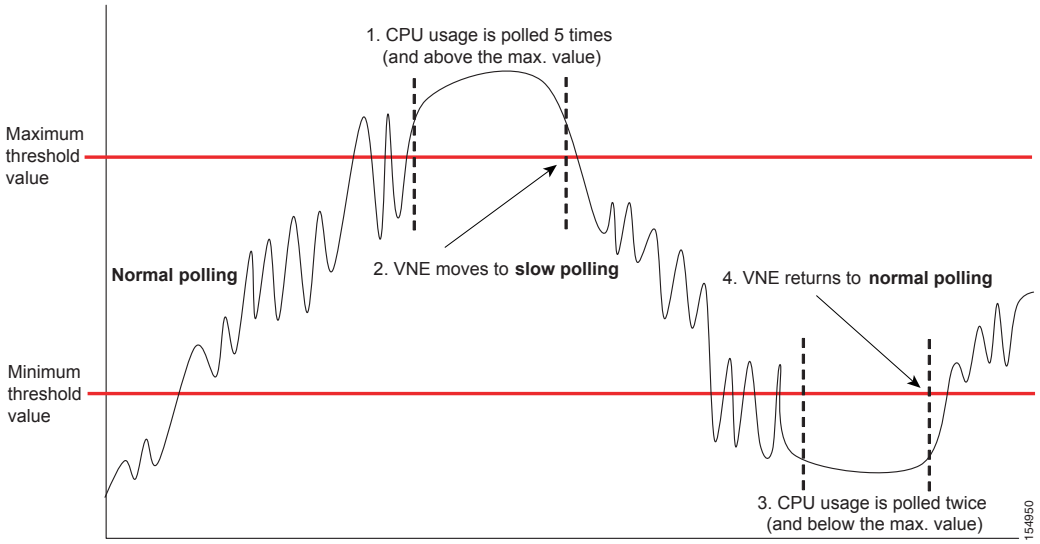
Figure 7-2 Example 1 CPU Usage



When the VNE is using slow polling and CPU usage drops to a regular level (or below the minimum value), Cisco ANA waits for the VNE to drop below the maximum CPU usage threshold value twice (default) and only then does the VNE return to normal polling.

In the example below CPU usage is polled five times and it is above the maximum value, so the VNE moves to slow polling. The CPU usage then drops to a regular level (or below the minimum value). The CPU usage is the polled again twice and it is below the maximum value, so the VNE returns to normal polling.

Figure 7-3 Example 2 CPU Usage



If CPU usage is high and a slow polling interval is used and the AVM goes down and is then restarted the AVM remembers its previous polling interval and when the AVM is restarted the AVM will make use of the same polling interval that it was using before it went down.

Managing Protection Groups

By default all the Cisco ANA Units in the Cisco ANA Fabric belong to one big cluster, namely, the **default-pg** protection group. The administrator can change the default setup of the Cisco ANA Units by customizing protection groups (clusters) and then assigning Cisco ANA Units to these groups.

For more information, refer to the *Cisco Active Network Abstraction High Availability User's Guide*.

Cisco ANA Manage enables the user to create new protection groups. The new protection groups that are created can then be used when defining a Cisco ANA Unit. For more information, see the Adding New Cisco ANA Units section.

To create a protection group:

Step 1 Select the *Global Settings* branch in the Cisco ANA Manage window's *Tree* pane. The *Global Settings* branch is displayed.

Step 2 Expand the *Global Settings* branch and select the required sub-branch in the *Tree* pane.

Step 3 Select the *Protection Groups* sub-branch in the Cisco ANA Manage window's *Tree* pane. The *Protection Groups* table is displayed in the *Workspace*.

Step 4 Right-click the *Protection Groups* sub-branch, and select **New Protection Group** from the shortcut menu, or from the *File* menu select **New Protection Group** or in the toolbar, click **New**.

The New Protection Group dialog box is displayed.

The following fields are displayed at the top of the New Protection Group dialog box:

- **Name—**The protection group name defined by the user.
- **Description—**A description of the protection group.

Step 5 Type the name and description of the protection group in the appropriate fields and click **OK**. The *Workspace* displays details of the new Protection Group and all of the currently defined protection groups in the *Protection Groups* table.

Note The **default-pg** protection group displayed in the *Workspace* is the default protection group (cluster), to which, by default, all the Cisco ANA Units in the Cisco ANA Fabric belong.

Checking Assignment of Protection Groups to Cisco ANA Units

The administrator can view the protection groups to which the Cisco ANA Units are currently assigned. In so doing, the administrator can, at a glance, check that the configuration or assignment matches the initial deployment plan.

To check the Cisco ANA Units-protection groups assignments:

Step 1 Select the *ANA Servers* branch in the Cisco ANA Manage window's *Tree* pane. The properties of the *ANA Servers* branch are displayed in the *Workspace*, including the details of the protection group to which each Cisco ANA Unit and standby Cisco ANA Unit currently belongs.

Changing Protection Groups for Cisco ANA Units

The administrator can easily and quickly change the protection group to which a Cisco ANA Unit has been assigned.

To change the protection group setting of a Cisco ANA Unit:

Step 1 Select the *ANA Servers* branch in the Cisco ANA Manage window's *Tree* pane. The *ANA Servers* branch is displayed.

Step 2 Expand the *ANA Servers* branch and select the required *ANA Unit* sub-branch.

Step 3 Right-click on the required Cisco ANA Unit to display the shortcut menu and select **Properties**,

or

In the toolbar click **Properties**,

or

From the *File* menu select **Properties**. The ANA Unit Properties dialog box is displayed.

The **Protection Group** dropdown list displays the currently customized protection groups. For more information about defining a new protection group, see the Managing Protection Groups section.

The **Enable Unit Protection** checkbox enables the administrator to define whether a Cisco ANA Unit is enabled (checkbox is selected) for high availability.

Note It is recommended that the user does not disable this option.

Step 4 Select the protection group from the **Protection Group** dropdown list to which you want to assign the Cisco ANA Unit.

Step 5 Click **OK** to save the updated protection group settings for the selected Cisco ANA Unit. The Cisco ANA Manage window is displayed.

Viewing and Editing Protection Group Properties

The administrator can view the properties of a protection group, for example, the description. In addition, the administrator can edit the description of the protection group.

To view and edit a protection group's properties:

Step 1 Select the *Global Settings* branch in the Cisco ANA Manage window's *Tree* pane. The *Global Settings* branch is displayed.

Step 2 Expand the *Global Settings* branch and select the *Protection Groups* sub-branch.

Step 3 Select the required protection group in the Cisco ANA Manage window's *Workspace*.

Step 4 Right-click to display the shortcut menu and select **Properties**,

or

In the toolbar click **Properties**,

or

From the *File* menu select **Properties**.

The Properties dialog box is displayed.

Step 5 View the properties of the protection group and/or edit the description.

Step 6 Click **OK**. The Cisco ANA Manage window is displayed.

Deleting a Protection Group

Cisco ANA Manage enables the user to delete protection groups.

Note Check that you are deleting the correct protection group, as there may be a Cisco ANA Unit using the protection group.

To delete a protection:

Step 1 Select the *Global Settings* branch in the Cisco ANA Manage window's *Tree pane*. The *Global Settings* branch is displayed.

Step 2 Expand the *Global Settings* branch and select the *Protection Groups* sub-branch.

Step 3 Select the required protection group in the Cisco ANA Manage window's *Workspace*.

Step 4 Right-click to display the shortcut menu and select **Delete**,

or

In the toolbar click **Delete**.

The protection group is deleted.