Overview

Date: 1/26/11

This chapter provides an overview of Cisco Application Networking Manager (ANM), which is a networking management application.

This chapter includes the following sections:

ANM Overview

ANM is a client server application that enables you to perform the following functions:

- Configure, monitor, and troubleshoot the functions of supported data center devices.
- Create policies for operations, applications owners, and server administration staff to activate and suspend network-based services without knowledge of, or ability to, change network configuration or topology.
- Manage the following product types:
  - Cisco Application Control Engine (ACE) module or appliance
  - Cisco Global Site Selector (GSS)
  - Cisco Content Services Switch (CSS)
  - Cisco Catalyst 6500 Virtual Switching System (VSS) 1440
  - Cisco Catalyst 6500 series switch
  - Cisco 7600 series router
  - Cisco Content Switching Module (CSM)
  - Cisco Content Switching Module with SSL (CSM-S)
  - VMware vCenter Server

You can install the ANM server software on a standalone server or on a VMware virtual machine as shown in Figure 1-1. The capabilities and functions of the ANM software are the same regardless of which application you use. This guide uses the following terms to reference the two ANM applications:

- ANM server: Dedicated server with ANM server software and Red Hat Enterprise Linux (RHEL) operating system installed on it. For information about installing this type of ANM application, see the *Installation Guide for the Cisco Application Networking Manager 4.2*.

- ANM Virtual Appliance: VMware virtual appliance with ANM server software and Cisco Application Delivery Engine Operating System (ADE OS) installed on it. Cisco distributes ANM Virtual Appliance in Open Virtual Appliance (.OVA) format. For information about installing this type of ANM application, see the *Installation Guide for the Cisco Application Networking Manager 4.2 Virtual Appliance*.

Figure 1-1   Sample ANM Network Deployment
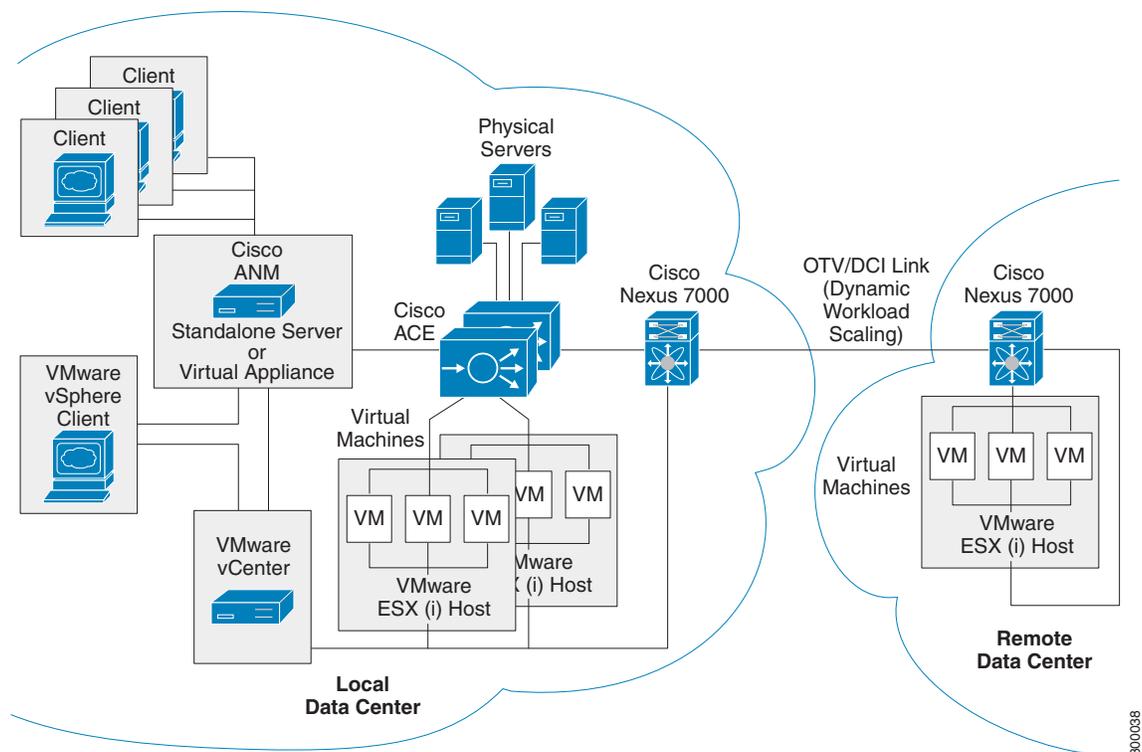
Figure 1-1 shows how ANM and the ACE can be integrated with VMware, allowing you to create and manage server farms for application delivery that consist of real servers that are a combination of physical servers and VMware virtual machines (VMs).

The sample network application also illustrates the following ANM and ACE features:

- Dynamic Workload Scaling—ACE feature that permits on-demand access to remote resources, such as VMs, that you own or lease from an Internet service provider (or cloud service provider). This feature uses Cisco's Nexus 7000 series switches with Cisco's Overlay Transport Virtualization (OTV), which is a Data Center Interconnect (DCI) technology used to create a Layer 2 link over an existing IP network between geographically distributed data centers.

  For more information, see the "Dynamic Workload Scaling Overview" section on page 7-4.

Note   Dynamic Workload Scaling requires ACE module or appliance software version A4(2.0) or later and the Cisco Nexus 7000 series switch.

- ANM plug-in for vCenter Server—Enabling the plug-in on an ANM server or ANM Virtual Appliance permits access to ANM's ACE server load-balancing functions from a VMware vSphere Client. For more information, see Appendix B, "Using the ANM Plug-In With Virtual Data Centers."

Logging In To the Cisco Application Networking Manager

You access ANM features and functions through a web-based interface. The following sections describe logging in, the interface, and terms used in ANM.

The ANM login window allows you to do the following tasks:

- Log into the ANM server
- Change the password for your account (see the "Changing Your Account Password" section on page 1-4)
- Obtain online help by clicking **Help**

Procedure

Step 1   Choose one the following:

- To log in after a new install, which uses the default web ports of 443 and 80, enter **https://**_host_.

Note   You do not have to explicitly enter the default ports 443 and 80.

Caution   If you log in using HTTP, you must change the properties file. See the "Changing ANM Software Configuration Attributes" section on page 18-1 for details. If you enable HTTP, you make your connection to ANM less secure.

- To log in after an upgrade, enter **https://<host>:10443** or **https://<host>:10080**.

Note   You must explicitly enter the nondefault ports 10443 and 10080.

Note   All browsers require that cookies, Javascript/scripting, and popup windows are enabled. If you reinstall a subsequent ANM release, you must delete the cookies and clear the browser cache.

For example, enter **https://192.168.10.10:10443**. The login window appears.

Step 2   In the User Name field, enter **admin**, which is the predefined user account that comes with a new installation.

> ✎
> **Note**   If you are logging in using ACS authentication (TACACS or RADIUS), you *must* add '@<*organization*> to the username on the login page, or you will not be able to log in.

Once you are logged in using this account, you can create additional user accounts. For information on changing account passwords, see the "Modifying User Accounts" section on page 17-51.

Step 3   In the Password field, enter the password that you configured the admin account with when installing ANM.

Step 4   Press **Enter** or click **Login**.

When you log in, the default page that appears is the ANM Homepage (see the "ANM Windows and Menus" section on page 1-7). You can change your default page by making a different selection from the Homepage. See the "Customizing the Default ANM Page" section on page 2-4 for details.

For a description of the user interface, see Figure 1-2 on page 1-6. The interface will not contain data until you add devices by one of the methods described in the "Importing Network Devices into ANM" section on page 4-9.

.

Related Topics

- Changing Your Account Password, page 1-4
- ANM Interface Components, page 1-5

Changing Your Account Password

You can change your account password.

Procedure

Step 1   Using a web browser, navigate to the ANM login window by typing the IP address or hostname where ANM is installed. For example, enter **https://192.168.10.10**. The login window appears.

Step 2   In the User Name field, enter your account username.

Step 3   Click **Change Password**. The Change password configuration window appears.

Step 4   In the User Name field, enter the username of the account that you want to modify.

Step 5   In the Old Password field, enter the current password for this account.

Step 6   In the New Password field, enter the new password for this account.

Password attributes such as minimum and maximum length or accepted characters are defined at the organizational level. For more information on configuring passwords, see the "Configuring User Authentication and Authorization" section on page 17-40.

Step 7   In the Confirm New Password field, reenter the new password for this account.

Step 8   Do one of the following:

- Click **OK** to save your entries and to return to the login window.
- Click **Cancel** to exit this procedure without saving your entries and to return to the login window.

ANM Licenses

An ANM server license, which is available with the software at the time of purchase, must be uploaded to ANM after the installation in order for ANM to work properly. This license allows ANM to manage any number of supported devices and any number of ACE virtual contexts.

The ANM demo license is also available, which allows ANM to perform all the functions associated with the ANM server license; however, the demo license has an expiration date associated with it. You can order a demo license if you do not know the PAK number required to order the ANM server license.

When you install the ANM software, you also install the ANM license using the CLI as described in the *Installation Guide for Cisco Application Networking Manager 4.2* or the *Installation Guide for the Cisco Application Networking Manager 4.2 Virtual Appliance*.

After the initial installation of the ANM software and license, you can use ANM License Manager to check the status of the license or to add a new license, which you would need to do when converting from a demo license to an ANM server license. For more information, see the "Using ANM License Manager to Manage ANM Server or Demo Licenses" section on page 17-79.

ANM Interface Components

This section includes the following topics:

When you log in to ANM, the default window that appears is the Homepage from which you can access the operational and monitoring features of ANM. For details about using Homepage, see the "Information About Hompage" section on page 2-1).

Figure 1-2 shows the Devices window (Config > Devices), which is an example ANM work window where you view the network device tree and perform network management tasks. Table 1-1 describes the numbered fields.
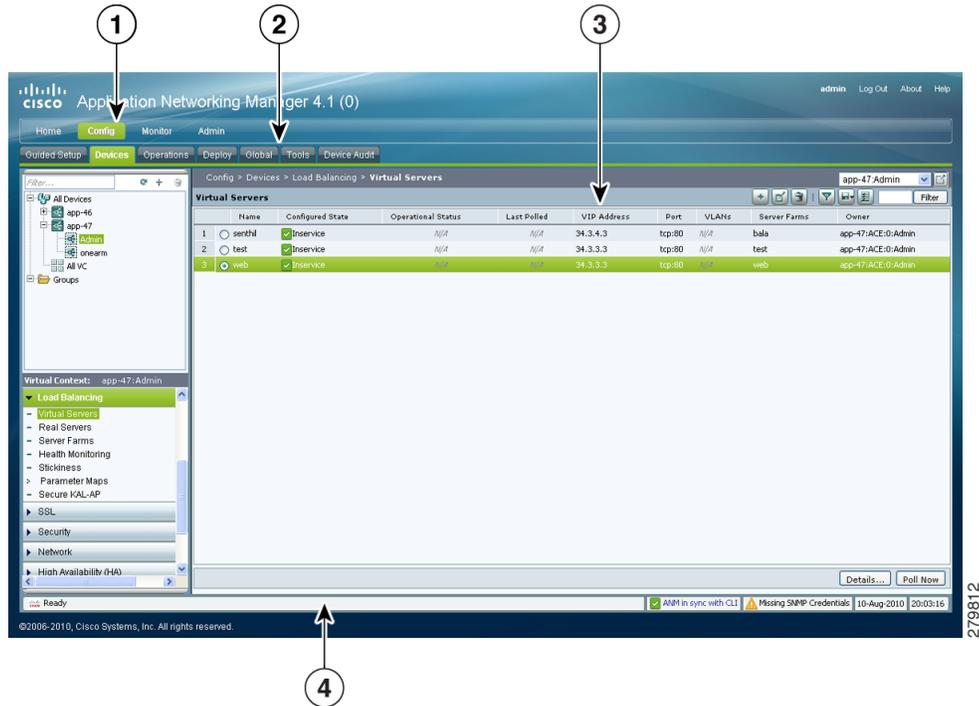
Figure 1-2   ANM Interface Components

Table 1-1   ANM Interface Components Descriptions

Field	Description
1	Navigation pane, which contains the following components: • High-level navigation path within the ANM interface, which includes Config, Monitor, and Admin. You can click an item in the navigation path to view that window. • Logout button. • Help button for providing context-sensitive help and a PDF version of the ANM user guide. • About button that provides ANM version information.
2	Second-level Navigation pane, which contains another level of navigation. Clicking an option in this pane displays the associated window in the content area.
3	Content area, which contains the display and input area of the window. It can include tables, configuration items, buttons, or combinations of these items.
4	Status bar, which indicates the date and time of the ANM server machine. ANM frequently updates the status bar.

Related Topics

- ANM Windows and Menus, page 1-7
- ANM Interface Components, page 1-5
- Using Homepage, page 2-1

ANM Windows and Menus

Figure 1-3 contains many common window elements found in ANM and described in Table 1-2. Not all windows contain all buttons.

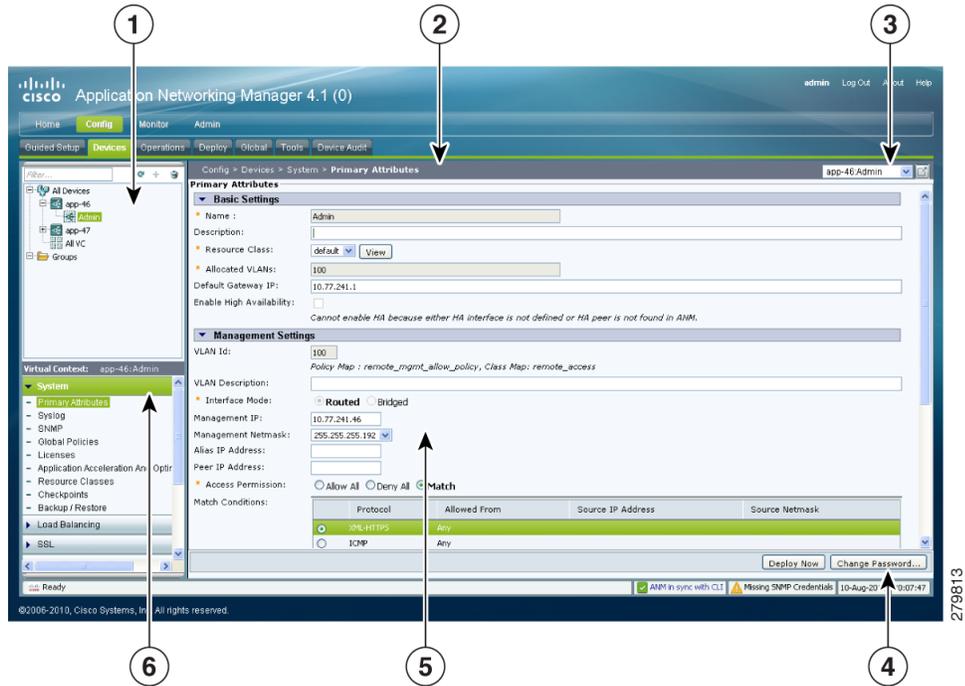*Figure 1-3   Example ANM Window*

Table 1-2   ***Example ANM Window Descriptions***

Number	Description
1	Device tree that appears when you click Config or Monitor. The device tree includes All Devices and Groups: folders • The All Devices folder expands to show the names of imported Cisco devices and their associated modules or virtual contexts. When you click the plus sign (+) in front of a chassis icon, you can see a list of the modules in the chassis. When you expand an ACE appliance or ACE module, you can see the list of existing virtual contexts for that device. For more information about adding devices, see the "Importing Network Devices into ANM" section on page 4-9. • The Groups folder contains the list of user-defined groups. For more information about user-defined groups, see the "Configuring User-Defined Groups" section on page 4-70. The Organization tree displays when you click Admin > Role-Based Access Control. The organization tree includes all organizations in ANM. Choosing an organization name displays its details. To expand folders in the device tree, click the plus sign (+) to the right of an option. To collapse the structure, click the minus sign (-). At the top of the tree are the following buttons: • Refresh—Refreshes the device tree after you have imported devices or made changes to the User Groups. • Plus sign (+) —Allows you to add an item to the selected option in the device tree. • Garbage can—Deletes the selected entry. **Note** Menus are based on device types. Although menu labels are the same for different device types, the actual menu definition is different. For example, you cannot preserve the menu state while traversing back an forth from a module to a virtual context in the device tree.
2	Option menus, which appear in Config windows. Click the icon on the bar to show or hide the options.
3	Object selector. Use this field to choose a device, context, building block, or other object that you want to view information on or configure.
4	Command buttons. Use these buttons to perform the action identified by the button label.
5	Input fields. Use these fields to make selections and provide information. When there are more than three choices for any field, the field displays as a drop-down list. Otherwise, selections display with radio buttons.
6	Feature panel that contains functions that correspond to what is selected in the device or organization tree. Click on a command to expand the list of options that correspond to that command.

Related Topics

• ANM Buttons, page 1-9

• ANM Screen Conventions, page 1-15

ANM Buttons

Table 1-3 describes the buttons that appear in some of the Config, Monitor, and Admin windows.

Table 1-3   Button Descriptions

Button	Name	Description
	ACL table (expand)	Allows you to expand all ACL table entries.
	ACL table (collapse)	Allows you to collapse all ACL table entries.
	ACL table (resequence)	Allows you to open the resequence popup window that allows you to reorder the ACL table entries.
	Add	Allows you to add an entry to the displayed table.
	Add another	Saves the current entries and refreshes the window so that you can add another entry.
	Advanced editing mode	Allows you to view or enter advanced arguments for the chosen display.
	Auto refresh (pause)	Allows you to interrupt the table data autorefresh process.
	Auto refresh (resume)	Indicates that the table data autorefresh process is on pause and allows you to resume.
	Customize	Allows you to customize the table to suit your needs. (See the "Customizing Tables" section on page 1-12.)
	Delete	Deletes the chosen entry in the table.
	Duplicate	Duplicates the chosen entry in the table.

Table 1-3   Button Descriptions (continued)

Button	Name	Description
	Edit	Opens the configuration window of a chosen entry in the table.
	Filter	Filters the displayed list of items according to the criteria that you specify. (See the "Filtering Entries" section on page 1-12.) Also displays a filter text box where strings can be entered.
	Go	Appears when filtering is enabled; updates the table with the filtering criteria.
	Key	Indicates that the associated field is a foreign key field. This field takes its values from another table.
	Plus	Displays a table with information related to the field where Plus appears. For example, if Plus appears next to the field label *VLAN Group*, clicking Plus displays a list of all VLAN groups in a separate window.
	Refresh	Refreshes the content area.
	Save	Displays the current information in a new window in either raw data or Microsoft Excel format so you can save it to a file or print it.
	Full window view	Allows you to adopt a larger (full) window view for a table or dashboard window.
	Reduced window view (normal)	Allows you to adopt a smaller window view for a table or dashboard window.
	Sort	Sorts a column alphabetically up or down.
	Stop	Stops the current process. If a process is only partially complete, it will finish its current operation and exit. For example, when stop is used during the import of two modules, it will complete only the first of two module imports.

Table 1-3   Button Descriptions (continued)

Button	Name	Description
	Switch between configure and browse modes	Displays the subtables for those items that have additional sets of parameters that can be configured, such as Config > Devices > Network > VLAN Interfaces. **Note** This button is not available on single-row tables such as Config > Devices > System > Syslog or Config > Devices > System > SNMP. To switch between these modes, navigate to another window where the button appears (for example, Config > Devices > Load Balancing > Server Farms), click the button to enter desired mode, then return to the window on which the button was missing. You will remain in the mode you chose.
	View Excel	Displays the raw data in Microsoft Excel format in a separate browser window.
	View raw data	Displays the raw data in table format.
	Show as image	Displays the historical data object graph in a separate browser window.
	View as chart	Toggles the display of a historical data object as a graph in the monitoring window.
	View as grid	Toggles the display of a historical data object as a numerical grid in the monitoring window. From this display, you can export the data in Microsoft Excel format.

Related Topics

- ANM Windows and Menus, page 1-7
- ANM Screen Conventions, page 1-15

Table Conventions

This section describes the ANM GUI table conventions, including how to filter the information displayed and how to customize a table's appearance.

This section includes the following topics:

- Filtering Entries, page 1-12
- Customizing Tables, page 1-12
- Using the Advanced Editing Option, page 1-14

Filtering Entries

You can filter the information that a table displays. Click **Filter** to view table entries using the criteria that you chose. When filtering is enabled, a filter row appears above the first table entry that allows you to filter entries in the following ways:

- In fields with drop-down lists, choose one of the ANM-identified categories (see Figure 1-4). The table refreshes automatically with the entries that match the chosen criterion.

- In fields without drop-down lists, enter the string that you want to match, and then click Go above the first table entry. The table refreshes with the entries that match your input.

- Enter the string in the filter box. For example, by entering the string gold and clicking Go, only the gold Resource Class virtual contexts appear (see Figure 1-4).

Figure 1-4   Example Table with Filtering Enabled

Related Topics

- ANM Interface Components, page 1-5
- Customizing Tables, page 1-12
- Using the Advanced Editing Option, page 1-14

Customizing Tables

You can customize a table for your use. Click Customize in a table to configure the table to suit your needs.

When you place the cursor over Customize, the following items appear:

- Default—When chosen with a check mark, this item indicates that the ANM default table format is being used by the current table.

- Configure—When chosen, this item opens a dialog box that allows you to create a new customized table format or to modify the table format currently in use.

Procedure

Step 1   When viewing a table, choose **Customize > Configure**.

The List Configuration dialog box appears.

Step 2   In the List Configuration dialog box, enter the information in Table 1-4.

✎

Note   Depending on the table that you chose, the available fields in the configuration table differ. Table 1-4 includes sample fields that might appear.

✎

Note You can be as inclusive or as restrictive as you like when setting table configuration options.

Table 1-4 **Table Configuration Attributes**

Field	Description
List Customization Name	Unique name for a new table configuration.
Fields	Fields that you can include in the table, choose the fields from the Available Items list, and click Add. To remove fields from the table, choose the fields from the Selected Items list, and then click Remove.
Up/Down	Location of a column in the table that you can change. Choose its name in the column on the right, then click Up or Down to place it in the desired location.
Group By	Field that you want to group entries by.
	When you choose a field for grouping, one or more entries appears in the table with + at the beginning of the entry, the name of the field, the grouping criteria, and the number of items in the group. Click + to view all entries in the group.
Descending	Descending check box to sort the groups in reverse order. Clear the Descending check box to sort the groups in ascending order.
Sort By	Field that you want to sort entries by.
	When you choose a field for sorting, all entries in the table are sorted according to the values in the selected field.
Name Filter	Name that represents the name of each field in the table.
	Enter the string or value that you want to filter the results by.
	You can enter complete or partial strings or values to be matched. Do not include wildcard characters.
Version Filter	Version that represents the name of each field in the table.
	Enter the string or value that you want to filter the results by.
	You can enter complete or partial strings or values to be matched. Do not include wildcard characters.

Step 3 Do one of the following:

- Click **Save** to save your entries under a new name and to close the List Configuration dialog box. If a table using this format is displayed, the table is updated automatically.

- Click **Cancel** to exit the procedure without saving your entries and to close the List Configuration dialog box.

- Click **Apply** to apply your current entries to the table that you are viewing, to save your entries, and to close the List Configuration dialog box.

- Click **Delete** to delete the currently selected customized table format. It no longer appears as an option when you click **Customize**.
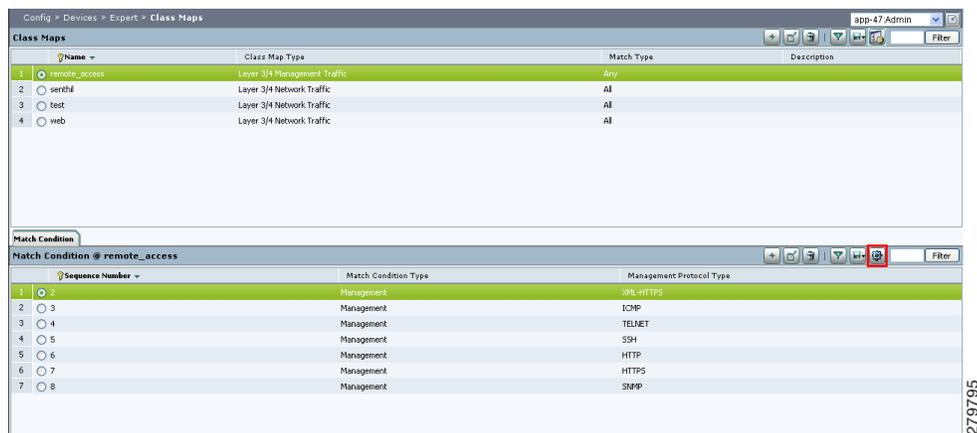
Related Topics

- ANM Interface Components, page 1-5

- Filtering Entries, page 1-12

- Using the Advanced Editing Option, page 1-14

Using the Advanced Editing Option

By default, tables include columns that contain configured attributes or a subset of columns related to a key field.

To view all configurable attributes in table format, click **Advanced Editing Mode** (the highlighted button in Figure 1-5). When advanced editing mode is enabled, all columns appear for your review (see Figure 1-5).

Figure 1-5   ***Advanced Editing Enabled Window***
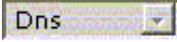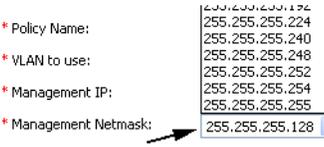

Related Topics

- ANM Interface Components, page 1-5

- Filtering Entries, page 1-12

- Customizing Tables, page 1-12

ANM Screen Conventions

Table 1-5 describes other conventions used in ANM screens.

Table 1-5   ANM Window Conventions

Convention	Example	Description
Dimmed field	Dns	If no items are selected, buttons are dimmed. If an item is selected, only operational buttons appear.
Red asterisk	* Policy Name:	A red asterisk indicates a required field.
Yellow field with red font	1234 Bad IP Address	Incorrect, invalid, or incomplete entries appear as red font against a yellow background with the reason for that error. In the example, an IP address cannot begin with four digits, which results in this display.
Drop-down lists	* Policy Name: * VLAN to use: * Management IP: * Management Netmask: 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255 255.255.255.128	When there are more than three choices for any field, the field displays as a drop-down list. Otherwise, selections display with radio buttons.

Related Topics

- Table Conventions, page 1-11
- ANM Interface Components, page 1-5