



CHAPTER 20

Troubleshooting Cisco Application Networking Manager Problems

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This chapter describes how to troubleshoot ANM issues.



Note

When naming ACE objects (such as a real server, virtual server, parameter map, class map, health probe, and so on), enter an alphanumeric string of 1 to 64 characters, which can include the following special characters: underscore (_), hyphen (-), dot (.), and asterisk (*). Spaces are not allowed.

If you are using ANM with an ACE module or ACE appliance and you configure a named object at the ACE CLI, keep in mind that ANM does not support all of the special characters that the ACE CLI allows you to use when configuring a named object. If you use special characters that ANM does not support, you may not be able to import or manage the ACE using ANM.

This chapter includes the following sections:

- [Changing ANM Software Configuration Attributes, page 20-1](#)
- [Discovering and Adding a Device Does Not Work, page 20-7](#)
- [Cisco License Manager Server Not Receiving Syslog Messages, page 20-7](#)
- [Using Lifeline, page 20-7](#)
- [Backing Up and Restoring Your ANM Configuration, page 20-11](#)

For additional troubleshooting information, see the *Installation Guide for Cisco Application Networking Manager 5.1* or the *Installation Guide for Cisco Application Networking Manager 5.1 Virtual Appliance*.

Changing ANM Software Configuration Attributes

After you have installed the ANM, you can reconfigure ANM software configuration attributes, such as enabling HTTP(S) for Web Services, or the ports that ANM uses for communication with the network devices. For information about the ports that ANM uses, see [Appendix A, “ANM Ports Reference.”](#)

This section includes the following topics:

- [Changing ANM Configuration Properties, page 20-2](#)
- [Example ANM Standalone Configuration, page 20-4](#)
- [Example ANM HA Configuration, page 20-4](#)

- [Example ANM Advanced Options Configuration Session, page 20-6](#)

Changing ANM Configuration Properties

This section shows how to change the ANM configuration properties. The procedure varies slightly depending on the ANM application type; ANM server or ANM Virtual Appliance.

Procedure

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- Step 1** Do one of the following depending on the ANM application type:
- ANM server: From the Linux command line, log in as the root user.
 - ANM Virtual Appliance: Log in as administrator using SSH or console.
- Step 2** Do one of the following:
- For a standard configuration change, enter the following depending on the ANM application type:
 - ANM server: `/opt/CSCOanm/bin/anm-tool configure`
 - ANM Virtual Appliance: `anm-tool configure`
 - To reconfigure with the advanced-options, enter the following depending on the ANM application type:
 - ANM server: `/opt/CSCOanm/bin/anm-tool --advanced-options=1 configure`
 - ANM Virtual Appliance: `anm-tool configure advanced-options`
 - (ANM server only) To switch from a HA to a non-HA system configuration, enter the following:
 - `/opt/CSCOanm/bin/anm-tool --ha=0 configure`
 - (ANM server only) To switch from a non-HA to a HA system configuration, enter the following:
 - `/opt/CSCOanm/bin/anm-tool --ha=1 configure`

The **Keep existing ANM configuration?** [y/n]: prompt appears.

- Step 3** At the prompt appears, enter **n** (no).

The current configuration information appears. For each configuration property, the current value is displayed in square brackets.

- Step 4** Do one of the following:

- To accept the current value for a configuration property, press **Enter**.
- To change a configuration property, enter the appropriate information.

When reconfiguring ANM using the **advanced-options** command, the configuration sequence includes prompts applicable to the web server that serves requests for the ANM Web Service API. The Web Service API provides SOAP-based programmatic access to the functionality of ANM. By default, it is disabled. You can enable it using this option.

The advanced options attributes and their default setting are as follows:

- Enable HTTP for Web Server: false



Caution

Remember that enabling HTTP makes the connection to ANM less secure.

- Inbound Port for HTTP traffic to ANM Default: 80

- Enable HTTPS for Web Server: true
- Inbound Port for HTTPS traffic to ANM Default: 443
- HTTP Port of Web Services: 8080
- Enable HTTP for Web Services: false
- HTTPS Port of Web Services: 8443
- Enable HTTPS for Web Services: false
- Idle session timeout in msec: 1800000

The idle session timeout applies to user sessions for the ANM GUI. Users who are idle for an amount of time greater than this value are automatically logged off the application. By default, this setting is 1800000 milliseconds, or 30 minutes.

- Change the memory available to ANM process: low

Check the available physical memory; if it is less than 3.5 G, then set the memory size to **low** (1 G), which is the default. If the available physical memory is greater than 3.5 G, set the memory size to **high** (2 G).



Note If you set the memory size to **high** and ANM determines that there is not enough available physical memory, it sets the memory size to **low**.



Note (ANM server only) When modifying the memory size in an ANM HA configuration, perform the change as follows:

- Stop both ANM servers (active and standby).
- Change the memory size on both ANM servers (Steps 1 to 4 above).
- Restart the ANM server that you want to operate in the active state (Step 5 below).
- Restart the standby ANM server (Step 5 below).

After you have accepted or changed all of the configuration property values, a list of all the properties appears and the “Commit these values? [y/n/q]” prompt appears.

Step 5 At the Commit prompt, do one of the following:

- To accept the value and restart the ANM, enter **y** (yes).



Note If you modified the advanced options, restarting ANM may interfere with active sessions in the ANM web interface.



Note If you receive errors when attempting to change the HA properties configuration values, check the node ID to be sure they are not switched.

- To go through the list of configuration properties again, enter **n** (no).
- To retain the original property values and exit the configuration session, enter **q** (quit).

Example ANM Standalone Configuration

This section contains an example of a configuration session for an ANM standalone system. The values shown in the brackets are the currently configured values.

```

/opt/CSCOanm/bin/anm-tool configure
Configuring ANM

Checking ANM configuration files
  Keep existing ANM configuration? [y/n]: n
  Creating config file (/opt/CSCOanm/etc/cs-config.properties)

Enable HTTP for Web Server [true]:
Inbound Port for HTTP traffic to ANM Default [80]:
Enable HTTPS for Web Server [true]:
Inbound Port for HTTPS traffic to ANM Default [443]:

These are the values:
Enable HTTP for Web Server: true
Inbound Port for HTTP traffic to ANM Default: 80
Enable HTTPS for Web Server: true
Inbound Port for HTTPS traffic to ANM Default: 443

Commit these values? [y/n/q]: y
Committing values ... done
  Keeping existing configuration: /opt/CSCOanm/lib/java/thirdparty/ctm_config.txt

Stopping services
  Stopping monit services (/etc/monit.conf) ... (0)
  Stopping monit ... Stopped
  Stopping heartbeat ... Stopped

Installing system configuration files
  Backing up //opt/CSCOanm/etc/my-local.cnf

Setting service attributes
  Enabling mysql for SELinux
setsebool: SELinux is disabled.
  Service monit is started by OS at boot time

Starting mysql ... Started
mysql status ... Ready

Configuring mysql
  Checking mysql user/password
  Setting mysql privileges
  Disabling mysql replication

Starting services
  Starting monit ...Starting monit daemon with http interface at [*:2812]
  Started

```

Example ANM HA Configuration



Note

The information in this section pertains to the ANM server application only.

The following is an example of a configuration session for an ANM HA system. Standalone systems will not contain any HA properties but will include a limited property value configuration. The values shown in the brackets are the currently configured values.

```
/opt/CSCOanm/bin/anm-tool configure
Configuring ANM

Checking ANM configuration files
Keep existing ANM configuration? [y/n]: n
Creating config file (/opt/CSCOanm/etc/cs-config.properties)

Enable HTTP for Web Server [false]: true
Inbound Port for HTTP traffic to ANM Default [80]: 80
Enable HTTPS for Web Server [true]:
Inbound Port for HTTPS traffic to ANM Default [443]:
Database Password [nI4ewPbmV51S]: passme
HA Node 1 UName []: anm49.cisco.com
HA Node 2 UName []: anm50.cisco.com
HA Node 1 Primary IP [0.0.0.0]: 10.77.240.126
HA Node 2 Primary IP [0.0.0.0]: 10.77.240.100
HA Node 1 HeartBeat IP [0.0.0.0]: 10.10.10.1
HA Node 2 HeartBeat IP [0.0.0.0]: 10.10.10.2
HA Virtual IP [0.0.0.0]: 10.77.240.101
HA Node ID [1 or 2] []: 1

These are the values:
Enable HTTP for Web Server: true
Inbound Port for HTTP traffic to ANM Default: 80
Enable HTTPS for Web Server: true
Inbound Port for HTTPS traffic to ANM Default: 443
Database Password: passme
HA Node 1 UName: anm49.cisco.com
HA Node 2 UName: anm50.cisco.com
HA Node 1 Primary IP: 10.77.240.126
HA Node 2 Primary IP: 10.77.240.100
HA Node 1 HeartBeat IP: 10.10.10.1
HA Node 2 HeartBeat IP: 10.10.10.2
HA Virtual IP: 10.77.240.101
HA Node ID [1 or 2]: 1

Commit these values? [y/n/q]: y
Committing values ... done
Keeping existing configuration: /opt/CSCOanm/lib/java/thirdparty/ctm_config.txt

Stopping services
Stopping monit services (/etc/monit.conf) ... (0)
Stopping monit ... Stopped
Stopping heartbeat ... Stopped

Installing system configuration files

Setting service attributes
Enabling mysql for SELinux
Service monit is started by OS at boot time

Starting mysql ... Started

Configuring mysql
Checking mysql user/password
Setting mysql privileges
Enabling mysql replication
Setting up database
executing /opt/CSCOanm/lib/install/etc/dcmdb.sql ... done
```

```
Starting services
Starting monit ... Started
```

Example ANM Advanced Options Configuration Session

The following is an example of a configuration session for an ANM advanced options. The values shown in the brackets are the currently configured values.



Note

The **anm-tool** command in the example uses the ANM server version of the command for modifying the advanced options. The ANM Virtual Appliance version of the command is **anm-tool configure advanced-options**. The information that displays after entering the command is the same for both applications.

```
/opt/CSCOanm/bin/anm-tool --advanced-options=1 configure
Configuring ANM

Checking ANM configuration files
  Keep existing ANM configuration? [y/n]: n
  Creating config file (/opt/CSCOanm/etc/cs-config.properties)
Enable HTTP for Web Server [false]:
Inbound Port for HTTP traffic to ANM Default [80]:
Enable HTTPS for Web Server [true]:
Inbound Port for HTTPS traffic to ANM Default [443]:
HTTP Port of Web Services [8080]:
Enable HTTP for Web Services [false]:
HTTPS Port of Web Services [8443]:
Enable HTTPS for Web Services [false]:
Idle session timeout in msec [1800000]:
Change the memory available to ANM process [low|high] [low]:
These are the values:
Enable HTTP for Web Server: false
Inbound Port for HTTP traffic to ANM Default: 80
Enable HTTPS for Web Server: true
Inbound Port for HTTPS traffic to ANM Default: 443
HTTP Port of Web Services: 8080
Enable HTTP for Web Services: false
HTTPS Port of Web Services: 8443
Enable HTTPS for Web Services: false
Idle session timeout in msec: 1800000
Change the memory available to ANM process [low|high]: low
Commit these values? [y/n/q]: y
Committing values ... done
  Keeping existing configuration: /opt/CSCOanm/lib/java/thirdparty/ctm_config.txt
Stopping services
  Stopping monit services (/etc/monit.conf) ... (0)
```

Discovering and Adding a Device Does Not Work

After IP discovery has checked the network and made a list of devices of each type, the device import may have failed when you tried to import the device. The device import may not have worked because IP discovery uses Telnet and SNMP to discover potential devices, while ANM requires SSH to import a device. So it is likely that IP discovery may have found some devices that cannot be imported or may not have found devices that could be imported.

To update the device so that it can be imported by ANM, see the [“Preparing Devices for Import” section on page 5-4](#).

To add the device, use the Config > Devices > Add method. For detailed procedures, see the [“Importing Network Devices into ANM” section on page 5-9](#).

Cisco License Manager Server Not Receiving Syslog Messages

Firewall settings are implemented as IP tables with Red Hat Enterprise Linux 5.2, and might drop syslog traffic.

If you are not receiving syslog messages even after following the procedure documented in the [“Enabling a Setup Syslog for Autosync for Use With an ACE” section on page 5-25](#), perform the procedure in this section.

Procedure

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- | | |
|---------------|--|
| Step 1 | Update the rules in your IP tables using the command line. |
| Step 2 | Make sure the default syslog port 514 is open as noted in Appendix A, “ANM Ports Reference.” |
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Using Lifeline

Diagnosing network or system-related problems that happen in real time can consume a considerable amount of time and lead to frustration even for a system expert. When a critical problem occurs within the ANM system or the network components managed by the ANM, you can use the troubleshooting and diagnostics tools provided by the Lifeline feature to report to the Cisco support line and generate a diagnostic package. Support engineers and developers can subsequently reconstruct your system and debug the problem using the comprehensive information captured in the lifeline.

Lifeline takes a snapshot of the running system configuration, status, buffers, logs, thread dumps, messages, CLI device configuration commands, device **show run** commands, and so on. It gathers a period of historical network and system events that have been recorded directly preceding the event. If required, Lifeline can back up and package the ANM database or a file subdirectory or trace and package a period of traffic flow packets for a specified virtual context.

The following sections describe how to use the Lifeline feature:

- [Guidelines for Using Lifeline, page 20-8](#)
- [Creating a Lifeline Package, page 20-8](#)

- [Downloading a Lifeline Package, page 20-9](#)
- [Adding a Lifeline Package, page 20-10](#)
- [Deleting a Lifeline Package, page 20-10](#)

Guidelines for Using Lifeline

Lifelines can be created when unwanted events occur. Under such circumstances, available resources could be extremely low (CPU and memory could be nearly drained). You should be aware of the following:

- Create a Lifeline package after you encounter a problem that might require customer support assistance. The package is meant to be viewed by customer support.
- Lifeline collects debug data from diagnostic generators based on priority – most important to least important. When the total data size reaches 200 MB, the collector stops collecting, and data from generators with lower priorities can be lost. For details on content, size, time, state, and any dropped data, see the Readme file included in each Lifeline package.
- Lifeline collects the last 25 MB of data from the file and truncates the beginning content.
- Lifelines are automatically packaged by the system in zip files. The naming convention for a lifeline package is “lifeline-yyMMdd-hhmmss.zip”. For example, lifeline-07062-152140.zip is a Lifeline package created at 3:21:40 PM, June 22, 2007.
- Only one Lifeline package is created at a time. The system will reject a second request made before the first Lifeline has been packaged.
- Lifeline times out in 60 minutes.
- A maximum of 20 Lifeline packages are stored at a time.

Creating a Lifeline Package

You can create a lifeline package.

Assumptions

This section assumes the following:

- ANM is installed and running.
- You have reviewed the guidelines for managing lifelines (see the [“Guidelines for Using Lifeline” section on page 20-8](#)).
- You have opened a case with Cisco technical support.

Procedure



Note

Your user role determines whether you can use this option.

Step 1 Choose **Admin > Lifeline Management**.

Step 2 Enter a description for the package (required).

The description can include information about why the package is being created, who requested the package, and so forth.

Step 3 Click **Save**.

The package is created in the following format: lifeline-yyMMdd-hhmmss.zip, and displays in the Lifelines pane. The package size, name, and generation date display in the New Lifeline window.



Note Do not perform any module maintenance until the package is created.

Step 4 After the package is created, do one of the following:

- Click **Download** to save the package to a directory on your computer or to view the package contents. See the [“Downloading a Lifeline Package” section on page 20-9](#).
 - Click **Add** to add the package to the ANM database. See the [“Adding a Lifeline Package” section on page 20-10](#).
 - Click **Delete** to delete the package. See the [“Deleting a Lifeline Package” section on page 20-10](#).
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Related Topics

- [Using Lifeline, page 20-7](#)
- [Creating a Lifeline Package, page 20-8](#)
- [Adding a Lifeline Package, page 20-10](#)
- [Downloading a Lifeline Package, page 20-9](#)

Downloading a Lifeline Package



Note Your user role determines whether you can use this option.

You can download a package for displaying or saving to your local drive.

Assumption

You have created a package (see the [“Creating a Lifeline Package” section on page 20-8](#)).

Procedure

Step 1 Choose **Admin > Lifeline Management**.

Step 2 Choose the package (Lifeline) from the list.

Step 3 Click **Download**.

The package is sent to your web browser, with which you can save or view the package.



Note Do not perform any module maintenance until the package download to your web browser has completed.

Related Topics

- [Using Lifeline, page 20-7](#)
- [Creating a Lifeline Package, page 20-8](#)
- [Adding a Lifeline Package, page 20-10](#)
- [Deleting a Lifeline Package, page 20-10](#)

Adding a Lifeline Package

**Note**

Your user role determines whether you can use this option.

You can add a package to the ANM database.

Assumption

You have created a package (see the [“Creating a Lifeline Package”](#) section on page 20-8).

Procedure

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- Step 1** Choose **Admin > Lifeline Management**.
The Lifeline Management window appears.
- Step 2** In the Lifeline Management window, enter a description and click **Add**.
The package is added to the Lifelines list, and the window refreshes.

**Note**

Do not perform any module maintenance until the package is added to the list.

Related Topics

- [Using Lifeline, page 20-7](#)
- [Creating a Lifeline Package, page 20-8](#)
- [Downloading a Lifeline Package, page 20-9](#)
- [Deleting a Lifeline Package, page 20-10](#)

Deleting a Lifeline Package

**Note**

Your user role determines whether you can use this option.

You can delete a package.

Procedure

-
- Step 1** Choose **Admin > Others > Lifeline Management**.

The Lifeline Management window appears.

Step 2 From the list of lifelines in the Lifeline Management window, choose a lifeline to delete.
The details of the lifeline display.

Step 3 Click **Delete**.
A confirmation popup window displays that requests you confirm the deletion.

Step 4 Click **OK** to delete the package.
The Lifeline Management window display updates.

Related Topics

- [Using Lifeline, page 20-7](#)
- [Creating a Lifeline Package, page 20-8](#)
- [Adding a Lifeline Package, page 20-10](#)
- [Downloading a Lifeline Package, page 20-9](#)

Backing Up and Restoring Your ANM Configuration

You can create a backup of your ANM configuration and restore it if necessary. We recommend that you periodically create a backup of ANM.

The procedures for creating a backup and restoring your ANM configuration vary depending on which of the following ANM applications you are using:

- ANM server: See the [Installation Guide for Cisco Application Networking Manager 5.1](#) for the backup and restore procedures.
- ANM Virtual Appliance: See the [Installation Guide for Cisco Application Networking Manager 5.1 Virtual Appliance](#) for the backup and restore procedures.



Note

For details about using the ACE device backup and restore functions in ANM, see the [“Performing Device Backup and Restore Functions” section on page 6-59](#). The backup and restore functions allow you to back up or restore the configuration and dependencies of an entire ACE or of a particular virtual context.
