



CHAPTER 19

Using ANM Mobile

Date: 1/10/13

This chapter describes Cisco ANM Mobile, which allows you to access your ANM server or ANM Virtual Appliance and manage your devices using a mobile device such as an iPhone or Android smartphone.

This chapter contains the following sections:

- [Information About ANM Mobile, page 19-2](#)
- [ANM Mobile Prerequisites and Supported Devices, page 19-4](#)
- [Guidelines and Restrictions, page 19-4](#)
- [Using ANM Mobile, page 19-5](#)

Information About ANM Mobile

ANM Mobile allows supported mobile devices to access to your ANM server or ANM Virtual Appliance and manage the network objects in much the same way you do from an ANM client. Using a mobile device, you can run ANM Mobile as a native application (app) or inside the mobile device browser. Using either the native app or the mobile device browser, you can perform the following tasks:

- Activate or suspend a real server, virtual server, VIP answer, or DNS rule.
- Access the status and details of a real server, virtual server, VIP answer, or DNS rule.
- Change the weight of a real server.
- Display a real-time chart of a real or virtual server statistical metric, such as the number of connections.
- Display the Operation Summary (similar to the Device Configuration Summary Panel inside the ANM dashboard) by object type (Real Server, Virtual Server, VIP Answer or DNS Rule) in category of healthy, unhealthy, and others. You can drill down to see the list of objects in the selected category and object type.
- (Native app only) Receive alarm notifications from ANM when conditions exist that require your attention.
- Add frequently accessed objects to the Favorite screen.
- Use the search feature to find managed objects, such as a device, real server, virtual server, VIP answer, or DNS rule.
- View the alarm summary and details.
- Change the real time chart polling interval and connection time out values.
- Save your access credentials.
- From ANM's Mobile Devices window (Admin > Role-Based Access Control > Mobile Devices), system administrators can view the list of registered mobile users and send a test push notification message to a user's mobile device.

Table 19-1 shows the main differences between using ANM Mobile as a native app or using it in the mobile device's browser.

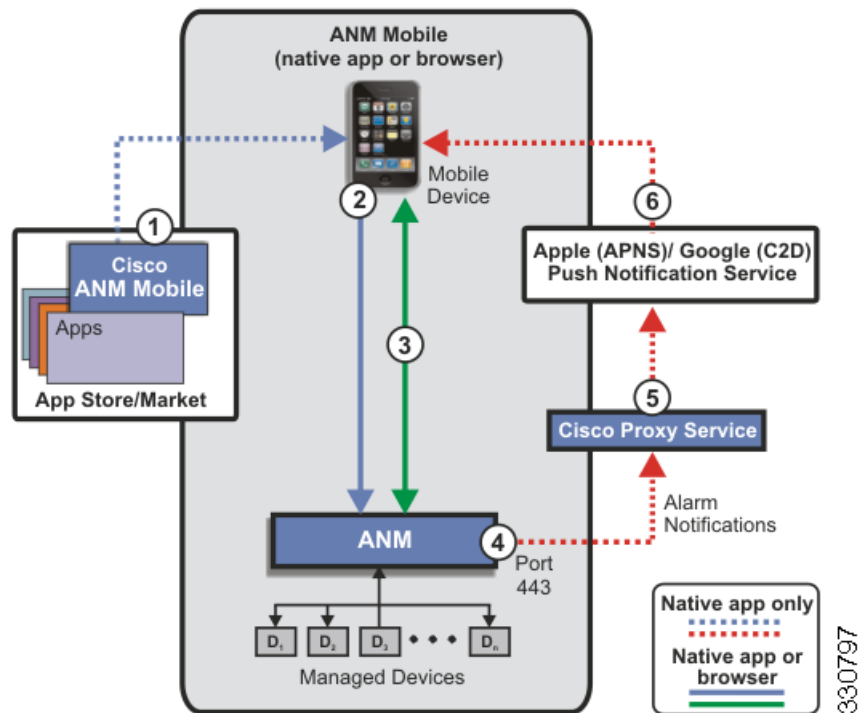
Table 19-1 Major ANM Mobile Differences Between Native App and Mobile Browser

Category	Native Application	Mobile Browser
ANM Notification Service (native app only)	Supported	Not supported
Client application (ANM Mobile) download and installation	Required	Not required ¹
Upgrade	Required download and installation of latest version	Part of the ANM server upgrade process

1. When using a mobile device browser, you enter the ANM server IP address in the browser address bar, at which point you are redirected to ANM Mobile.

Figure 19-1 provides an overview of ANM Mobile, including the components that are available with the native app only.

Figure 19-1 ANM Mobile Overview



The components in Figure 19-1 are as follows:

1. ANM Mobile app—Obtain the no-cost Cisco ANM Mobile app from the app store or market associated with the mobile device.
2. Mobile device login—Enter ANM IP address, username, and password to log in to ANM server or ANM Virtual Appliance from the mobile device. After a successful login, ANM associates the mobile device with the user (see the “[Displaying a List of Users](#)” section on page 18-18).
3. Access ANM—Access ANM functionality to monitor your network and perform operational tasks. For more information, see the “[Using ANM Mobile](#)” section on page 19-5.
4. Alarm Notifications—ANM sends alarm notifications to a mobile device (native app required) through a proxy service.

For more information, see the “[Setting Up and Viewing Mobile Device Alarm Notifications](#)” section on page 19-13.

5. Cisco Proxy Service—Standalone server (managed by Cisco IT) that forwards notification messages from ANM to the Apple or Google Push Notification Service. The proxy service, which is hosted by Cisco and used for alarm notifications, manages the push notification messages that ANM issues by forwarding them to the Apple or Android Push Notification Services.

For more information, see the “[Configuring ANM with a Proxy Server for ANM Mobile Push Notifications](#)” section on page 18-68.

6. Push notification service—Allows a third-party server, such as the ANM server, to send notification messages securely to a mobile device. The push notification services provided by APPLE and Google are used for alarm notifications and are best effort; therefore, the push notification service provided by Cisco is also best-effort.

Related Topics

- [ANM Mobile Prerequisites and Supported Devices, page 19-4](#)
- [Guidelines and Restrictions, page 19-4](#)
- [Using ANM Mobile, page 19-5](#)

ANM Mobile Prerequisites and Supported Devices

Your ANM server or ANM Virtual Appliance must be using ANM software Version 5.1 or later to access ANM Mobile.

[Table 19-2](#) shows the mobile devices that ANM Mobile version 1.0 supports.

Table 19-2 Supported Devices

OS Platform	Tested Version	Native Application	Mobile Browser	Tested Device Types
Apple iOS	4.2 and 4.3	Yes	Safari	iPhone, iPod, iPad
Android	2.2, 2.3.3, 2.3.6	Yes	Default Android Browser	<p>Tested on the following Android handsets: HTC Inspire 4G, HTC Desire, Google Nexus One, Cisco Cius</p> <p>Note ANM Mobile may also work on other Android devices, but testing was performed on the above-mentioned set of Android handsets.</p>

Use following links to download the ANM Mobile app to your smartphone:

- [ANM Mobile on iPhone](#)
- [ANM Mobile on Android](#)
- [ANM Mobile on Cisco Cius](#)

Related Topics

- [Information About ANM Mobile, page 19-2](#)
- [Guidelines and Restrictions, page 19-4](#)
- [Using ANM Mobile, page 19-5](#)

Guidelines and Restrictions

ANM Mobile includes the following guidelines and restrictions:

- Communication guidelines are as follows:

- Communication between ANM Mobile and ANM is secure over HTTPS.



Note Ensure that your mobile device network setting permits access to ANM.

- User authentication is required to access the web services.
- The existing ANM user account is used to log in to ANM from the mobile device.
- All the existing RBAC (role-based access control) for the login user are enforced.
- The alarm notification feature requires access to the Internet. Depending on your network requirements, ANM can communicate directly with the Cisco proxy service or you can configure ANM to use your proxy server when issuing alarm notifications to the proxy service. For more information, see the “[Configuring ANM with a Proxy Server for ANM Mobile Push Notifications](#)” section on page 18-68.
- The number of ANM Mobile users that can simultaneously connect to a single ANM server or ANM Virtual Appliance is limited to 35.
- (Android devices only) When navigating within the ANM Mobile native app, you must use the navigation tools provided by the native app because the native Android navigation tools are not supported.

Related Topics

- [Information About ANM Mobile, page 19-2](#)
- [ANM Mobile Prerequisites and Supported Devices, page 19-4](#)
- [Using ANM Mobile, page 19-5](#)

Using ANM Mobile

This section shows how to log in to ANM Mobile from your mobile device and then use its features to manage your network. If you are using the ANM Mobile app and want to use the alarm notification feature, this section also describes how to configure ANM and the ANM Mobile to enable this feature.

This section includes the following topics:

- [Logging In and Out of ANM Mobile, page 19-5](#)
- [Using the Favorites Feature, page 19-6](#)
- [Monitoring Managed Object Status, page 19-7](#)
- [Modifying an Object’s Operating State or Weight, page 19-10](#)
- [Displaying Real Time Charts, page 19-12](#)
- [Using the ANM Mobile Setting Feature, page 19-12](#)
- [Setting Up and Viewing Mobile Device Alarm Notifications, page 19-13](#)

Logging In and Out of ANM Mobile

This section shows how to log in to and out of ANM Mobile from your mobile device.

Prerequisite

If you want to log in and use the native app version of ANM Mobile, you must have the Cisco ANM Mobile app loaded on your mobile device. This no-charge app is available at the application store or market associated with any supported mobile device type.

Procedure

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- Step 1** From your mobile device, do one of the following depending on whether you are using a browser to access ANM Mobile or using the ANM Mobile native app:
- **Browser**—Open the browser and in the address box, enter the IP address of the ANM server or ANM VA using the following format:
`https://ANM_IPaddress`
 The Login window appears. Enter your username and password.
 - **ANM Mobile app**—Do the following:
 - a. Click the **ANM Mobile** app icon to launch the application. The Login window appears.
 - b. From the login window, enter the IP address and port number of the ANM server or ANM Virtual Appliance and your username and password.
 - c. (Optional) Change the Save Credentials setting by doing the following:
 - Click **ON** to save your user credentials. This is the default. When set to ON, you just have to click **Log In** to log back in to ANM Mobile.
 - Click **OFF** to not save your user credentials.
- Step 2** Click **Log In**.
- The monitor page appears unless you have at least one favorite object specified, in which case the Favorites windows appears (see the [“Using the Favorites Feature”](#) section on page 19-6).
- Step 3** To log out of ANM Mobile, click **Settings** and click **Log Out**.
-

Using the Favorites Feature

The favorites feature allows you to create short cuts to ANM objects that you frequently access. When you specify at least one favorite object, the Favorites window becomes the home page that appears when you log in to ANM Mobile.

Guidelines and Restrictions

- Favorite objects that are no longer available are grayed out. Object may no longer be available for the following reasons:
 - The object no longer exists in the ANM server because the object or the object’s host Virtual Context was deleted.
 - An RBAC change was made that prevents access by the user.

To remove a grayed out object from the favorites list, you must delete it.

- If you are using the ANM Mobile native app and want to receive alarm notifications from ANM, you must specify favorites on ANM Mobile that match the objects that you select for alarm notifications when configuring an alarm threshold group on ANM. For more information, see the [“Setting Up and Viewing Mobile Device Alarm Notifications”](#) section on page 19-13.

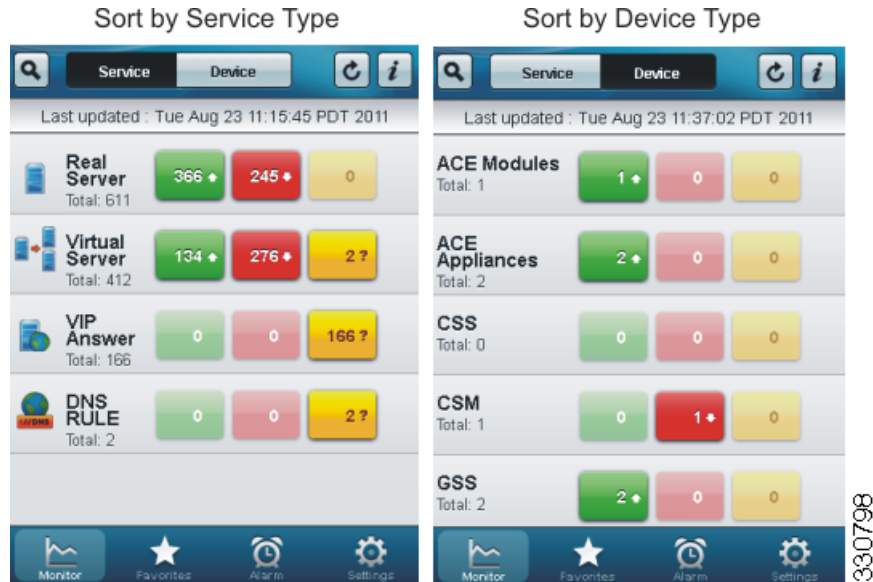
Procedure

- Step 1** Display the Favorites window by clicking the **Favorites** button located at the bottom of the window. The Favorites window appears.
- Step 2** To view a favorite object, click the object from the Favorites list.
- Step 3** To add an object to the Favorites window, do one of the following:
- From the Favorites window, click the **Add** icon (+) to open the search GUI, from which you can locate and choose the object. To add multiple objects, repeat this step for each object.
 - From the detailed managed object window, click the **Add** icon (+). For more information, see the [“Monitoring Managed Object Status”](#) section on page 19-7.
- Step 4** To delete a favorite from the list, do the following:
- a. Click the favorite to delete and click **Edit**. The Edit view appears.
 - b. From the Edit view, click the red **Delete** icon (–) located next to the favorite listing to delete. ANM Mobile removes the favorite from the list.
-

Monitoring Managed Object Status

You can monitor the operating status of the managed objects and drill down for details. [Figure 19-2](#) shows a sample of the Device Monitor windows, which can display objects sorted as follows:

- **Service**—Displays objects sorted by the following service types: Real Server, Virtual Servers, VIP Answers, and DNS Rules.
- **Device**—Displays objects sorted by the following device types: ACE Modules, ACE Appliance, CSS, CSM, and GSS.

Figure 19-2 ANM Mobile Monitor Windows: Service Type and Device Type

Each object type includes three color-coded status function buttons that list the number of object types in each of the following operational states:

- Up (green)—Objects in service.
- Down (red)—Objects out of service.
- Unknown (yellow)—Object operating state cannot be determined by ANM.

The status function buttons allow you to display only the objects of the specified object type and operating state.

[Table 19-3](#) lists the details that you can view for each object type when you set the monitor display to Service.

Table 19-3 Managed Object Details

Object Type	Attribute
Virtual Server	Name
	Policy Map
	IP address, protocol, and port number
	Device
	Admin status
	Operating status
	Server Farm
	Current Connections
	Connections per second
	Dropped Connections per second
	Dynamic Workload Scaling (DWS)
	Stat Age

Table 19-3 *Managed Object Details (continued)*

Object Type	Attribute
Real Server	Name
	IP address
	Port
	Server Farm
	Device
	Admin status
	Operating status
	Weight
	Current connections
	Connections per second
	Dropped connections per second
	Virtual Machine (indicates if the real server is a virtual machine)
	Locality (OTV)
	Statistics Age
VIP Answer	SLB name
	VIP answer name
	IP address
	Config state
	PGSSM operation status
	Answer group
	Location
	PGSSM time
DNS Rule	Device name
	DNS Rule name
	Source name
	Domains
	Config state
	Answer group
	Owner
	PGSSM time

Guidelines and Restrictions

ANM Mobile is limited to approximately 7 KB of memory for the monitored objects list. If you have more than 100 monitored objects, ANM Mobile may exhibit performance issues. To avoid performance issues associated with a large number of monitored objects, do the following:

- Do not drill down to the detail list screen from the Monitor home page (see [Figure 19-2](#)). To display the detail information or the health status of a monitored object, use the search function from the Monitor home page by clicking the search icon (magnifying glass) and entering the object identifier.

If needed, refine your search criteria until the number of objects displayed is reduced to less than 100.

When in the search window, limit your use of the drill down (>) option, which can also create performance issues.

- For monitored objects that you track frequently, add them to your list of Favorites and access their information from there (see the [“Using the Favorites Feature”](#) section on page 19-6).

Procedure

Step 1 Click **Monitor**.

The View All window appears.

Step 2 Click one of the color-coded function buttons associated with an object type to drill down and display a list of objects associated with an object type and operating state (up, down, or unknown).

The specified object type details windows appears, displaying a list of the objects in the chosen operating state (up, down, or unknown).

Step 3 Do any of the following:

- Click a specific object from the list to display details about the object. The information that displays varies depending on the object type (see [Table 19-3](#)).

From the object details window, you can do the following:

- Activate, suspend, or change the weight of an object (see the [“Modifying an Object’s Operating State or Weight”](#) section on page 19-10).
 - Display a real time chart of monitored statistics (see the [“Displaying Real Time Charts”](#) section on page 19-12).
 - Click the **Search** icon to open the search text box and search for a specific object. Begin entering the search criteria. Object matches display and become more specific as you narrow the search by entering additional search criteria.
 - Click the **Refresh** icon to refresh the display.
 - Click **Back** to return to the object details window.
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Related Topics

- [Modifying an Object’s Operating State or Weight, page 19-10](#)
- [Displaying Real Time Charts, page 19-12](#)

Modifying an Object’s Operating State or Weight

You can use ANM Mobile to activate or suspend a real server, virtual server, VIP answer or DNS rule. For real servers only, you can change the weight assigned to the server.

Procedure

Step 1 Use one of the following methods to display the details window of a specific object:

- Choose **Monitor > Service**, choose a specific device type, and drill down (>) to the object details window.
- Click **Favorites**, choose a specific favorite and drill down (>) to the object details window.
- Click the **Search** icon (magnifying glass), enter the device search criteria, choose the device, and drill down (>) to the object details window.
- Click **Alarm**, choose a specific device type and drill down (>) to the object details window.

Step 2 From the object details window, do one of the following:

- Click **Activate** to activate an object that is currently suspended. The Activate dialog box appears. In the dialog box, do the following:
 - a. Enter a reason for the change.
 - b. Click **Deploy** to execute the change or **Cancel** to ignore the change.
- Click **Suspend** to suspend an object currently activated. The Suspend dialog box appears. In the dialog box, do the following:
 - a. Enter a reason for the change.
 - b. Choose one of the following types of suspend operations from the drop-down list:
 - **Suspend**—Takes the object out of service.
For a real server, the ACE resets all non-TCP connections to the server. For TCP connections, existing flows are allowed to complete before the ACE takes the real server out of service. No new connections are allowed. The ACE resets all Secure Sockets Layer (SSL) connections to the real server.
 - **Graceful**—When executed on a primary server, the ACE gracefully shuts down the server with sticky connections as follows:
 - Tears down existing non-TCP connections to the server.
 - Allows current TCP connections to complete.
 - Allows new sticky connections for existing server connections that match entries in the sticky database.
 - Load balances all new connections (other than the matching sticky connections mentioned above) to the other servers in the server farm.
 - When executed on a backup real server, the ACE places the backup server in service standby mode.
 - **Suspend and Clear Connections**—The ACE performs the tasks described for Suspend and clears the existing connections to this server.
 - c. Click **Deploy** to execute the change or **Cancel** to ignore the change.
- (Real server only) Click **Change Weight** to change weight assigned to a real server. The Change Weight dialog box appears. In the dialog box, do the following:
 - a. Enter a reason for the change.
 - b. Enter the new weight value. The valid range is 1 to 100.
 - c. Click **Deploy** to execute the change or **Cancel** to ignore the change.

The activity indicator appears for 30 seconds until it is determined that the operation succeeded, failed, or timed out. If the operation is successful, the object detail window is reloaded with the latest data and updated timestamp.

Displaying Real Time Charts

You can display real time statistical information about the connections of a real server or a virtual server. Information that you can display in chart form are current connections, connections per second, or dropped connections per second.

Guidelines and Restrictions

The chart never displays more than 5 minutes worth of statistical information.

Procedure

- Step 1** Use one of the following methods to display the details window of a specific real server or a virtual server:
- Choose **Monitor > Service**, choose a specific device type, and drill down (>) to the object details window.
 - Click **Favorites**, choose a specific favorite and drill down (>) to the object details window.
 - Click the **Search** icon (magnifying glass), enter the device search criteria, choose the device, and drill down (>) to the object details window.
 - Click **Alarm**, choose a specific device type and drill down (>) to the object details window.
- Step 2** From the details window, click the **Chart** icon located next to the statistic to chart.
The chart window appears.
- Step 3** Do the following:
- Click the **Refresh** icon to refresh the display.
 - To adjust the polling time, click **Settings** (see the [“Using the ANM Mobile Setting Feature”](#) section on page 19-12). The default polling time is 10 seconds.
 - Click **Back** to return to the object details window.
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Using the ANM Mobile Setting Feature

The ANM Mobile Setting feature allows you to do the following:

- Display the ANM IP address.
- Display ANM Mobile software information.
- Adjust the connection timeout value and polling interval.
- Enable or disable push notifications, sound, and alerts.

Procedure

- Step 1** From the All Devices or Favorites window, click **Settings**.
The Settings window appears.
- Step 2** From the Settings window, do the following:
- Click **About** to do the following:

- Display details about the version of ANM Mobile that you are using and the version of ANM software being used by the ANM server or ANM Virtual Appliance that you are accessing.
- Click **UDID** to display the unique device ID (UDID).
- Click **Advanced** to access the Advanced Details window and modify the following settings:
 - Connection Timeout—Sets the amount of idle time (in seconds) at which the connection closes. Choose 10, 30 (default), or 60.
 - Polling Interval—Sets the frequency (in seconds) at which real time information, such as graph information, is updated. Choose 5, 10 (default), or 30.
- Click the **ON/OFF** toggle buttons to enable or disable the following features:
 - Push Notifications—When enabled (ON), allows your mobile device to receive alarm notifications that ANM issues to a push notification service. For more information, see the [“Setting Up and Viewing Mobile Device Alarm Notifications”](#) section on page 19-13.
 - Sound—(Android only) When enabled (ON), your mobile device sounds an alert to let you know that it received an alarm notification from ANM.



Note To modify this setting on an iPod, see the [“Managing iPod Alarm Notification Sound and Alerts”](#) section on page 19-15.

- Alert—(Android only) When enabled (ON), your mobile device displays an alert message to let you know that it received an alarm notification from ANM.



Note To modify this setting on an iPod, see the [“Managing iPod Alarm Notification Sound and Alerts”](#) section on page 19-15.

Setting Up and Viewing Mobile Device Alarm Notifications



Note

The alarm notifications feature requires the ANM Mobile app on your mobile device.

You can receive alarm notifications that ANM sends to your mobile device (see [Figure 19-1](#)) when specific virtual context alarm thresholds are exceeded. ANM Mobile app users can enable or disable the alarm notification feature, which allows them to choose when to receive alarm notifications from ANM. ANM administrators can enable or disable the alarm notification feature, which allows them to choose when to transmit alarm notifications to the ANM Mobile app.

Supported real and virtual server alarm conditions are as follows:

- Current connections—ANM can send an alarm notification when the number of active connections to a server exceeds a specific amount.
- Operational state—ANM can send an alarm when a server’s operational state changes.

Guidelines and Restrictions

This topics includes the following guidelines and restrictions:

- The ANM objects that you select for alarm notifications when configuring an alarm threshold group must match objects that you select as favorites on ANM Mobile. Alarm threshold groups are configured at the virtual context level; therefore, to receive alarm notifications for an object that you specify as a favorite, the object favorite must be part of the virtual context in the threshold group.
- ANM does not issue push alarm notifications to a mobile device if remote authorization is used to authorize the device. This is true even when the local fall-back feature is enabled for user authorization.
- ANM Mobile displays only the alarms for the devices that are in the domain definition of the RBAC user logged into ANM Mobile.
- From ANM, you can do the following:
 - Enable or disable the alarm notification feature, which allows you to choose when to transmit alarm notifications to the ANM Mobile app.
 - Send a test alarm notification to a mobile device. ANM administrators can enable or disable the alarm notification feature, which allows them to choose when to transmit alarm notifications to the ANM Mobile app.

For more information, see the [“Displaying Mobile Device Notifications and Testing the Notification Channel” section on page 18-69](#).

Prerequisites

The prerequisites for this topic are as follows:

- ANM prerequisites:
 - ANM software Version 5.1 or later.
 - Alarm threshold groups are configured on ANM for mobile device alarm notifications.
For details about creating an alarm threshold group, see the [“Configuring Alarm Notifications on ANM” section on page 17-56](#)
- Mobile device prerequisites:
 - The ANM Mobile app is loaded on your supported mobile device.
 - ANM objects specified as favorites on your mobile device match the objects in an ANM alarm threshold group. For example, real or virtual servers.

For information about specifying favorites on your mobile device, see the [“Using the Favorites Feature” section on page 19-6](#).

This section includes the following topics:

- [Enabling Alarm Notifications on ANM Mobile, page 19-14](#)
- [Viewing Alarm Notifications from ANM Mobile, page 19-15](#)

Enabling Alarm Notifications on ANM Mobile

From your mobile device, you can specify whether to receive or not receive alarm notifications from ANM by using the Setting button to modify the ANM Mobile operational settings. For details about using this button, see the [“Using the ANM Mobile Setting Feature” section on page 19-12](#).

Related Topics

- [Setting Up and Viewing Mobile Device Alarm Notifications, page 19-13](#)
- [Viewing Alarm Notifications from ANM Mobile, page 19-15](#)

- [Managing iPod Alarm Notification Sound and Alerts, page 19-15](#)
- [Using the ANM Mobile Setting Feature, page 19-12](#)

Viewing Alarm Notifications from ANM Mobile

From your mobile device, you can view alarm notifications that ANM sends to the device. For each notification, you can drill down to view the device details.

Procedure

- Step 1** Click **Alarms**.
- The Alarm Summary window appears, displaying the list of received alarms.
- Step 2** (Optional) Click the drill-down icon (>) associated with a specific alarm to display details about the alarm.
- The Alarm Detail window appears, displaying the following information:
- Timestamp
 - Severity
 - Device
 - Service
 - Threshold Group
 - Category
 - Stat/Value
- Step 3** (Optional) From the Service category, click the drill-down (>) icon to display the object Details window related to the real or virtual server associated with the alarm notification.
- Step 4** (Optional) From the object Details window, do any of the following:
- Click **View Graph** to display the graphs associated the following real server and virtual server items: Current Connections, Connections/Sec, or Dropped Connection/Sec. For more information, see the [“Displaying Real Time Charts” section on page 19-12](#).
 - Click **Activate**, **Suspend**, or **Change Weight** to change the object’s operating state or weight. For more information, see the [“Modifying an Object’s Operating State or Weight” section on page 19-10](#).
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Related Topics

- [Setting Up and Viewing Mobile Device Alarm Notifications, page 19-13](#)
- [Enabling Alarm Notifications on ANM Mobile, page 19-14](#)
- [Managing iPod Alarm Notification Sound and Alerts, page 19-15](#)
- [Using the ANM Mobile Setting Feature, page 19-12](#)

Managing iPod Alarm Notification Sound and Alerts

This procedure show how to manage the alarm notification sound and alert features on your iPod that let you know when an alarm notification is received from ANM.

**Note**

To manage the alarm notification sound and alert features on your Android device, see the [“Using the ANM Mobile Setting Feature”](#) section on page 19-12.

Procedure

Step 1 From your iPod Setting window, choose **Notifications > ANM Mobile** to drill down to the ANM Mobile settings.

The Notifications, ANM Mobile window appears.

Step 2 From the Notifications, ANM Mobile window, click the **ON/OFF** toggle buttons to enable or disable the following features:

- Sound—When enabled (ON), your iPod sounds an alert to let you know that it received an alarm notification from ANM.
 - Alert—When enabled (ON), your iPod displays an alert message to let you know that it received an alarm notification from ANM.
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Related Topics

- [Enabling Alarm Notifications on ANM Mobile, page 19-14](#)
- [Viewing Alarm Notifications from ANM Mobile, page 19-15](#)