



Administering Statistical Data Collection

This chapter describes how to administer Statistical Data Collection in the Cisco Data Center Network Manager for LAN (DCNM-LAN).

This chapter includes the following sections:

- [Information About Statistical Data Collection, page 24-1](#)
- [Licensing Requirements for Statistical Data Collection, page 24-2](#)
- [Prerequisites for Statistical Data Collection, page 24-2](#)
- [Guidelines and Limitations for Statistical Data Collection, page 24-3](#)
- [Configuring Statistical Data Collection, page 24-3](#)
- [Viewing the Status of Statistical Data Collectors, page 24-9](#)
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Information About Statistical Data Collection

You can use the Statistical Data Collection feature to control the statistics monitoring processes that you have created for one of the many device configuration features that support statistics.

When you choose Statistical Data Collection on the Feature Selector pane, the Contents pane shows information about each statistical collection and allows you to control them. You can also use this feature to purge old data from the statistical database.

You can configure the length of time that Cisco Data Center Network Manager for LAN (DCNM-LAN) waits before retrieving statistical data from devices that it is monitoring. By default, DCNM-LAN retrieves statistical data from monitored devices every 30 seconds. You can increase the length of time to a maximum of 4 minutes. For more information, see the [“Configuring Monitoring Preferences” section on page 13-16](#).

This section includes the following topics:

- [Automatic and Manual Purging of Statistical Data, page 24-2](#)
- [Virtualization Support, page 24-2](#)

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Automatic and Manual Purging of Statistical Data

You can use the Statistical Data Collection feature to delete unwanted statistical data. DCNM-LAN supports automatic purging of statistical data. You can configure the following aspects of automatic statistical data purging:

- Days of the week and time of day that automatic purging occurs.
- Whether DCNM-LAN determines which statistical data to purge by the age of the data or by a maximum number of database entries.
- Whether DCNM-LAN deletes the statistical data entries that it purges or consolidates them into one entry.

You can also manually purge statistical data.

Virtualization Support

DCNM-LAN treats each virtual device context (VDC) on a Cisco NX-OS device as a separate device. Statistical data collections contain statistics from objects within devices.

Licensing Requirements for Statistical Data Collection

The following table shows the licensing requirements for this feature:

| Product | License Requirement |
|----------------|---|
| Cisco DCNM-LAN | <p>Real-time monitoring requires no license.</p> <p>Cisco DCNM-LAN requires a LAN Enterprise license for the following features:</p> <ul style="list-style-type: none"> • Maintaining a history of statistical data • Using overview charts <p>For information about obtaining and installing a Cisco DCNM LAN Enterprise license, see the <i>Cisco DCNM Installation and Licensing Guide, Release 5.x</i>.</p> |

Prerequisites for Statistical Data Collection

Statistical data collection has the following prerequisites:

- The DCNM-LAN server must be able to connect to the devices.
- The system clocks for the DCNM-LAN server and DCNM-LAN client must be synchronized. If the system clocks are not synchronized, scheduling tasks for data collection may start or end at incorrect times.
- The Cisco NX-OS device must be running a supported version of Cisco NX-OS.
- The Cisco NX-OS device must have the minimal configuration that is required to enable device discovery to succeed. For more information, see the [“Verifying the Discovery Readiness of a Cisco NX-OS Device”](#) section on page 15-7.

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Guidelines and Limitations for Statistical Data Collection

The Statistical Data Collection feature has the following configuration guidelines and limitations:

- Collections are created by starting monitoring for a new chart. For more information, see the [“Starting Statistical Monitoring for a Chart”](#) section on page 13-12.
- For the Statistical Data Collection feature, the DCNM-LAN client does not automatically update the information shown in the Summary pane. To ensure that you are viewing current information, from the menu bar, choose **View > Refresh**.
- When you start statistical monitoring for one or more charts and then close the DCNM-LAN client, a dialog box prompts you to decide whether to stop the collections or let them run. We recommend that you stop any unnecessary collections when you log out of the DCNM-LAN client. This practice conserves database space and decreases the server load.
- We recommend that you configure automatic purging of statistical data to ensure that the DCNM-LAN database size does not grow too large.

Configuring Statistical Data Collection

This section includes the following topics:

- [Starting and Stopping Statistical Data Collection](#), page 24-3
- [Using Modes in Statistics Charts](#), page 24-4
- [Deleting Statistical Data from a Collection](#), page 24-5
- [Deleting a Collection](#), page 24-5
- [Deleting Data from the Statistics Database](#), page 24-6
- [Enabling and Disabling Automatic Statistical Data Purging](#), page 24-6
- [Configuring Automatic Statistical Data Purge Settings](#), page 24-7
- [Purging Statistical Data Now](#), page 24-8

Starting and Stopping Statistical Data Collection

You can use the Statistical Data Collection feature to start and stop a statistical data collection process. Each collection process represents a statistical monitoring process that you created by starting monitoring for a device configuration feature.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**.
- A table of statistical data collectors appears in the Contents pane. Each row corresponds to a collector for a particular device. The Status field displays whether the collector is running or is stopped.
- Step 2** Click the collector that you want to start or stop.
- Step 3** Do one of the following:
- To start a collector, from the menu bar, choose **Actions > Start Collection**. The Status field changes to Running.

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- To stop a collector, from the menu bar, choose **Actions > Stop Collection**. The Status field changes to Stopped.

You do not need to save your changes.

Using Modes in Statistics Charts

You use statistics charts to toggle between the delta mode and the rate mode. [Table 24-1](#) lists the features that contain statistics charts and delta mode/rate mode toggle button.

Table 24-1 Features Containing Statistics Charts and Delta Mode/Rate Mode Toggle Button

| Path | Feature |
|------------------------------|-----------------------|
| Interfaces > Physical | Ethernet Interface |
| Interfaces > Physical | Management Interface |
| Interfaces > Logical | Loopback Interface |
| Interfaces > Logical | Port Channel |
| Interfaces > Logical | vPC |
| Switching | VLAN |
| Switching > Spanning Tree | Rapid PVST+ |
| Switching > Spanning Tree | MST |
| Switching > Fabricpath | ISIS Process |
| Switching > Layer 2 Security | Port Security |
| Switching > Layer 2 Security | ARP Inspection |
| Switching > Layer 2 Security | DHCP Snooping |
| Switching > Layer 2 Security | Traffic Storm Control |
| Switching > Layer 2 Security | IGMP Snooping |
| Security | DOT1x |
| Security > Access Control | IPv4 ACL |
| Security > Access Control | IPv6 ACL |
| Security > Access Control | MAC ACL |
| Security > AAA | Server Groups |
| Inventory | Virtual Switch |

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose the appropriate feature. For example, if you wanted to see statistics for the Ethernet feature, choose **Interfaces > Physical > Ethernet**.
The available devices appear in the Summary pane.
- Step 2** From the Summary pane, double-click the device.
- Step 3** From the Summary pane, double-click **Slots**.

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- Step 4** Click the interface.
 - Step 5** From the Details pane, choose the **Statistics** tab.
 - Step 6** In the toolbar, click **New Chart** and then from the menu bar drop-down list, choose the chart that you want to view. For example, if you wanted to see statistics for traffic, choose **Traffic Statistics Chart**.
 - Step 7** (Optional) To toggle between the statistics mode and the rate mode, click the button to the right of the Select Frequency drop-down list.
-

Deleting Statistical Data from a Collection

You can delete statistical data from a collection. This feature allows you to delete all the data from a collection without affecting data from other collections and without deleting the collection itself. Each collection process represents a statistical monitoring process that you created by starting monitoring for a device configuration feature.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**.
A table of statistical data collectors appears in the Contents pane. Each row corresponds to a collector for a particular device. Devices are listed alphabetically. The Status field displays whether the collector is running or is stopped.
 - Step 2** Right-click the collection.
 - Step 3** From the menu bar, choose **Actions > Delete Statistical Data**.
DCNM-LAN deletes all statistical data from the collection.
-

Deleting a Collection

You can delete a collection of statistical data from a specific device. Each collection process represents a statistical monitoring process that you created by starting monitoring for a device configuration feature.



Note

If you want to delete all data from a collections rather than deleting the collection itself, perform the steps in the [“Deleting Statistical Data from a Collection”](#) section on page 24-5.

BEFORE YOU BEGIN

Determine which collection of data you want to delete.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**.

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A table of statistical data collectors appears in the Contents pane. Devices are listed alphabetically. Each row corresponds to a collection of statistical data for a particular device.

- Step 2** Click the collection of data that you want to delete.
- Step 3** From the menu bar, choose **Actions > Delete Collection**.
The collection is deleted.
You do not need to save your changes.
-

Deleting Data from the Statistics Database

You can delete statistical data from the statistics database.



Note

If you want to delete all data from a specific collection rather than deleting old data from all collections, perform the steps in the [“Deleting a Collection” section on page 24-5](#).

BEFORE YOU BEGIN

Determine the date and time of the newest statistical data that you want to delete. When you follow the steps in this procedure, DCNM-LAN deletes all statistics that are older than the date and time that you select.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**.
The Statistics Database area appears in the Contents pane, below the table of statistical data collectors.
- Step 2** From the Delete statistical data older than drop-down list, select the date and time of the newest statistics that you want to delete and click **OK**.
- Step 3** Click **Delete**.
DCNM-LAN deletes all statistics older than the date and time that you specified.
-

Enabling and Disabling Automatic Statistical Data Purging

You can enable or disable the automatic purging of statistical data from the DCNM-LAN statistics database.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**.
The Statistical Database Administration tab appears in the Details pane, below the table of statistical data collectors.
- Step 2** Under Auto Purge Settings, do one of the following:

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- To enable automatic statistical data purging, check **Enable Auto Purge**.
- To disable automatic statistical data purging, uncheck **Enable Auto Purge**.

Step 3 From the menu bar, choose **File > Deploy** to save your changes to the DCNM-LAN server.

Configuring Automatic Statistical Data Purge Settings

You can configure when automatic statistical data purging occurs and the criteria that DCNM-LAN uses to determine which statistical data to purge.

BEFORE YOU BEGIN

Determine when you want automatic statistical data purging to occur. A good recommendation is that you configure automatic statistical data purging to occur when DCNM-LAN usage is low.

If you perform backups of your DCNM-LAN databases, consider scheduling automatic statistical data purging after database backups have occurred, to ensure that you retain a record of all statistical data.

Determine what criteria you want DCNM-LAN to use to determine which statistical data to purge. The two criteria available are as follows:

- Age of statistical data—DCNM-LAN can purge all statistical data entries that are older than a specific number of days, weeks, or months.
- Number of statistical data entries in the database—When the number of statistical data entries in the database exceeds the maximum number that you specify, DCNM-LAN can purge the oldest statistical data entries first until the maximum number is not exceeded.

If you enable both criteria, DCNM-LAN applies them independently of each other.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**. The Statistical Database Administration tab appears in the Details pane, below the table of statistical data collectors.
- Step 2** Under Purge Threshold, configure the criteria that DCNM-LAN uses to determine which statistical data to purge. You can configure either or both of the criteria using the information in [Table 24-1](#).

Table 24-2 Purge Criteria

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| Purge Criteria | How to Configure |
|--|---|
| Age of statistical data | <ol style="list-style-type: none"> 1. Check Data older than. 2. From the first drop-down list, choose the number of days, weeks, or months. 3. From the second drop-down list, choose Days, Weeks, or Months, as needed. |
| Number of statistical data entries in the database | <ol style="list-style-type: none"> 1. Check Stats. Entries Exceed(0-2147483647). 2. In the box, enter the maximum number of entries that you want to allow in the statistical database. |

- Step 3** Configure the action that you want DCNM-LAN to take on statistical database entries that meet the purge criteria. You can choose one of the following:
- **Delete**—DCNM-LAN deletes the database entries that meet the purge criteria.
 - **Consolidate**—DCNM-LAN merges all statistical data entries that meet the purge criteria into one entry
- Step 4** Under Auto Purge Settings, follow these steps to configure when you want automatic purging to occur:
- a. Check the days-of-the-week check boxes to specify which days of the week that you want automatic purging to occur.
 - b. Use the **Run at** box to configure the exact time on the specified days that you want automatic statistical data purging to occur.
- Step 5** (Optional) If you want to enable automatic statistical data purging, check **Enable Auto Purge**.
- Step 6** From the menu bar, choose **File > Deploy** to save your changes to the DCNM-LAN server.

Purging Statistical Data Now

You can purge statistical data on demand, using the automatic statistical data purge settings to determine which statistical data are purged.



Tip

If you want to delete statistical data on demand, based on the exact age of the statistical data entries, see the [“Deleting Data from the Statistics Database”](#) section on page 24-6.

BEFORE YOU BEGIN

Ensure that the automatic statistical data purge settings are configured as needed. For more information, see the [“Configuring Automatic Statistical Data Purge Settings”](#) section on page 24-7.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**.

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The Statistical Database Administration tab appears in the Details pane, below the table of statistical data collectors.

Step 2 Under Purge, click **Purge Now**.

DCNM-LAN deletes statistical data, using the automatic statistical data purge settings to determine which statistical data entries to purge.

Viewing the Status of Statistical Data Collectors

To view the status of statistical data collectors, from the Feature Selector pane, choose **DCNM Server Administration > Statistical Data Collection**.

Collector status and other information appear in the Statistical Data Collectors area in the Contents pane. For information about the fields that appear, see the [“Field Descriptions for Statistical Data Collection” section on page 24-9](#).

Field Descriptions for Statistical Data Collection

This section includes the following field descriptions for the Statistical Data Collection feature:

- [Summary Pane, page 24-9](#)
- [Statistical Database Administration Tab, page 24-10](#)

Summary Pane

Table 24-3 Summary Pane

| Field | Description |
|------------------------------------|--|
| Statistical Data Collectors | |
| Last Refresh Time | <i>Display only.</i> Date and time that the DCNM-LAN client updated information shown on the Content pane. |
| Collector ID | <i>Display only.</i> Name and IP address of the device for the corresponding poller. |
| Owner | <i>Display only.</i> Username of the DCNM-LAN user who started monitoring for the chart that corresponds to the collection. |
| Device | <i>Display only.</i> Name and IP address of the device that is providing the statistical data in the collection. |
| Objects | <p><i>Display only.</i> Description of the entity on the device that is providing the statistical data in the collection.</p> <p>For example, if the collection has statistical data for a rule that is assigned the sequence number 10 and is in an IPv4 ACL named acl-01, this field displays acl-01,seqNo=10.</p> <p>If the collection has data for the Ethernet 1/5 port, this field displays Ethernet1/5.</p> |

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Table 24-3 Summary Pane (continued)

| Field | Description |
|------------------------------------|--|
| Collected Statistics | <i>Display only.</i> Type of statistical data in the collection. For example, if the collection has statistical data for a rule in an IPv4 ACL, this field displays IpAclAceMatchStatistics. |
| Status | <i>Display only.</i> Whether the collector is started or stopped. |
| Statistics Database | |
| Delete statistical data older than | Date and time of the newest statistical data to be deleted from the statistics database. There is no default value for this field. |

Statistical Database Administration Tab

Table 24-4 Statistical Database Administration Tab

| Field | Description |
|------------------------------------|---|
| Delete statistical data older than | Date and time of the newest statistical data to be deleted from the statistics database. There is no default value for this field. |
| Purge | |
| Action | Whether automatic statistical data purging deletes or consolidates statistical data entries that trigger the purge threshold. Consolidation merges all statistical data entries that trigger the purge threshold into one entry. |
| Purge Threshold | |
| Data older than | Whether, during automatic statistical data purging, DCNM-LAN deletes statistics entries that are older than the age specified in the drop-down lists located to the right of this check box. By default, this check box is unchecked. If you check the check box, the default age is 1 day. |
| Stat. Entries Exceed | Whether, during automatic statistical data purging, DCNM-LAN deletes the oldest statistics entries until the number of entries equals the number in the box located to the right of this check box. By default, this check box is unchecked. If you check the check box, the default number of event is 25,000. |
| Auto Purge Settings | |
| Enable Auto Purge | Whether automatic purging of statistical data is enabled. By default, this check box is disabled. |
| Run on | Days of the week that automatic purging of statistical data occurs. By default, none of the check boxes are checked. If you check the Daily check box, the check boxes for the individual days of the week become unavailable. |
| Run at | Time of day that automatic purging of statistical data occurs, on the days of the week that automatic purging is enabled. |

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Additional References

For additional information related to administering statistical data collection, see the following sections:

- [Related Documents, page 24-11](#)
- [Standards, page 24-11](#)

Related Documents

| Related Topic | Document Title |
|------------------|--|
| Device discovery | Chapter 15, “Administering Device Discovery” |

Standards

| Standards | Title |
|---|-------|
| No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature. | — |

Feature History for Statistical Data Collection

[Table 24-5](#) lists the release history for this feature.

Table 24-5 *Feature History for Statistical Data Collection*

| Feature Name | Releases | Feature Information |
|-----------------------------|----------|-----------------------------|
| Statistical Data Collection | 5.0(2) | No change from Release 4.2. |

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