



CHAPTER 10

Using NetShow Commands

Network show (NetShow) commands represent a set of read-only commands. These are primarily, **show** commands that you can run on devices that are managed in LMS.

You can specify the commands that you want to group together and then run these commands on one or many devices. The output is displayed in a browser window.

NetShow has the following features:

- Network Administrators can assign Command Sets to other users.
- Network Administrators and Network Operators (if permitted) can execute the custom commands. This allows them to run a command against multiple devices.
- Support for standard and non-standard Cisco devices.
- Simplified new device support.
- No device limit.
- Integration with the Output Interpreter tool.

LMS ships with system-defined NetShow Command Sets. You cannot edit or delete any of these Command Sets. See [System-Defined Command Sets](#) for the list of system-defined Command Sets in LMS.

You can run NetShow commands either from the Graphical User Interface (GUI) or from the Command Line Interface (CLI). NetShow allows you to add system-defined as well as adhoc commands within Command Sets and run them.

You must have the required privileges to perform these functions. See [Viewing the Permission Report](#) for the tasks that a user in a particular role can perform.

The major features of NetShow are:

- [NetShow Job Browser](#)

The NetShow job browser allows you to create, edit, copy, retry, stop, or delete NetShow jobs and view the details of the jobs. You can run a job immediately or schedule it to run at a specified time, once, or periodically.

- [Archiving NetShow Job Output](#)

You can access the stored output that is created from a NetShow job through the Output Archive.

- [Command Sets](#)
The Command Set administration task enables you to create, edit, or delete user-defined Command Sets. You can also view the details of existing Command Sets.
- [Assigning Command Sets](#)
Allows you to assign Command Sets to users. You can assign one or more Command Sets and Custom Command Execution privilege to one or more users.

This section explains:

- [Working With NetShow Jobs](#)
- [NetShow Job Browser](#)
- [Archiving NetShow Job Output](#)
- [Command Sets](#)
- [Managing Command Sets](#)
- [Assigning Command Sets](#)
- [Launching show Commands From Device Center](#)
- [Using cwcli netshow Command](#)

Working With NetShow Jobs

The NetShow Jobs feature allows the user with appropriate privileges to perform tasks such as viewing job details, creating jobs, editing jobs, copying jobs, retrying failed jobs, stopping jobs, and deleting jobs.

For a list of NetShow Job tasks and the required user roles, use the Permission Report function (**Reports > System > Users > Permission**). See [Viewing the Permission Report](#) for more details.

Viewing the Permission Report

The Permission Report displays information on roles and tasks associated with the roles. It specifies the tasks that a user in a particular role can perform.

To use Cisco Prime LMS, you must have a valid login, which is a combination of a username and a password.

When you are assigned a username and password, you are also assigned to one or more of these roles:

- **Help Desk** (default role for all users) —Can access network status information only. Can access persisted data on the system but cannot perform any action on a device or schedule a job which will reach the network.
- **Approver**— Can approve all tasks.
- **Network Operator**— Can perform all Help Desk tasks. Can perform tasks related to network data collection but not any task that requires write access on the network.
- **Network Administrator** —Can perform all Network Operator tasks. Can perform tasks that result in a network configuration change.
- **System Administrator** —Can perform all Cisco Prime LMS system administration tasks.

These roles determine which Cisco Prime LMS applications, tools, and product features you are allowed to access.

Roles are not set up hierarchically, with each role including all the privileges of the corresponding role. Instead, these roles provide access privileges based on user needs.

To view the roles and corresponding tasks that these roles can perform in NetShow:

Step 1 Select **Reports > System > Users > Permission > Generate Report**.

The Permission Report appears.

Step 2 Check the Permission Report to verify which of the NetShow tasks each user role can perform.

The following table lists the NetShow tasks that each user role can perform.

Task Name	System Administrator	Network Administrator	Network Operator	Approver	Help Desk
Assign Command Sets to Users	No	Yes	No	No	No
Create, Edit, Cancel, Delete Jobs	No	Yes	Yes	No	No
Create, Edit, Delete Command Sets	No	Yes	Yes	No	No
Job Browser	No	Yes	Yes	Yes	No
View Command Sets	No	Yes	Yes	No	No

By default, System-defined Command Sets are assigned to Network Administrators and Network Operators.

Only Network Administrators can assign Command Sets to Network Operators. They can also view Command Sets created by all users.

Network Operators can create and view Command Sets for themselves. These Command Sets will be automatically assigned to them. However, they cannot view Command Sets created by other Network Operators.

NetShow Job Browser

The NetShow Job Browser enables you to view the details of all NetShow Jobs. The job details that you can view are:

- Job ID
- Job status
- Job description
- Job owner
- Time the job is scheduled to run at
- Time the job completes
- Schedule type

To use the NetShow Job Browser:

Step 1 Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs**.

The NetShow Job Browser appears.

You can filter the jobs by any specified criteria using the Filter by drop-down list.

Step 2 Select your criteria and click **Filter**.

The fields in the NetShow Job Browser are:

Column	Description
Job ID	<p>Unique ID of the job. Click the hyperlink to view the Job details.</p> <p>For periodic jobs, the Job IDs are in the <i>number.x</i> format, which stands for the number of instances of that job.</p> <p>For example, 1003.3 indicates that the Job ID is 1003 and it is the third instance of that job.</p>
Status	<p>Status of the job—Scheduled, Successful, Failed, Cancelled, Running, Missed Start, Rejected, Approved, Waiting for Approval.</p> <p>The number, within brackets, next to Failed status indicates the count of the devices that had failed for that job. This count is displayed only if the status is Failed.</p> <p>For example, If the status displays Failed(5), then the count of devices that had failed amounts to 5.</p> <p>This count of failed devices is not displayed for jobs restored from LMS or lesser versions.</p>
Description	Description of the job.
Owner	Username of the job creator.
Scheduled At	Date and time at which the job was scheduled.
Completed At	Date and time at which the job was completed.
Schedule Type	<p>Type of job schedule—Immediate, Once, 6- Hourly, 12-Hourly, Daily, Weekly, Monthly, Last Day of the Month.</p> <p>For periodic jobs, the subsequent instances will run only after the earlier instance of the job has completed.</p> <p>For example, if you have scheduled a daily job at 10:00 a.m. on November 1, the next instance of this job will run at 10:00 a.m. on November 2, only if the earlier instance of the November 1 job has completed. If the 10.00 a.m. November 1 job has not completed before 10:00 a.m. November 2, the next job will start only at 10:00 a.m. on November 3.</p>
Refresh (Icon)	Click the icon to refresh the NetShow job browser.

The NetShow Job Browser allows you to perform the following tasks:

- [Viewing Job Details](#)
- [Masking Credentials](#)
- [Creating Jobs](#)

- [Editing Jobs](#)
- [Copying Jobs](#)
- [Retrying Jobs](#)
- [Stopping Jobs](#)
- [Deleting Jobs](#)

Viewing Job Details

From the NetShow Job Browser, you can select a job and view its details.

To view the Job Details:

Step 1 Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs**.

The NetShow Job Browser appears.

Step 2 Click the Job ID hyperlink of the job whose details you want to see.

The NetShow Job Details pop-up appears, displaying the day, date and time details in the header at the top of the page. The Job ID and the Status appear in the header of the Job Result.

By default, the NetShow Job Details page appears with the Job Details list tree in the left pane and the Work Order, in the right pane.

The Job Details list tree contains the following:

- Job Summary—Displays the summary of the job.
- Device Details—Displays the status of the devices.
- Work Order—Displays the work order of the job.

The following table describes the Job Details page.

Page/Folder	Description
Job Details	<p>Job Summary</p> <p>Click to display summary of completed job:</p> <ul style="list-style-type: none"> • Deploy Summary: <ul style="list-style-type: none"> – Status – Start Time – End Time • Job Messages <ul style="list-style-type: none"> – Pre-job Execution – Post-job Execution • Device Update <ul style="list-style-type: none"> – Successful – Failed – Not Attempted – Pending

Page/Folder	Description	
Device Details	Deployed Devices	<p>Contains detailed job results for each device in a table:</p> <ul style="list-style-type: none"> • Device—List of devices on which the job ran. • Status—Status of the device deployment (success or failure.) • Protocol Used—Protocol used for the device. • Message <ul style="list-style-type: none"> – If the job failed on the device, the reason for failure appears. – If the job succeeded on that device, the message <code>Deploy Successful</code> appears. <p>You can filter the devices by selecting a status and clicking Filter.</p> <p>This page displays the number of rows you have set for display in the Rows per page field. You can increase the rows up to 500 on each page. You can navigate between the pages of the report using the navigation icons at the right bottom of this table.</p> <p>Click the device name link to view the details of command sets and commands on the device. Go to Step 3 for details.</p> <p>You can view the output of all the commands for all the devices by clicking the Print button on the top right hand corner of the NetShow Job Details Page.</p>
	Pending Devices	Displays the list of devices that are awaiting command deployment.
	Not Attempted Devices	Displays the list of devices on which the job has not attempted to deploy commands.
Work Order	<p>Displays the Job Work Order. It contains the same information as the work order that appeared when the job was created.</p> <p>For retried jobs, job definitions are not updated. For such jobs the original job definitions are retained. See A sample Job Work Order is: for details.</p>	

You can click the page icon in the left pane to get the corresponding results in the right pane.

Step 3 Click the device name link in the Device Details table.

The NetShow Device Details pop-up page appears with the device name and commands in the left pane and the commands output in the right pane.

By default, the command output is a consolidated one for all the listed commands.

To convert the output into a printer-friendly format click the **Printer** button.

A printer-friendly format of the consolidated output for all commands appears.

Step 4 Select a command from the Device list tree in the left pane and click **Analyze Output** to analyze the output of the command.

You can mask the credentials shown in the output of **show** commands. See [Masking Credentials](#) for more details on masking credentials and [Viewing and Analyzing NetShow Output](#) for more details on viewing and analyzing NetShow Output.

The Cisco.com and Proxy Server Credential Profile dialog box appears.

- Step 5** Enter your Cisco.com username and password in the Cisco.com and Proxy Server Credential Profile dialog box
- If you enter Cisco.com credentials in this workflow, these credentials are valid only for that session. You are also prompted to enter your Proxy Username and Proxy Password only if a Proxy Server hostname/IP and port are configured in **Admin > System > Cisco.com Settings > Proxy Server Setup**
- Step 6** Click **OK** after entering the credential information.
- The credentials that you enter here will be used for the entire session.
- The Show Commands Output Interpreter Viewer appears, displaying the Report Name, date and time details in the header at the top of the report.
- To convert the output into a printer-friendly format click the **Printer** button.
- A printer-friendly format of the output of the selected command appears.
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Masking Credentials

You can mask the credentials shown in the output of **show** commands. If you want to mask the credentials of a particular command, you must specify the command in the `NMSROOT\MDC\tomcat\webapps\rme\WEB-INF\classes\com\cisco\nm\rmeng\config\netshow\NSCredCmds.properties` file.

In this file you can specify all the commands whose output should be processed to mask the credentials. We recommend that you enter the complete command in the file. For example, you must enter **show running-config**, not **show run**. This file contains some default commands like **show running-config**.

Creating Jobs

From the NetShow Job Browser, you can create new jobs to run command sets. You can create immediate as well as scheduled jobs.

To create a new job from the NetShow Job Browser:

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- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs**.
- The NetShow Job Browser appears.
- Step 2** Click **Create** in the NetShow Job Browser.
- The Select Devices and Command Sets window appears.
- Step 3** Select the device or Device Categories from the Device Selector pane in the Select Devices and Command Sets window.
- Step 4** Select the Command Set from the Command Set List pane in the Select Devices and Command Sets window.

- Step 5** Enter the custom commands in the Custom Commands text box.
You can enter multiple commands; separate these commands by commas.
The Custom Commands text box will be enabled only if you have custom commands execution privilege. See [Assigning Custom Command Execution Privilege](#) for more details on assigning custom command execution privilege.
- Step 6** Click **Next**.
The Set Schedule Options dialog box appears.
- Step 7** Enter the following information in the Set Schedule Options dialog box:

Field	Description
Scheduling	
Run Type	<p>The run type of the job. The Run Types could be any or all of these, depending on the type of the job:</p> <ul style="list-style-type: none"> • Immediate—Runs the job immediately. • Once—Once at the specified date and time. • 6 -hourly—Every 6 hours, starting from the specified time. • 12 -hourly—Every 12 hours, starting from the specified time. • Daily—Daily at the specified time. • Weekly—Weekly on the day of the week and at the specified time. • Monthly—Monthly on the day of the month and at the specified time. • Last day of Month—On the last day of the month at the specified time. <p>The subsequent instances of periodic jobs will run only after the earlier instance of the job is complete. For example, if you have scheduled a daily job at 10:00 a.m. on November 1, the next instance of this job will run at 10:00 a.m. on November 2 only if the earlier instance of the November 1 job has completed. If the 10:00 a.m. November 1 job has not completed before 10:00 a.m. November 2, the next job will start only at 10:00 a.m. on November 3.</p>
Date	Scheduled date and time of the job.
Job Information	
Job Description	Enter a description for the job. This is mandatory. You can enter only alphanumeric characters.
E-mail	<p>Enter the e-mail addresses to which the job sends messages at the beginning and at the end of the job. You can enter multiple e-mail addresses; separate these addresses by commas.</p> <p>Configure the SMTP server to send e-mails in the View / Edit System Preferences dialog box (Admin > System > System Preferences).</p> <p>We recommend that you configure the LMS Server E-mail ID in the View / Edit System Preferences dialog box (Admin > System > System Preferences). When the job starts or completes, an e-mail is sent with the LMS Server E-mail ID as the sender's address.</p>
Comments	Enter your comments for the job. Comments appear in the Job Work Order.
Job Options	

Field	Description
Enable Job Password	<ul style="list-style-type: none"> If you have enabled the Enable Job Password option and disabled the User Configurable option in the Job Policy dialog box (Admin > Network > Configuration Job Settings > Config Job Policies) enter the device login user name and password and Device Enable password. If you have enabled the Enable Job Password option and enabled the User Configurable option in the Job Policy dialog box (Admin > Network > Configuration Job Settings > Config Job Policies) either: <ul style="list-style-type: none"> Enter the device login user name and password and Device Enable password. The credentials are for contacting the device and not the Device Credential Repository credentials. <p>Or</p> <ul style="list-style-type: none"> Disable the Job Password option in the Set Schedule Options dialog box.
Execution	<p>Specify the order in which the job should run on the devices.</p> <ul style="list-style-type: none"> Parallel—Allows the job to run on multiple (up to five) devices at the same time. Sequential—Allows the job to run on only one device at a time.
MakerComments	This field appears if you have enabled Job Approval Policies for NetShow. Enter the Maker Comments. See Setting Up Job Approval for more details on enabling Job Approval Policies.
Maker E-mail	This field appears if you have enabled Job Approval Policies for NetShow. Enter the Maker E-mail address. This is mandatory. See Setting Up Job Approval for more details on enabling Job Approval Policies.

Step 8 Click **Next**.

The View Job Work Order page appears with the Job Work Order.

The Job Work Order contains general information on the job and on the:

- Job policies.
- Job approval details (if you have enabled job approval).
- Device details.
- Command Sets and the commands to be executed.

Step 9 Click **Finish** after you review the details of your job in the Job Work Order.

A message appears, *Job ID created successfully*.

The newly created job appears in the NetShow Job Browser.

If your job failed and you want to run the same job, click **Retry** and perform steps 7 through 9 above.

A sample Job Work Order is:

Work Order

Name: NetShow Job Work Order

Summary: General Info

Job Id: 1018

Owner: admin

Description: cli scheduled

Schedule Type: Run Once

Schedule Time: Sat Mar 19 00:00:00 IST 2005

Job Policies

E-mail Notification: Disabled

Execution Policy: Parallel

Job Password: Disabled

Job Approval Details

Job Approval: Disabled

Device Details

Device: 10.76.38.14

Applicable Commands:

Command Set Name: Show System Info

show version

show flash

show logging

ADHOC Commands

sh ver

Editing Jobs

You can select a job and edit the job properties from the NetShow Job Browser. You can edit only the scheduled jobs.

You can change device and command set selection as required and re-submit the job. In such cases the Job ID will remain the same.

To edit a job from the NetShow Job Browser:

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- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs**.
The NetShow Job Browser appears with a list of all jobs.
- Step 2** Select a scheduled job and click **Edit** in the NetShow Job Browser.
The Select Devices and Command Sets window appears with the current settings.
- Step 3** Select the device or Device Categories from the Device Selector pane in the Select Devices and Command Sets window.
- Step 4** Select the Command Set from the Command Set List pane in the Select Devices and Command Sets window.
- Step 5** Enter the custom commands in the Custom Commands text box.
You can enter multiple commands. Separate these commands by commas.
The Custom Commands text box will be enabled only if you have custom commands execution privilege. See [Assigning Custom Command Execution Privilege](#) for more details on assigning custom command execution privilege.
- Step 6** Click **Next**.
The Set Schedule Options dialog box appears.
- Step 7** Enter the following information in the Set Schedule Options dialog box:

Field	Description
Scheduling	
Run Type	<p>The run type of the job. The Run Types could be any or all of these, depending on the type of the job:</p> <ul style="list-style-type: none"> • Immediate—Runs the job immediately. • Once—Once at the specified date and time. • 6 -hourly—Every 6 hours, starting from the specified time. • 12 -hourly—Every 12 hours, starting from the specified time. • Daily—Daily at the specified time. • Weekly—Weekly on the day of the week and at the specified time. • Monthly—Monthly on the day of the month and at the specified time. • Last day of Month—On the last day of the month at the specified time. <p>The subsequent instances of periodic jobs will run only after the earlier instance of the job is complete. For example, if you have scheduled a daily job at 10:00 a.m. on November 1, the next instance of this job will run at 10:00 a.m. on November 2 only if the earlier instance of the November 1 job has completed. If the 10.00 a.m. November 1 job has not completed before 10:00 a.m. November 2, the next job will start only at 10:00 a.m. on November 3.</p>

Field	Description
Date	Scheduled date and time of the job.
Job Information	
Job Description	Enter a description for the job. This is mandatory. You can enter only alphanumeric characters.
E-mail	<p>Enter the e-mail addresses to which the job sends messages at the beginning and at the end of the job. You can enter multiple e-mail addresses; separate these addresses by commas.</p> <p>Configure the SMTP server to send e-mails in the View / Edit System Preferences dialog box (Admin > System > System Preferences).</p> <p>We recommend that you configure the LMS Server E-mail ID in the View / Edit System Preferences dialog box (Admin > System > System Preferences). When the job starts or completes, an e-mail is sent with the LMS Server E-mail ID as the sender's address.</p>
Comments	Enter your comments for the job. Comments appear in the Job Work Order.
Job Options	
Enable Job Password	<ul style="list-style-type: none"> If you have enabled the Enable Job Password option and disabled the User Configurable option in the Job Policy dialog box (Admin > Network > Configuration Job Settings > Config Job Policies) enter the device login user name and password and Device Enable password. If you have enabled the Enable Job Password option and enabled the User Configurable option in the Job Policy dialog box (Admin > Network > Configuration Job Settings > Config Job Policies) either: <ul style="list-style-type: none"> Enter the device login user name and password and Device Enable password. The credentials are for contacting the device and not the Device Credential Repository credentials. <p>Or</p> <ul style="list-style-type: none"> Disable the Job Password option in the Job Schedule and Options dialog box.
Execution	<p>Specify the order in which the job should run on the devices.</p> <ul style="list-style-type: none"> Parallel—Allows the job to run on multiple devices at the same time. You can run the job on five devices at a time. Sequential—Allows the job to run on only one device at a time.
MakerComments	This field appears if you have enabled Job Approval Policies for NetShow. Enter the Maker Comments. See Setting Up Job Approval for more details on enabling Job Approval Policies.
Maker E-mail	This field appears if you have enabled Job Approval Policies for NetShow. Enter the Maker E-mail address. This is mandatory. See Setting Up Job Approval for more details on enabling Job Approval Policies.

Step 8 Click **Next**.

The View Job Work Order page appears with the Job Work Order.

The Job Work Order contains general information on the job and on the:

- Job policies.
- Job approval details (if you have enabled job approval).
- Device details.
- Command Sets and the commands to be executed.

- Step 9** Click **Finish** after you review the details of your job in the Job Work Order.
A message appears, *Job ID edited successfully*.
The edited job appears in the NetShow Job Browser. This job retains the original Job ID.
See [A sample Job Work Order is](#): for details.
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Copying Jobs

From the Netshow Job Browser, you can select a job and create a copy of that job. You can either edit the job details or submit the same job. If you copy a job, it creates a new job with the current administrative settings.

To copy a job from the NetShow Job Browser:

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- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs**.
The NetShow Job Browser appears with a list of all jobs.
- Step 2** Select the job you want to create a copy and click **Copy**.
The Select Devices and Command Sets window appears with all your selections for the job that you are copying.
- Step 3** Click **Next**.
The Set Schedule Options dialog box appears.
- Step 4** Click **Next**.
The View Job Work Order dialog box appears with the Job Work Order.
- Step 5** Click **Finish**.
A message appears, *Job ID created successfully*.
The newly created job with the copied job details appears in the NetShow Job Browser.
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Stopping Jobs

This topic captures procedures for stopping and retrying jobs. From the NetShow Job Browser:

- You can select jobs that are not yet executed or jobs that are currently running, and stop them. You can select only one job at a time and stop it.
- You can select failed jobs and retry them (see [Retrying Jobs](#)).

When you use this feature to stop a job, the job status changes to the Cancelled state.

To stop a job from the NetShow Job Browser:

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- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs..**
The NetShow Job Browser appears with a detailed list of all jobs.

Step 2 Select the job you want to stop and click **Stop**.

A message appears, *The selected job will be stopped.*

Step 3 Either:

- Click **OK** to confirm.

Or

- Click **Cancel** to prevent the job from stopping.

If you have selected a periodic job, a message appears, *Do you want to stop all the instances?*

Step 4 Either:

- Click **OK** to stop all instances of the job.

Or

- Click **Cancel** to stop only one instance of the job.

If you confirm stopping the job, a message appears, *Job ID is being stopped. It may take a few seconds.*

Step 5 Click **OK**.

The status of the job appears as *Cancelled* in the NetShow Job Browser.

Retrying Jobs

From the Netshow Job Browser, you can select a failed job and retry that job. You can only retry non-periodic jobs.

To retry a failed job from the NetShow Job Browser:

Step 1 Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs**.

The NetShow Job Browser appears with a list of all jobs.

Step 2 Select the job you want to retry and click **Retry**.

The Set Schedule Options dialog box appears.

You can either retain or change the Schedule Options.

Step 3 Click **Next**.

The View Job Work Order dialog box appears with the Job Work Order.

Step 4 Click **Finish**.

A message appears, *Job ID submitted for retry successfully.*

The job appears in the NetShow Job Browser with the same ID.

Deleting Jobs

You can delete all jobs from the Job Browser except jobs that are already running. To delete a running job, you must first stop the job.

You can also delete individual instances of periodic jobs. However, if you try to delete the scheduled instance of the periodic job, you are prompted to confirm whether you want to delete all the instances of the job. You can delete multiple jobs at the same time.

Even if you delete a job that has completed, you can view the command output in the output archive unless you remove this archive.

To delete a job from the NetShow Job Browser:

Step 1 Select **Monitor > Troubleshooting Tools > NetShow > NetShow Jobs**.

The NetShow Job Browser appears with a detailed list of all jobs.

Step 2 Select a job or a number of jobs that you want to delete and click **Delete** in the NetShow Job Browser.

A message appears, `Selected job(s) will be deleted.`

Step 3 Either:

- Click **OK** to confirm.

Or

- Click **Cancel** to prevent the jobs from deleting.

If you have selected periodic jobs, a message appears, `If you delete periodic jobs or instances of a periodic job that are yet to be run, the jobs will no longer run, nor will they be scheduled to be run again. You must then recreate the deleted jobs. Do you want to continue?`

Step 4 Either:

- Click **OK** to delete all instances of the jobs.

Or

- Click **Cancel** to cancel deleting the jobs.

If you confirm deleting the job, a message appears, `Job(s) deleted successfully.`

Archiving NetShow Job Output

The Output Archive feature in NetShow helps you archive and access the stored output that is created from a NetShow job. The `show` command output is archived only if the jobs are executed completely.

The Output Archive Analyzer feature reads `show` command outputs, interprets the data and generates a report. The Output Interpreter tool in Cisco.com performs the `show` command analysis.

NetShow sends selected output to Cisco.com, gets the analyzed details and displays these details in a separate window. The final output is a complete analysis of the command output. The errors and potential problems are highlighted in the report.

You can analyze the complete output of a particular command on a device. The command output displays the analyzed output generated only for a selected command. You can generate a printer-friendly format of the command output.

This section explains:

- [Viewing and Analyzing NetShow Output](#)
- [Deleting Output Archive](#)

Viewing and Analyzing NetShow Output

You can view and analyze a NetShow Job Output.

To view and analyze the NetShow Output:

Step 1 Select **Monitor > Troubleshooting Tools > NetShow > Output Archive**.

The Output Archive page appears.

You can use the Filter option to filter the archives based on All or Job ID or Description as the criteria. You can provide a search string in the text area and click **Filter** to filter the archives based on the search criteria.

Step 2 Select an Archive ID and click **View**.

The NetShow Archive Details pop-up appears, displaying the day, date, and time details in the header at the top of the page. The Archive ID appear in the header of the Archive Result.

The Archive Details pop-up has two panes. The Archive Details appear in a tree format with Device Details and Deployed Devices in the left pane. The list of devices appear in a table in the right pane.

The following table describes the Archive Details page.

Folder	Description
Archive Details	Expand the list tree to view the Device Details and Deployed Devices.
Device Details	Expand the list tree to view the Deployed Devices.
Deployed Devices	<p>Contains detailed job results for each device in a table:</p> <ul style="list-style-type: none"> • Device—List of devices on which the job ran. • Status—Status of the device deployment (success or failure.) • Protocol Used—Protocol used for the device. • Message <ul style="list-style-type: none"> – If the job failed on the device, the reason for failure appears. – If the job succeeded on that device, the message <code>Deploy Successful</code> appears. <p>This page displays the number of rows you have set for display in the Rows per page field. You can increase the rows up to 500 for each page. You can navigate among the pages of the report using the navigation icons at the bottom right of this table.</p> <p>Click the device name link to view the details of command sets and commands on the device. Go to Step 3 for details.</p>

Step 3 Click the Status link in the Archive Details table. Alternatively you can click on the device link and it takes you to the Device Center Home page providing more details about that device.

The NetShow Device Details pop-up appears with the device name, Command Sets and commands in the left pane and the command output in the right pane.

By default, the command output is a consolidated output for all the commands.

To get specific outputs for each command:

- a. Select a command from the Device list tree in the left pane.
- b. Click **Analyze Output** to view and analyze the output of the command.

If the selected command's output appears as `No Output` in the right pane, the Analyze Output button is disabled.

You can mask the credentials shown in the output of `show` commands. See [Masking Credentials](#) for more details.

The Cisco.com Profile pop-up dialog box appears.

Step 4 Enter your Cisco.com Username and Password in the dialog box.

The credentials that you enter here will be used for the entire session.

The Show Commands Output Interpreter Viewer appears. It displays the report name, date, and time details in the header at the top of the report.

To convert the output in to a printer-friendly format click the Printer button.

Deleting Output Archive

You can use this feature to delete the output of a NetShow Job archive. However, this action will not delete the corresponding job details.

To delete the Output Archive:

Step 1 Select **Monitor > Troubleshooting Tools > NetShow > Output Archive**.

The Output Archive page appears.

You can use the Filter option to filter the archives based on All or Job ID or Description as the criteria. You can provide a search string in the text area and click **Filter** to filter the archives based on the search criteria.

Step 2 Select the archives that you want to delete and click **Delete**.

A message appears, `Selected archives will be deleted`.

Step 3 Either:

- Click **OK** to delete the selected archives.

Or

- Click **Cancel** to cancel deleting the selected archives.
-

Command Sets

The Command Set represents a logical grouping of commands. Each command set is associated with a unique name.

NetShow provides a few pre-defined command sets that can be run against selected devices. See [System-Defined Command Sets](#) for more details on these command sets.

The command set can contain multiple commands in the following types of devices:

- Universal Gateways and Access Servers
- Content Networking
- DSL and Long Reach Ethernet (LRE)
- Optical Networking
- Routers
- Switches and Hubs
- Security and VPN
- Broadband Cable
- Storage Networking
- Voice and Telephony
- Network Management
- Wireless
- Cisco Interfaces and Modules

Since the command set itself contains **show** commands for different device types, you use them to run on multiple devices of various device types. You must identify the required command sets to solve a particular problem.

When you run command set on different types of devices, it sends only the **show** commands applicable for that device type. These command sets help you getting lab wide network status.

The Network Administrator and Network Operator can create command sets. The Network Administrator can assign command sets to other users.

When you migrate from LMS 2.x to LMS 3.x, Command Sets in LMS 2.x that have special characters will not appear in the LMS 3.x NetShow GUI. The valid characters for Command Set names are: A to Z, a to z, 0 to 9, -, _, .,), (, /, and blank space.

Characters other than these are considered as special characters, and will not appear in the NetShow GUI.

This section contains [System-Defined Command Sets](#).

System-Defined Command Sets

The following table describes the System-defined command sets in NetShow:

Command Set	Commands
Show ASP info	Shows information about the ASP macros
Show Cable Hop Information	Displays cable hop statistics
Show Cable Modem Info	Displays information for the registered and unregistered CMs
Show Cable Modulation-Profile	Displays modulation profile group information
Show Cable QoS Profile Info	Displays quality-of-service (QoS) profiles
Show Cable Spectrum Info	Displays information about spectrum groups
Show Cable Tech Info	Displays Cable Tech (system and configuration) information
Show Call Home Info	Displays information about Call Home such as: <ul style="list-style-type: none"> • Show Call Home Detail • Show Call Home Statistics
Show Configured GOLD Tests Info	Displays all the GOLD tests configured
Show Embedded Event Manager Info	Displays Embedded Event Manager information such as: <ul style="list-style-type: none"> • Event Manager Policies Registered • Event Manager Policies Available • Event Manager Environmental Variables
Show EnergyWise Info	Shows information about the EnergyWise status.
Show GOLD Test Results	Displays results of the GOLD tests that are run
Show HCCP details Info	Displays information on groups associated with cable interfaces
Show IGMP Info	Displays information about multicast channels and interface
Show InlinePower Info	Displays status of inline power
Show Interface Info	Displays the current configuration and status
Show Interfaces Rate-Limit Info	Displays information about committed access rate
Show IP Routing Info	Displays the current state of the routing table
Show Protocol Info	Displays protocols configured for the entire system
Show SmartPort Macro Info	Displays information about SmartPort macros
Show SNMP Users and Groups Info	Displays SNMP information for a specific user and group
Show Switch VLAN Info	Displays information about VLAN and interface
Show System Info	Displays version, flash, logging, hardware, route
Show System Performance	Displays system interfaces, buffers, processes, memory
Show Tech Info	Displays system and configuration information

Managing Command Sets

The Command Set Administration task enables the administrator to view the details of an existing Command Set, create a new Command Set, edit an existing Command Set, and delete an existing Command Set.

**Note**

You must have Administrator privileges to perform any of these tasks.

This section contains:

- [Viewing Command Set Details](#)
- [Creating a New Command Set](#)
- [Editing Command Sets](#)
- [Deleting Command Sets](#)
- [Adding and Deleting Adhoc Commands](#)
- [System-Defined Command Sets](#)

Viewing Command Set Details

You can view the details of an existing Command Set using this feature.

To view the Command Set details:

-
- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > Command Sets**.
The Command Sets window appears.
- Step 2** Click the name of a Command Set in the List of Command Sets.
The Command Set Details pop-up window appears.
- Step 3** Expand each of the list tree to view details of the Command Set assigned to each of the device category in the list.
- Step 4** Click **Close** to close the Command Set Details window.
-

Creating a New Command Set

You can create a new Command Set using this feature.

To create a new Command Set:

-
- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > Command Sets**.
The Command Sets window appears.
- Step 2** Click **Create** in the Command Sets window.
The Select Device Category window appears.

- Step 3** Enter the name of the Command Set in the Name field and a description for the Command Set in the Description field.
- Step 4** Select the type of device from the Device Type Selector.
- Step 5** Click **Next** to continue.
The Select Commands window appears.
- Step 6** Select the command or commands you want to assign to the selected device or group of devices from the Available Commands pane in the Select Commands window.
- Select **All Commands** from the Commands Selection drop-down list to list all the commands available for the device or group of devices.
 - Select **Common Commands** from the Commands Selection drop-down list to list only the common commands.
- If you have a device category with no commands, it will not be considered for populating the Common Commands list.
- Step 7** Click **Add** to add the selected commands.
The commands move to the Selected Commands pane in the Select Commands dialog box.
- Step 8** Select commands from the Selected Commands pane and click **Remove** to delete the commands from the Selected Commands pane.
If you want to enter adhoc commands:
- a. Enter them in the Adhoc Commands text box and click **Add Adhoc**.
The adhoc commands are added in the Available Commands pane.
 - b. Select the commands that you want to assign from the Available Commands and click **Add**.
- See [Adding and Deleting Adhoc Commands](#) for more details on Adhoc Commands.
- Step 9** Click **Finish** to create the new Command Set.
A message appears: `Command Set Command Set name created successfully.`
- Step 10** Click **OK**.
The new Command Set appears in the List of Command Sets in the Command Sets Page.
-

Editing Command Sets

You can edit Command Sets using this feature. You can edit only user-defined Command Sets.

To edit a Command Set:

-
- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > Command Sets**.
The Command Sets window appears with the List of Command Sets.
- Step 2** Select the name of the Command set in the List of Command Sets and click **Edit**.
The Select Device Category window appears with the device types that you have already selected and the Command Set name.
If you want to edit the Command Set for the particular device type, select the device type and click **Next**.
The Select Commands window appears.

Step 3 Select the command or commands you want to assign to the selected device or group of devices from the Available Commands pane in the Select Commands window.

- Select **All Commands** from the Commands Selection drop-down list to list all the commands available for the device or group of devices.
- Select **Common Commands** from the Commands Selection drop-down list to list only the common commands.

If you have a device category with no commands, it will not be considered for populating the Common Commands list.

Step 4 Click:

- **Add** to add the selected commands.
The commands move to the Selected Commands pane in the Select Commands dialog box.
- **Remove** to delete the commands from the Selected Commands pane.
- Enter the commands in the Adhoc Commands text box and click **Add Adhoc**.
- Select the adhoc commands from the Selected Commands pane and click **Delete Adhoc** to remove the adhoc commands.

See [Adding and Deleting Adhoc Commands](#) for more details on Adhoc Commands.

Step 5 Click **Finish** to edit the Command Set.

A message appears: *Command Set Command Set name* edited successfully.

Step 6 Click **OK**.

Deleting Command Sets

You can delete a Command Set or a list of Command Sets using this option. You can delete only user-defined Command Sets.

To delete Command Sets:

Step 1 Select **Monitor > Troubleshooting Tools > NetShow > Command Sets**.

The Command Sets window appears.

Step 2 Select the Command Sets you want to delete in the List of Command Sets and click **Delete**.

A message appears: *Selected Command Sets will be deleted*.

Step 3 Either:

- Click **OK** to confirm the deletion of the Command Sets.

Or

- Click **Cancel** to cancel the deletion of the Command Sets.
-

Adding and Deleting Adhoc Commands

You can enter the following adhoc commands while creating a command set:

`show`, `version`, `where`, `ping`, `traceroute`, and `?`

You can use the short forms of these commands. For example you can use `sh` for `show`.

To add and delete Adhoc Commands:

-
- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > Command Sets**.
The Command Sets window appears.
- Step 2** Click **Create** in the Command Sets window.
The Select Device Category window appears.
- Step 3** Enter the name of the Command Set in the Name field and a description for the Command Set in the Description field.
- Step 4** Select the type of device from the Device Type Selector.
- Step 5** Click **Next** to continue.
The Select Commands window appears.
- Step 6** Enter the adhoc commands in the Adhoc Commands text box and click **Add Adhoc**.
You can enter multiple commands; separate them by commas.
The adhoc commands are added to the Available Commands list.
- Select the adhoc commands from the Available Commands list and click **Add**.
The adhoc commands are added to the Selected Commands list.
 - Select the adhoc commands from the Selected Commands list and click **Remove** to remove them from the Command Set.
- You can delete the adhoc commands permanently only if they are not assigned to any Command Set.
- Step 7** Click **Finish** to create the new command set.
A message appears: `Command Set Command Set name created successfully.`
- Step 8** Click **OK**.
The new Command Set appears in the List of Command Sets in the Command Sets Page.
-

Assigning Command Sets

Network Administrators can assign command sets to Network Operators to authorize them with executable Command Sets.

By default, all system-defined command sets are assigned to Network Administrators.

The Assigning Command Sets feature in NetShow allows you to specify which user or set of users can run NetShow commands.

Your login determines whether you can use this option. You can use the Assigning Command Sets feature in Netshow for:

- [Showing Assigned Command Sets](#)
- [Assigning Command Sets to Users](#)
- [Assigning Custom Command Execution Privilege](#)

Showing Assigned Command Sets

You can view the list of user-defined Command Sets assigned to a particular user using this feature.

To show the assigned Command Sets:

-
- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > Assigning Command Sets**.
The Assigning Command Sets page appears with the Assign Command Sets window.
- Step 2** Enter the username in the Username field and click **Show Assigned**.
The username must be that of a valid Cisco Prime LMS user.
The Command Sets assigned to this user appears in the Selected User-Defined Command Sets pane in the Assign Command Sets window.
-

Assigning Command Sets to Users

To assign Command Sets to users:

-
- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > Assigning Command Sets**.
The Assign Command Sets dialog box appears.
- Step 2** Enter the username in the Username field.
- Step 3** Select the Command Sets that you want to allocate to the user from the Available User-Defined Command Sets list and click **Add**.
The selected Command Sets appear in the Selected User-Defined Command Sets list.
- Step 4** Add all the required Command Sets to the Selected User-Defined Command Sets list box.
- Step 5** Click **Assign** to assign the Command Sets access privileges to the specified user.
For a specified user to see the assigned Command Sets, enter the username in the Username field and click **Show Assigned**.
The Command Sets assigned to the user appear in the Selected User-Defined Command Sets list.
-

Assigning Custom Command Execution Privilege

You can assign custom command execution privilege to selected users, using the Assigning Command Set feature. You can assign this privilege to one or more users. These users can enter custom commands while creating NetShow jobs only if this privilege is enabled.

To assign Custom Command Execution privilege:

-
- Step 1** Select **Monitor > Troubleshooting Tools > NetShow > Assigning Command Sets**.
The Assign Command Sets dialog box appears.
- Step 2** Enter the username in the Username field.
- Step 3** Check the Custom Command Execution check box to assign custom command execution privilege to this user.
-

Launching show Commands From Device Center

You can run **show** commands from Device Center.

To run **show** commands from Device Center:

-
- Step 1** Select **Device Troubleshooting > Device Center**.
The Device Center window appears with the device selector on the right and Device Center overview information on the left section of the screen.
- Step 2** Either:
- Enter the device name of the device you want to select and click **Go** in the Device Selector field.
- Or
- Select a device from the list-tree.
- The Device Summary and Functions Available panes appear in the right section of the screen.
- Step 3** Select **Run Show Command** from the Management Tasks tab under the Functions Available pane.
The Select Command Set window appears.
- Step 4** Select the Command Set from the Command Set List pane in the Show Commands Execution window.
- Step 5** Enter the custom commands in the Custom Commands text box.
- Step 6** Click **Next**.
The Set Schedule Options page appears with the Job Schedule and Options dialog box.

Step 7 Enter the following information:

Field	Description
Scheduling	
Run Type	<p>The Run Type of the job. The Run Types could be any or all of these, depending on the type of the job:</p> <ul style="list-style-type: none"> • Immediate—Runs the job immediately. • Once—Runs the job once at the specified date and time. • 6 - hourly—Runs the job every 6 hours, starting from the specified time. • 12 - hourly—Runs the job every 12 hours, starting from the specified time. • Daily—Runs daily at the specified time. • Weekly—Runs weekly on the day of the week and at the specified time. • Monthly—Runs monthly on the day of the month and at the specified time. • Last day of Month—Runs on the last day of the month at the specified time. <p>The subsequent instances of periodic jobs will run only after the earlier instance of the job is complete.</p> <p>For example, if you have scheduled a daily job at 10:00 a.m. on November 1, the next instance of this job will run at 10:00 a.m. on November 2 only if the earlier instance of the November 1 job has completed.</p> <p>If the 10.00 a.m. November 1 job has not completed before 10:00 a.m. November 2, the next job will start only at 10:00 a.m. on November 3.</p> <p>To change, select the required run type from the drop-down list.</p>
Date	Scheduled date and time of the job.
Job Information	
Job Description	Enter a description for the job. This is mandatory. You can enter only alphanumeric characters.
E-mail	<p>Enter e-mail addresses to which the job sends messages at the beginning and at the end of the job.</p> <p>You can enter multiple e-mail addresses; separate these addresses by commas.</p> <p>Configure the SMTP server to send e-mails in the View / Edit System Preferences dialog box (Admin > System > System Preferences).</p> <p>We recommend that you configure the LMS Server E-mail ID in the View / Edit System Preferences dialog box (Admin > System > System Preferences). When the job starts or completes, an e-mail is sent with the LMS Server E-mail ID as the sender's address.</p>
Comments	Enter your comments for the job. Comments appear in the Job Work Order.
Job Options	
Enable Job Password	<ul style="list-style-type: none"> • If you have enabled the Enable Job Password option and disabled the User Configurable option in the Job Policy dialog box (Admin > Network > Configuration Job Settings > Config Job Policies) enter the device login user name and password and Device Enable password. • If you have enabled the Enable Job Password option and enabled the User Configurable option in the Job Policy dialog box (Admin > Network > Configuration Job Settings > Config Job Policies) either: <ul style="list-style-type: none"> – Enter the device login user name and password and Device Enable password. <p>Or</p> <ul style="list-style-type: none"> – Disable the Job Password option in the Job Schedule and Options dialog box.

Field	Description
Execution	Specify the order in which the job should run on the devices. <ul style="list-style-type: none"> Parallel—Allows the job to run on multiple devices at the same time. By default, the job runs on five devices at a time. Sequential—Allows the job to run on only one device at a time.
MakerComments	This field appears only if you have enabled Job Approval Policies for NetShow. Enter the Maker Comments. See Setting Up Job Approval for more details on enabling Job Approval Policies.
Maker E-mail	This field appears only if you have enabled Job Approval Policies for NetShow. Enter the Maker E-mail address. This is mandatory. See Setting Up Job Approval for more details on enabling Job Approval Policies.

Step 8 Click **Next**.

The View Job Work Order page appears with the Job Work Order.

The Job Work Order contains general information on the job and on the:

- Job policies.
- Job approval details (if you have enabled job approval).
- Device details.
- Command Sets and the commands to be run.

Step 9 Click **Finish** after you review the details of your job in the Job Work Order dialog box.

A message appears, *Job ID created successfully*.

The newly created job appears in the NetShow Job Browser.

Using cwcli netshow Command

You can invoke Netshow features from Command Line Interface (CLI).

The `cwcli netshow` command let you use NetShow features from the command line. You can use the `cwcli netshow` commands to view, browse, create, delete, and cancel NetShow jobs and Command Sets.

This command is described in the cwcli framework chapter. For details, see the Configuration Online help.