



CHAPTER 25

Usage of Embedded Event Manager in RME

This chapter consists of the following:

- [What is EEM?](#)
- [Components of Cisco IOS EEM](#)
- [Types of Actions](#)
- [Support for EEM in RME](#)

What is EEM?

EEM (Embedded Event Manager) is an IOS technology that runs on the control plane of the Cisco Catalyst 6500 device. This EEM technology is integrated within Cisco IOS Software and because of this the Cisco IOS Software, EEM is aware of the state of the network from the perspective of view of the device on which it is operating. The Cisco Catalyst 2900XL, 2970, 2960, 3550, 3560, 3750, and 3750E switches also support EEM.

This intelligence, combined with the programmability of EEM, provides a powerful facility that can be leveraged in many ways. It is a combination of processes designed to monitor key system parameters such as:

- CPU Utilization
- Interface Errors
- Counters
- SNMP Events
- Syslog Events
- Diagnostics Events

After monitoring the system parameters, EEM acts on specific events or thresholds or counters that are exceeded.

The Cisco IOS Software Infrastructure allows triggering pre-programmed local actions when specific events are detected. Cisco IOS Software Embedded Event Manager harnesses network intelligence through event detectors and takes action according to pre-defined policies. This results in greater manageability, control, and resiliency.

The EEM is a framework to monitor and detect certain conditions that might impact network services. It includes methods to program corrective actions when incorrect events are detected.

These actions can be either:

- A programmable scripting language based on Tool Command Language (TCL)
Or
- Applets

You can apply the local scripting capability to many scenarios that previously required programming and scripting at a central network management station.

Since this system does not depend on a remote network management system, it can handle faults even when the network connection to the management system is impaired.

For more information, see [Types of Actions](#).

Components of Cisco IOS EEM

The Cisco IOS EEM consists of two components:

- Event Detectors

Cisco IOS Software EEM event detectors provide an interface between the monitored agent and the action policies. Event detectors determine that a particular event has occurred and notify the event manager.

- Policy Engines

Policy engines are the methods of programming in EEM. There are two policy engines:

- Cisco IOS Software CLI Applet interface
- TCL subsystem and interpreter.

A policy consists of an event trigger coupled with some defined action. A policy must be registered with one of these two policy engine facilities.

After a policy is registered, the event manager invokes the policy after the corresponding event detector detects the trigger event. Policies reference environment variables to determine the specifics of particular events.

Types of Actions

There are two types of events and actions that you can configure on the Cisco IOS Catalyst 6500, 2900XL, 2970, 2960, 3550, 3560, 3750, and 3750E switches:

- Applets

An applet is a simple policy that is defined within the CLI configuration. It is a combination of events and actions. You can use it to define simple policies that are triggered by specific events.

- TCL Scripts

You can create extensive policies using the script policy engine. You can develop TCL-based policies that interact with Cisco IOS Software using CLI commands and a set of environment variables.

A TCL policy when registered, becomes an event subscriber. After a registered event is detected, the EEM server will trigger all corresponding event subscribers interested in this particular event.

You cannot deploy TCL scripts using TFTP, RCP and SCP protocols using Embedded Event Manager task.

Support for EEM in RME

You can use RME to configure the following on Cisco Catalyst 6500, 2900XL, 2970, 2960, 3550, 3560, 3750, and 3750E switches:

- Environmental Variables
- Applets
- TCL Scripts

You can use RME NetConfig EEM-specific tasks to configure the EEM-specific scripts, applets and variables on the devices managed by RME.

This section consists of:

- [RME NetConfig Tasks for EEM](#)
- [Configuring EEM Using RME](#)
- [EEM and RME Reports](#)
- [EEM and RME NetShow](#)

RME NetConfig Tasks for EEM

You can configure EEM scripts, applets, or variables using NetConfig tasks available for this purpose. The EEM-specific NetConfig tasks are:

- [EEM Environmental Variables Task](#)
- [Embedded Event Manager Task](#)

EEM Environmental Variables Task

You can use this task to configure EEM Environmental Variables (that are used by the TCL script) on Cisco Catalyst 6500, 2900XL, 2970, 2960, 3550, 3560, 3750, and 3750E switches.

For more details, see [NetConfig System-Defined Tasks Supported by the RME 4.2 Device Categories](#).

You can enter the details for this task in the Environmental Variables Configuration dialog box. To invoke this dialog box, see [Starting a New NetConfig Job](#).

For the features of system-defined tasks and a description of the features of a system-defined task dialog box, see [Understanding the System-defined Task User Interface \(Dialog Box\)](#).

The fields in the EEM Environmental Variables Configuration dialog box are:

Field/Button	Description
IOS Parameters	
EEM Environmental Variables	

Field/Button	Description
Action	Select either: <ul style="list-style-type: none"> • Add - to add one or more variables. Or <ul style="list-style-type: none"> • Remove - to remove one or more variables.
Variable Name	Enter the name for the variable. Example: my_counter You can create a maximum of five variables at a time. If you want to create more variables, create another instance by clicking Add Instance Button.
Value	Enter the value for the variable. Example: 15 Now the variable my_counter will have the value 15 .
Applicable Devices	Allows you to view the IOS devices in your selection, to which these variables would be applied to.
Save	Saves the information you have specified.
Reset	Clears all fields and reverts to the default setting.
Cancel	Ignores your changes.

Embedded Event Manager Task

You can use this task to configure EEM Scripts or Applets on Cisco Catalyst 6500, 2900XL, 2970, 2960, 3550, 3560, 3750, and 3750E switches.

For more details, see [NetConfig System-Defined Tasks Supported by the RME 4.2 Device Categories](#).

You can enter the details for this task in the Embedded Event Manager Configuration dialog box. (To invoke this dialog box, see [Starting a New NetConfig Job](#).)

For the features of system-defined tasks and a description of the features of a system-defined task dialog box, see [Understanding the System-defined Task User Interface \(Dialog Box\)](#).

The fields in the Embedded Event Manager Configuration dialog box are:

Field/Button	Description
IOS Parameters	
EEM Configuration	
Policy Type	Select either Script or Applet as the policy.
Action	Select Register or Unregister to register or unregister a script or applet.

Field/Button	Description
Device Directory Options	
Create New Directory	<p>Check this option if you want to create a new directory on the device to copy the applet or script.</p> <p>If you select this checkbox, the input given in the Directory Name textbox is used to create a new directory.</p> <p>This option is activated only when the Script Policy and Register Action options are selected.</p>
Directory Name	<p>Enter the absolute path of the directory where the file needs to be placed on the device.</p> <p>Example:</p> <p>disk0:/Testing</p> <p>Here a new directory Testing is created in the device under disk0 Partition.</p> <p>Ensure that the selected directory has enough space before the script files are copied.</p> <p>This option is activated only when the Script Policy and Register Action options are selected.</p>
Upload Script/Applet files from Server	
Files	<p>Use this option to either:</p> <ul style="list-style-type: none"> • Enter the file location to upload the scripts to deploy on the device. Ensure that you enter the absolute path along with the filename. You can specify multiple filenames separated by commas. Or • Browse to the directory and select one or more scripts to deploy on the device. Use CTRL to select more than one file. Use Browse to browse to the directory. <p>You cannot combine tcl files and applet files in a single NetConfig task.</p>
Applicable Devices	Allows you to view the IOS devices in your selection, to which the scripts or applets apply.
Save	Saves the information you have specified.
Reset	Clears all fields and reverts to the default setting.
Cancel	Ignores your changes.

Configuring EEM Using RME

You can configure the following using RME NetConfig Tasks:

- Environmental Variables, see [Configuring Environmental Variables](#)
- Embedded Event Manager, see [Configuring Embedded Event Manager](#)

Configuring Environmental Variables

To configure Environmental Variables using RME:

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- Step 1** Go to **Resource Manager Essentials > Config Mgmt > NetConfig > NetConfig Jobs**.
- The NetConfig Job Browser appears.
- For the fields in the NetConfig Job Browser, see [Browsing and Editing Jobs Using the NetConfig Job Browser](#).
- Step 2** Click **Create**.
- The Devices and Tasks dialog box appears.
- Step 3** Select the devices from the Device Selector pane.
- For more information on Device Selector, see the topic [Using RME Device Selector](#) in the section [Adding and Troubleshooting Devices Using Device Management](#).
- Step 4** Select the Environmental Variables task, using the Task Selector.
- Step 5** Click **Next**.
- Step 6** Select **Environmental Variables** from the Applicable Tasks pane and click **Add Instances**.
- The Environmental Variables Configuration dialog box appears.
- For more information on the fields in the Environmental Variables Configuration dialog box, see [Embedded Event Manager Task](#).
- Step 7** Set the parameters in the task dialog box and click **Save**.
- To reset the values that you have selected click **Reset**. Click **Cancel** to return to the previous dialog box, without saving your changes.
- You will see the instance of the task in the Added Tasks pane of the Add Tasks dialog box. The instance appears in this format:
- Taskname_n*, where *Taskname* is the name of the task you have added, and *n* is the number of the instance. For example, the first instance of a Environmental Variables task is `Environmental Variables_1`.
- You can add as many instances as required, for a task.
- Step 8** Click **Next**.
- The Job Schedule and Options dialog box appears with these panes:

Pane	Description
Scheduling	Allows you to schedule the job.
Job Options	Allows you to set the job options.

Step 9 Set the schedule for the job, in the Scheduling pane:

Field	Description
Scheduling	
Run Type	Select the run type or frequency for the job—Immediate, Once, Daily, Weekly, Monthly, or Last Day of Month. If Job Approval is enabled, the Immediate option is not available.
Date	Select the start date for the job.
at	Select the start time for the job from the hour and minute drop-down lists.
Job Info	
Job Description	Enter the Job Description. Enter unique descriptions to help you to identify jobs easily. This is mandatory.
E-mail	Enter e-mail addresses to which the job will send status notices. Separate multiple addresses with commas or semicolons. You must configure the SMTP server to send e-mails (Common Services > Server > Admin > System Preferences). If the user who has created the job has a valid e-mail address, an e-mail notification is sent with the user's address in the sender address field, when job is started and completed. If the user who has created the job does not have a valid e-mail address, then the notification e-mails will be sent with the sender address field blank. Notification e-mails include a URL that displays the job details (see Viewing Job Details for the more information about what details are displayed). If you are not logged in, you must log in using the provided login panel to view the job details.
Comments	Enter your comments for the job. Comments appear in the work order of the job and are stored in the configuration archive.
Approver Comments	Enter comments for the Job Approver. This field is displayed only if you have enabled Job Approval for NetConfig. For more details see the section Enabling Approval and Approving Jobs Using Job Approval .
Maker E-mail	Enter the e-mail-ID of the job creator. This field is displayed only if you have enabled Job Approval for NetConfig. This is a mandatory field. For more details see the section Enabling Approval and Approving Jobs Using Job Approval .

Step 10 Set the job options, in the Job Options pane.

Option	Description
Fail on Mismatch of Config Versions	Causes the job to be considered as failed when the most recent configuration version in the configuration archive is not identical to the most recent configuration version that was in the configuration archive when you created the job.
Sync Archive before Job Execution	Causes the job to archive the running configuration before making configuration changes.
Copy Running Config to Startup	Causes the job to write the running configuration to the startup configuration on each device after configuration changes are made successfully. Does not apply to Catalyst OS devices.

Option	Description
Enable Job Password	
Login Username	<p>Enter the Login username. This option is available if you have set the appropriate job password policy in the Configuration Management module.</p> <p>This overrides the credentials that you had entered when you added the device in the Device and Credentials Administration module of Common Services.</p>
Login Password	<p>Enter the Login password. This option is available if you have set the appropriate job password policy in the Configuration Management module.</p> <p>This overrides the credentials that you had entered when you added the device in the Device and Credentials Administration module of Common Services.</p>
Enable Password	<p>Enter the Enable password. This option is available if you have set the appropriate job password policy in the Configuration Management module.</p> <p>This overrides the credentials that you had entered when you added the device in the Device and Credentials Administration module of Common Services.</p>

Option	Description
Failure Policy	<p>Select one of these options to specify what the job should do if it does not run on a device.</p> <ul style="list-style-type: none"> • Stop on failure: If the job does not run on a device, the job is stopped. The database is updated only for the devices on which the job was run successfully. • Ignore failure and continue If the job fails on a device, the job skips the device and continues running on the remaining devices. The database is updated only for the devices on which the job was run successfully. • Rollback device and stop Rolls back the changes on the failed device and stops the job. • Rollback device and continue Rolls back the changes on the failed device and continues the job. • Rollback job on failure Rolls back the changes on all devices and stops the job. Roll back configuration changes to failed device or all devices configured by job (see Configuring a Job to Roll Back on Failure.)
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. By default, the job runs on five devices at a time. • Sequential Allows the job to run on only one device at a time. If you select sequential execution, you can click Set Device Order to set the order of the devices. In the Device Ordering dialog box: <ul style="list-style-type: none"> a. Select a device name b. Click Move Up or Move Down to change its place in the order. c. Click OK to save the current order and close the dialog box <p>or</p> <p>Click Cancel to close the dialog box without making any changes.</p>

Step 11 Click **Device Order** to view the device order.

The Set Device Order pop-up appears. You can reset the order in which the job should be run on the devices using the Up and Down arrows.

Step 12 Click **Done** after re-ordering the devices.

The pop-up closes.

Step 13 Click **Next**.

The Job Work Order dialog box appears with information about the job, the job policies, the job approval details (if you have enabled Job Approval), the device details, and the task. It also displays details of the CLI commands that will be run on the selected devices as part of this job.

- Step 14** Click **Finish** after you review the details of your job in the Job Work Order dialog box. A notification message appears along with the Job ID. The newly created job appears in the NetConfig Job Browser.

Configuring Embedded Event Manager

To configure Embedded Event Manager scripts or applets using RME:

- Step 1** Select **Resource Manager Essentials > Config Mgmt > NetConfig > NetConfig Jobs**. The NetConfig Job Browser appears. For the fields in the NetConfig Job Browser, see [Browsing and Editing Jobs Using the NetConfig Job Browser](#).
- Step 2** Click **Create**. The Devices and Tasks dialog box appears.
- Step 3** Select the devices from the Device Selector pane. See the topic [Using RME Device Selector](#) in the section [Adding and Troubleshooting Devices Using Device Management](#).
- Step 4** Select the Embedded Event Manager Task, using the Task Selector.
- Step 5** Click **Next**.
- Step 6** Select **Embedded Event Manager** from the Applicable Tasks pane and click **Add Instances**. The Embedded Event Manager Configuration dialog box appears. For more information on the fields, see [EEM Environmental Variables Task](#).
- Step 7** Set the parameters in the Task dialog box and click **Save**. To reset the values that you have selected click **Reset**. Click **Cancel** to return to the previous dialog box, without saving your changes. You will see the instance of the task in the Added Tasks pane of the Add Tasks dialog box. The instance appears in this format:
Taskname_n, where *Taskname* is the name of the task you have added, and *n* is the number of the instance. For example, the first instance of a Embedded Event Manager task is `Embedded Event Manager_1`. You can add as many instances as required, for a task.
- Step 8** Click **Next**. The Job Schedule and Options dialog box appears with these panes:

Pane	Description
Scheduling	Allows you to schedule the job.
Job Options	Allows you to set the job options.

Step 9 Set the schedule for the job, in the Scheduling pane:

Field	Description
Scheduling	
Run Type	Select the run type or frequency for the job—Immediate, Once, Daily, Weekly, Monthly, or Last Day of Month. If Job Approval is enabled, the Immediate option is not available.
Date	Select the start date for the job.
at	Select the start time for the job from the hour and minute drop-down lists.
Job Info	
Job Description	Enter the Job Description. Enter unique descriptions to help you to identify jobs easily. This is mandatory.
E-mail	Enter e-mail addresses to which the job will send status notices. Separate multiple addresses with commas or semicolons. You must configure the SMTP server to send e-mails (Common Services > Server > Admin > System Preferences). If the user who has created the job has a valid e-mail address, an e-mail notification is sent with the user's address in the sender address field, when job is started and completed. If the user who has created the job does not have a valid e-mail address, then the notification e-mails will be sent with the sender address field blank. Notification e-mails include a URL that displays the job details (see Viewing Job Details for the more information about what details are displayed). If you are not logged in, you must log in using the provided login panel to view the job details.
Comments	Enter your comments for the job. Comments appear in the work order of the job and are stored in the configuration archive.
Approver Comments	Enter comments for the Job Approver. This field is displayed only if you have enabled Job Approval for NetConfig. For more details see the section Enabling Approval and Approving Jobs Using Job Approval .
Maker E-mail	Enter the e-mail-ID of the job creator. This field is displayed only if you have enabled Job Approval for NetConfig. This is a mandatory field. For more details the section Enabling Approval and Approving Jobs Using Job Approval .

Step 10 Set the job options, in the Job Options pane.

Field	Description
Fail on Mismatch of Config Versions	Causes the job to be considered as failed when the most recent configuration version in the configuration archive is not identical to the most recent configuration version that was in the configuration archive when you created the job.
Sync Archive before Job Execution	Causes the job to archive the running configuration before making configuration changes.
Copy Running Config to Startup	Causes the job to write the running configuration to the startup configuration on each device after configuration changes are made successfully. Does not apply to Catalyst OS devices.

Field	Description
Enable Job Password	
Login Username	<p>Enter the Login username. This option is available if you have set the appropriate job password policy in the Configuration Management module.</p> <p>This overrides the credentials that you had entered when you added the device in the Device and Credentials Administration module of Common Services.</p>
Login Password	<p>Enter the Login password. This option is available if you have set the appropriate job password policy in the Configuration Management module.</p> <p>This overrides the credentials that you had entered when you added the device in the Device and Credentials Administration module of Common Services.</p>
Enable Password	<p>Enter the Enable password. This option is available if you have set the appropriate job password policy in the Configuration Management module.</p> <p>This overrides the credentials that you had entered when you added the device in the Device and Credentials Administration module of Common Services.</p>
Failure Policy	<p>Select one of these options to specify what the job should do if it fails to run on a device.</p> <ul style="list-style-type: none"> • Stop on failure: <p>If the job does not run on a device, the job is stopped. The database is updated only for the devices on which the job was run successfully.</p> • Ignore failure and continue <p>If the job fails on a device, the job skips the device and continues running on the remaining devices. The database is updated only for the devices on which the job was run successfully.</p> • Rollback device and stop <p>Rolls back the changes on the failed device and stops the job.</p> • Rollback device and continue <p>Rolls back the changes on the failed device and continues the job.</p> • Rollback job on failure <p>Rolls back the changes on all devices and stops the job. Roll back configuration changes to failed device or all devices configured by job (see Configuring a Job to Roll Back on Failure.)</p>

Field	Description
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. By default, the job runs on five devices at a time. • Sequential Allows the job to run on only one device at a time. If you select sequential execution, you can click Set Device Order to set the order of the devices. <p>In the Device Ordering dialog box:</p> <ol style="list-style-type: none"> a. Select a device name b. Click Move Up or Move Down to change its place in the order. c. Click OK to save the current order and close the dialog box <p>or</p> <p>Click Cancel to close the dialog box without making any changes.</p>

Step 11 Click **Device Order** to view the device order.

The Set Device Order pop-up appears. You can reset the order in which the job should be run on the devices using the Up and Down arrows.

Step 12 Click **Done** after re-ordering the devices.

The pop-up closes.

Step 13 Click **Next**.

The Job Work Order dialog box appears with the information about the job, the job policies, the Job Approval details (if you have enabled Job Approval), the device details, the task. It also displays details of the CLI commands that will be run on the selected devices as part of this job.

Step 14 Click **Finish** after you review the details of your job in the Job Work Order dialog box.

A notification message appears along with the Job ID. The newly created job appears in the NetConfig Job Browser.

EEM and RME Reports

You can use RME Custom Reports along with Syslogs to generate Embedded Event Manager reports.

Before you generate reports, you need to configure those devices on which EEM is configured, to send Syslog messages to the LMS server.

Each device sends out Syslog messages after running each EEM policy. You can identify the EEM Syslog messages, based on their facility names. The facility names for EEM Syslog messages will consist of HA_EM.

You can use the Syslog Embedded Event Manager Custom report to ascertain the results of the scripts run on each device.

To generate this custom report, see [Overview: Syslog Analyzer Reports](#). The fields in the generated Syslog EEM Custom Report are given below:

Field	Description
Device Name	Name of the device generating the Syslog message.
Interface	Name or IP Address of the interface in that device generating the Syslog message.
Timestamp	Time when the Syslog message was generated. The format used by timestamp is: mmm dd yyyy hh:mm:ss where: mmm represents month dd represents date yyyy represents year hh represents hour mm represents minute ss represents second Example: Nov 18 2008 12:24:36
Facility/Sub Facility	Displays the facility or sub-facility codes. A facility is a hardware device, a protocol, or a module of the system software. See System Error Messages in the Cisco IOS Reference manual, for a predefined list of system facility codes. A sub-facility is the sub-facility in the device that generates the Syslog message.
Severity	Displays the message severity levels. Representations for the severity codes are: 0 —Emergencies 1 —Alerts 2 —Critical 3 —Errors 4 —Warnings 5 —Notifications 6 —Informational
Mnemonics	Codes that uniquely identifies an error message. Example: LOG
Description	Description of each Syslog message.
Details	Other details for each Syslog message.

EEM and RME NetShow

RME NetShow allows you to generate reports based on various commandsets. You can use RME NetShow to generate a [Report on the EEM Configurations on each Device](#)

Report on the EEM Configurations on each Device

Use RME NetShow to view the EEM configurations on each device.

The commandset which is used for this purpose is **Show Embedded Event Manager Info**. This commandset consists of the following commands:

```
show event manager policy available
show event manager policy registered
show event manager environment all
show event manager policy pending
show event manager directory user policy
```

To generate this report:

-
- Step 1** Select **Resource Manager Essentials > Tools > NetShow > NetShow Jobs**.
The NetShow Job Browser window appears.
 - Step 2** Click **Create** .
The Select Devices and Commandsets window appears.
 - Step 3** Select the devices from the Device Type Selector.
 - Step 4** Select **Show Embedded Event Manager Info** comandset from the Commandset List
 - Step 5** Enter custom commands in the Custom Commands text area if required.
 - Step 6** Click **Next** to continue.
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.</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>
Date	Scheduled date and time of the job.
Job Information	
Job Description	Enter the Job Description. This is mandatory. Enter unique descriptions to help you to identify jobs easily. 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.</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 (Common Services > Server > Admin > System Preferences).</p> <p>We recommend that you configure the CiscoWorks E-mail ID in the View / Edit System Preferences dialog box (Common Services > Server > Admin > System Preferences). When the job starts or completes, an e-mail is sent with the CiscoWorks E-mail ID as the sender's address.</p>
Comments	Enter your comments for the job. Comments appear in the work order of the job.

Field	Description
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 (Resource Manager Essentials > Admin > Config Mgmt > 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 (Resource Manager Essentials > Admin > Config Mgmt > 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 DCR 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:

- 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.

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.

Step 10 Click on the Job ID to view the results of the NetShow job created.

