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# Junos Space Network Management Platform

## Monitoring and Troubleshooting Guide

Release  
18.4



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*Junos Space Network Management Platform Monitoring and Troubleshooting Guide*

18.4

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# About the Documentation

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## Documentation and Release Notes

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To obtain the most current version of all Juniper Networks<sup>®</sup> technical documentation, see the product documentation page on the Juniper Networks website at <https://www.juniper.net/documentation/>.

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

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## Documentation Conventions

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Table 1 on page xii defines notice icons used in this guide.

Table 1: Notice Icons







Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

Table 2 on page xii defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
<b>Bold text like this</b>	Represents text that you type.	To enter configuration mode, type the <b>configure</b> command:  user@host> <b>configure</b>
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> <b>show chassis alarms</b>  No alarms currently active
<i>Italic text like this</i>	<ul style="list-style-type: none"> <li>Introduces or emphasizes important new terms.</li> <li>Identifies guide names.</li> <li>Identifies RFC and Internet draft titles.</li> </ul>	<ul style="list-style-type: none"> <li>A policy <i>term</i> is a named structure that defines match conditions and actions.</li> <li><i>Junos OS CLI User Guide</i></li> <li>RFC 1997, <i>BGP Communities Attribute</i></li> </ul>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name:  [edit] root@# <b>set system domain-name</b> <i>domain-name</i>

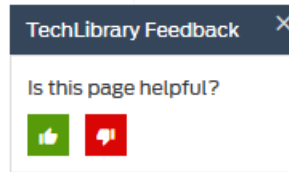
Table 2: Text and Syntax Conventions (continued)

Convention	Description	Examples
<b>Text like this</b>	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> <li>To configure a stub area, include the <b>stub</b> statement at the <b>[edit protocols ospf area area-id]</b> hierarchy level.</li> <li>The console port is labeled <b>CONSOLE</b>.</li> </ul>
< > (angle brackets)	Encloses optional keywords or variables.	<b>stub</b> <default-metric <i>metric</i> >;
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	<b>broadcast</b>   <b>multicast</b> <i>(string1   string2   string3)</i>
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	<b>rsvp</b> { # Required for dynamic MPLS only
[ ] (square brackets)	Encloses a variable for which you can substitute one or more values.	<b>community name members</b> [ <i>community-ids</i> ]
Indentation and braces ( { } )	Identifies a level in the configuration hierarchy.	<b>[edit]</b> routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
<b>GUI Conventions</b>		
<b>Bold text like this</b>	Represents graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> <li>In the Logical Interfaces box, select <b>All Interfaces</b>.</li> <li>To cancel the configuration, click <b>Cancel</b>.</li> </ul>
> (bold right angle bracket)	Separates levels in a hierarchy of menu selections.	In the configuration editor hierarchy, select <b>Protocols&gt;Ospf</b> .

## Documentation Feedback

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- Click the thumbs-up icon if the information on the page was helpful to you.
- Click the thumbs-down icon if the information on the page was not helpful to you or if you have suggestions for improvement, and use the pop-up form to provide feedback.
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- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <https://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <https://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

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- Find solutions and answer questions using our Knowledge Base: <https://kb.juniper.net/>
- Download the latest versions of software and review release notes: <https://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://kb.juniper.net/InfoCenter/>

- Join and participate in the Juniper Networks Community Forum:  
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- Open a case online in the CSC Case Management tool: <https://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://entitlementsearch.juniper.net/entitlementsearch/>

## Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <https://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <https://www.juniper.net/support/requesting-support.html>.





## PART 1

# Overview

- [Overview on page 3](#)



## CHAPTER 1

# Overview

- [Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform on page 3](#)
- [Overall System Condition and Fabric Load History Overview on page 6](#)
- [Junos Space Network Management Platform Widgets on page 9](#)

## Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform

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Use the following features of Junos Space Network Management Platform to monitor devices and troubleshoot software issues:

- [Systems of Record on page 3](#)
- [System Snapshot on page 4](#)
- [Backup and Restore on page 4](#)
- [Maintenance Mode on page 4](#)
- [Audit Logs on page 5](#)
- [Jobs on page 5](#)
- [Secure Console on page 5](#)
- [Looking Glass on page 6](#)
- [Reports on page 6](#)
- [Junos Space Debug Utilities on page 6](#)

### Systems of Record

A network managed by Junos Space Platform contains two repositories of information about the devices in the network: the devices themselves (each device defines and reports its official state) and the database (which contains information that is reported by the device during device discovery). This is known as systems of record.

The systems of record operate in the following two modes depending on where the repository of information is stored:

- **Network as a system of record (NSOR)**—By default, the network is the system of record (NSOR). In this mode, when a user commits a change in the configuration of a network

device, the commit operation automatically triggers a report through the system log to Junos Space Platform.

- Junos Space as a system of record (SSOR)—In this mode, when you perform any out-of-band commit operation, Junos Space Platform receives a system log message from the device, but the values in the Junos Space Platform database are not automatically changed or synchronized with the values on the device. Instead, you can choose whether or not to overwrite the device's local changes by pushing the accepted configuration to the device from the Junos Space Platform database. For more information about systems of record in Junos Space Platform, see *Systems of Record in Junos Space Overview*.

## System Snapshot

You can use the System Snapshot feature to create a snapshot of the current state of the Junos Space system. The snapshot includes all persistent data on the hard disk including data in the database, system and application configuration files, and application and Linux executables. You can roll back the Junos Space system to a predefined state or an older release if the system reaches an unrecoverable error state caused by undesirable behavior due to corruption of system files, interruption of critical processes, and so on. The System Snapshot is a fabric-wide operation that maintains consistency of data across all nodes in the fabric.

You can create a snapshot before a significant action is performed—for example, adding or deleting a Junos Space node, installing a Junos Space application, and so on—because the action can precipitate the system into an undesirable state. You can delete the snapshot after you have ascertained that the action was performed successfully. For more information about system snapshots, see *Creating a System Snapshot*.

## Backup and Restore

You use the Backup and Restore feature to back up (or schedule the backup of) and restore the data in the Junos Space database. You can set up an hourly, daily, or weekly schedule. The database backup can be stored on the local Junos Space system or transferred to a remote system automatically using the Secure Copy mechanism.

You can restore the backup in any of the following circumstances:

- Junos Space data is corrupted and you need to replace the corrupted data with uncorrupted data.
- Junos Space software is corrupted and unstable after a reinstallation or an upgrade and you need to populate the Junos Space database with uncorrupted data.

For more information about backup and restore operations, see *Backing Up and Restoring the Database Overview*.

## Maintenance Mode

Maintenance mode is a mode in which you can perform database restore and debugging tasks while all nodes in the fabric are shut down and the Junos Space Network Management Platform Web proxy is running. You need to be an authorized Junos Space

administrator to put the system into maintenance mode. You can put the system into maintenance mode only after you initiate a restore task by using the Backup and Restore feature.

The Junos Space system goes into maintenance mode in the following situations:

- Junos Space Network Management Platform software goes down.
- You initiate a restore operation by using the Backup and Restore feature.
- You upgrade the Junos Space Network Management Platform software.

For more information about maintenance mode, see *Maintenance Mode Overview*.

## Audit Logs

The Audit Logs workspace of Junos Space Platform displays the login history and tasks initiated by a local or remote user. Through this workspace, you can track login history, view the list of device management tasks, view the list of services that were provisioned on the device, and so on. However, tasks that are not initiated by users, such as device-driven activities (for example, resynchronization of network elements), and changes made from the Junos Space CLI are not recorded in audit logs. Audit logs can be used by administrators to review events—for example, to identify which user accounts are associated with an event, to determine the chronological sequence of events (that is, what happened before and during an event), and so on. For more information about audit logs, see *Junos Space Audit Logs Overview*.

## Jobs

You use the Jobs workspace of Junos Space Platform to monitor the status of jobs that are run in Junos Space Platform and all Junos Space applications installed on Junos Space Platform. You can view the status of the jobs on the Job Management page. A job is a user-initiated action that is performed on any object that is managed by Junos Space Platform, such as a device, service, or customer. Typical jobs in Junos Space Network Management Platform include discovering devices, deploying services, prestaging devices, and performing functional and configuration audits.

You can trigger jobs immediately or schedule jobs for a later date and time. Junos Space Platform maintains a history of job statuses for all scheduled jobs. When a job is scheduled from a workspace, Junos Space Platform assigns a job ID that serves to identify the job on the Job Management page. For more information about jobs, see *Jobs Overview*.

## Secure Console

The Secure Console feature on the Devices workspace provides a secure remote access connection to managed and unmanaged devices. Secure Console initiates an SSH session from the Junos Space user interface by using the SSH protocol. Secure Console is a terminal window embedded in Junos Space Platform that eliminates the need for a third-party SSH client to connect to devices. Secure Console provides additional security while connecting to your devices by initiating an SSH session from the Junos Space server rather than from your Web browser. You can access the Secure Console feature either from the Device Management page or the Secure Console page. For more information about Secure Console, see *Secure Console Overview*.

## Looking Glass

You use the Looking Glass feature from the Devices workspace to view device configurations by executing basic CLI commands from the Junos Space user interface. You can execute these commands on multiple devices and compare the configurations and runtime information of these devices. You can execute the following types of commands by using Looking Glass: **show**, **ping**, **test**, and **traceroute**. The commands that are supported and stored in the Junos Space Platform database are displayed on the Looking Glass page. When you type the first few letters of the command, the suggestion list displays the commands that are supported, are stored, and begin with the letters that you typed. For more information about Looking Glass, see *Looking Glass Overview*.

## Reports

With the Reports workspace of Junos Space Platform, you can generate customized reports for managing the resources in your network. You can use these reports to gather device inventory details, job execution details, user accounts, and audit trails. You first create a report definition to specify what information to retrieve from the Junos Space Platform inventory database. You then use this report definition to generate, export, and print the reports. Junos Space Platform provides some predefined categories to create report definitions. You can combine multiple categories to create a report definition. By default, a predefined set of attributes is included in a report definition. You can choose to add or remove the attributes according to what information you want from the final generated report. You can group, sort, or filter data based on specific attributes available with the report definition. For more information about reports, see *Reports Overview*.

## Junos Space Debug Utilities

Junos Space debug utilities are a collection of scripts and Java applications to fetch details that cannot be viewed on the JBoss CLI or from the Junos Space user interface. These scripts and Java applications are stored at `/var/log/space-debug/debug-utilities` and categorized under `deviceConnection`, `jobManagement`, `deviceImport`, and `HornetQ` directories. When you execute these scripts or Java applications, you can view details such as device-connection or node-connection issues, device XMLs fetched from the Junos Space Platform database, and jobs triggered and nodes that execute these jobs. For more information about Junos Space debug utilities, see “[Junos Space Debug Utilities Overview](#)” on page 35.

### Related Documentation

- [Overall System Condition and Fabric Load History Overview on page 6](#)
- [Junos Space Network Management Platform Widgets on page 9](#)

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## Overall System Condition and Fabric Load History Overview

You can view the overall Junos Space system condition and fabric load from the Junos Space Network Management Platform Dashboard or the Administration statistics page.

## Overall System Condition

To calculate the overall Junos Space system condition, Junos Space Platform uses a formula based on cluster health and node-function health:

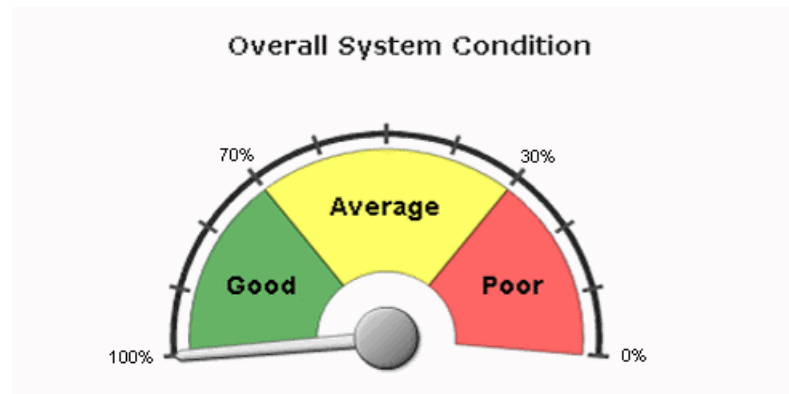
- Cluster health indicates the percentage of nodes in the fabric that are currently running.  
For example, if only three nodes are reachable in a four-node fabric, cluster health is 75%.
- Load-balancer health indicates the percentage of nodes (enabled for load balancing) that are running the load-balancing process.  
For example, if two nodes are enabled for load balancing and the load-balancing process is running on only one node, the load-balancing health is 50%.
- Database health indicates the percentage of nodes (enabled for database requests) that are running the database process.  
For example, if two nodes are enabled as the database server and the database process is running on only one node, then database health is 50%.
- Application-logic health indicates the percentage of nodes (enabled for application logic (DML and business logic) that are running the application-logic process.  
For example, if three nodes are enabled for application logic and the application-logic process is running on only two nodes, then application-logic health is 67%.

Junos Space Platform retrieves data on the nodes and the node functions that are running, and then applies the following formula to determine the overall Junos Space system condition:  $\text{Overall System Condition} = [(\text{Number of Nodes Running}) / (\text{Number of Nodes in Fabric})] * [(\text{Number of Nodes Running Load\_Balancing Process}) / (\text{Number of Nodes enabled for Load Balancing})] * [(\text{Number of Nodes Running Database-Server Process}) / (\text{Number of Nodes Enabled As Database Server})] * [(\text{Number of Nodes Running Application-Logic Process}) / (\text{Number of Nodes Enabled for Application Logic})]$

The overall Junos Space system condition is expressed as a percentage. If we use the values in the preceding examples in this formula, then the overall system condition would be calculated as:  $\text{Overall System Condition} = 75\% * 50\% * 50\% * 67\% = 12.5\%$ .

A value between 0 and 30% indicates that the system health is Poor, a value between 30% and 70% indicates that the system health is average, and a value between 70% and 100% indicates that the system health is good. The **Overall System Condition** chart displays the system health as shown in [Figure 1 on page 8](#)

Figure 1: Overall System Condition Gauge



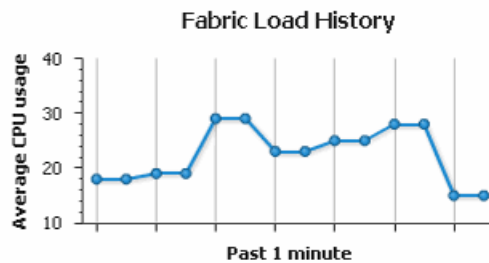
The overall system health indicates 0% (Poor) when any one of the following conditions is detected:

- No nodes in the fabric are running.
- No nodes enabled for load balancing are running the load-balancing process.
- No nodes enabled for database requests are running the database process.
- No nodes enabled for application logic are running the application-logic process.

## Fabric Load History

The Fabric Load History chart, as shown in [Figure 2 on page 8](#), displays the average CPU usage across all nodes that are running in the fabric.

Figure 2: Fabric Load History Chart



Junos Space Platform uses the following formula to determine the fabric load: Fabric Load = (Total CPU Usage for All Nodes Running) / (Number of Nodes Running)

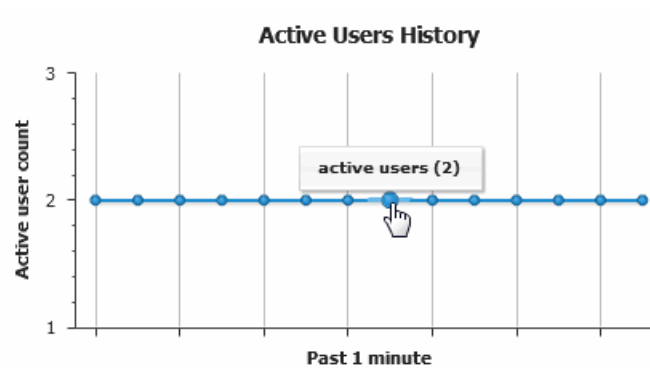
For example, for a fabric with three nodes running and CPU usage of 80%, 30%, and 10%, respectively, the fabric load is 40%.

## Active Users History

The Active Users History chart, as shown in [Figure 3 on page 9](#), displays the number of active users in the past one minute.



Figure 3: Active Users History Chart



- Related Documentation**
- [Viewing the Junos Space Platform Dashboard](#)
  - [Viewing the Administration Statistics](#)

## Junos Space Network Management Platform Widgets

This topic presents a list of workspaces in Junos Space Network Management Platform and the widgets that they display:

- [Devices on page 9](#)
- [Device Templates on page 10](#)
- [CLI Configlets on page 10](#)
- [Images and Scripts on page 10](#)
- [Reports on page 11](#)
- [Network Monitoring on page 11](#)
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- [Role Based Access Control on page 12](#)
- [Audit Logs on page 12](#)
- [Administration on page 12](#)

### Devices

The Devices workspace displays the following widgets:

- **Device Count by Platform**—Number of Juniper Networks devices added per device platform
- **Device Status**—Percentage of devices with the UP, Down, or NA connection status
- **Device Count by OS**—Number of devices running a particular Junos OS version
- **Device Count by Synchronization State**—Device discovery targets that were discovered, failed, are managed

For more information about these widgets, refer to the *Viewing Device Statistics* topic in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Device Templates

The Device Templates workspace displays the following widgets:

- Template Status—Percentage of device templates with the Enabled and Need Review statuses
- Template Definition Status—Percentage of device templates that are Published and Unpublished statuses
- Template Count by Device Family—Number of device templates created per device family

For more information about these widgets, refer to the *Viewing Device Template Statistics* and *Viewing Template Definition Statistics* topics in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## CLI Configlets

The CLI Configlets workspace displays the following widgets:

- CLI Configlet Count by Device Family—Number of CLI configlets created per device family
- Configuration Viewer Count by Device Family—Number of configuration views per device family

For more information about these widgets, refer to the *Viewing CLI Configlet Statistics* and *Viewing Configuration Views Statistics* topics in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Images and Scripts

The Images and Scripts workspace displays the following widgets:

- Device Image Count by Platform Group—Number of device images per platform group
- Device Images Count by Version—Number of device images created per Junos OS version
- Number of Scripts by Type—Number of scripts created per script type. The script types are : Commit, Op, and Event
- Number of Jobs per Script Action—Number of jobs triggered by different script-related actions

For more information about these widgets, refer to the *Viewing Statistics for Device Images and Scripts* topic in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Reports

The Reports workspace displays the following widgets:

- Report Definition Count by User—Number of report definitions created per user
- Report Count by User—Number of reports created per user

For more information about these widgets, refer to the *Viewing Report Statistics* and *Viewing Report Definition Statistics* topics in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Network Monitoring

The Network Monitoring workspace displays the following widgets:

- Nodes with Pending Problems—Nodes with outstanding alarms
- Nodes with Outages—Nodes that reported outages
- Availability Over the Past 24 hours—Number and percentage availability of the network interfaces of the devices that reported outages
- Notification—Check for notifications sent to you, all Junos Space Platform users, and the on-call schedule to fix outages.
- Resource Graphs—Search for resource graphs. Resource graphs display data collected from managed nodes throughout your network such as critical SNMP performance, response time, and so forth.
- KSC Reports—Search for key SNMP customized (KSC) reports. KSC reports enable you to create and view SNMP performance data using prefabricated graph types.
- Quick Search—Search for nodes by node ID, node label, IP address, or the type of service whether ICMP or SNMP.

For more information about these widgets, refer to the *Network Monitoring Reports Overview* topic in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Configuration Files

The Configuration Files workspace displays the following widgets:

- Configuration File Count by Device Family—Number of configuration files per device family
- Devices with most Frequently Revised Configuration Files—Devices whose configuration files have been revised most number of times

For more information about these widgets, refer to the *Viewing Configuration File Statistics* topic in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Jobs

The Jobs workspace displays the following widgets:

- Job Types—Percentage of all jobs of a particular type that are run
- State of Jobs Run—Percentages of jobs that succeeded, are canceled, are in progress, or failed
- Average Execution Time per Completed Job— Each bar in the Average Execution Time per Completed Job bar chart represents a job type and the average execution time in seconds.

For more information about these widgets, refer to the *Viewing Statistics for Jobs* topic in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Role Based Access Control

The Role Based Access Control workspace displays the following widget:

- Number of Users Assigned by Role—Percentage and the number of users that are assigned to a role

For more information about these widgets, refer to *Viewing User Statistics*.

## Audit Logs

The Audit Logs workspace displays the following widgets:

- Audit Log Statistical Graph—Tasks that are performed and logged in all Junos Space applications over a specific period of time
- Top 10 Active Users in 24 hours—Top ten users who performed the most number of tasks over 24 hours

For more information about these widgets, refer to the *Viewing Audit Log Statistics* topic in the *Junos Space Network Management Platform Workspaces Feature Guide*.

## Administration

The Administration workspace displays the following widgets:

- System Health—Junos Space system condition, load on the fabric, and active users.
- System Alert Messages in the last 30 days—SMTP server alert messages categorized by application, and when the error last occurred.
- System Health Report—Health and performance of the Junos Space nodes in your Junos Space setup and the processes on these nodes. Starting in Release 15.2R1, the Administration workspace displays the System Health Report widget.

For more information about these widgets, refer to the *Viewing the Administration Statistics* topic in the *Junos Space Network Management Platform Workspaces Feature Guide*.

**Release History Table**

Release	Description
15.1R2	Starting in Release 15.2R1, the Administration workspace displays the System Health Report widget.

**Related Documentation**

- [Overall System Condition and Fabric Load History Overview on page 6](#)
- [Junos Space Debug Utilities Overview on page 35](#)



## PART 2

# Log Files and Debug Utilities

- [Troubleshooting Junos Space Network Management Platform Issues by Using Log Files on page 17](#)
- [Troubleshooting Network Devices by Using Junos Space Debug Utilities on page 35](#)





## CHAPTER 2

# Troubleshooting Junos Space Network Management Platform Issues by Using Log Files

- [System Status Log File Overview](#) on page 17
- [Junos Space Network Management Platform Log Files Overview](#) on page 19
- [Troubleshooting Log File Overview](#) on page 22
- [Downloading the Troubleshooting Log File in Server Mode](#) on page 23
- [Downloading the Troubleshooting Log File in Maintenance Mode](#) on page 27
- [Downloading Troubleshooting System Log Files Through the Junos Space CLI](#) on page 28
- [Customizing Node System Status Log Checking](#) on page 32
- [Customizing Node Log Files to Download](#) on page 33

## System Status Log File Overview

---

The system writes a system log file for each fabric node to provide troubleshooting and monitoring information. See [“System Status Log File”](#) on page 17.

The System Administrator can customize the information that is collected in the system log file. See [“Customizing Node System Status Log Checking”](#) on page 32.

The System Administrator can download the latest log files for each fabric node when logged in to a Junos Space Appliance. See [“Downloading System Log Files for a Junos Space Appliance”](#) on page 18.

In each operating mode, the System Administrator can customize the default log files that are downloaded from a Junos Space Appliance. See [“Customizing Node Log Files to Download”](#) on page 33.

## System Status Log File

Approximately once a minute, the system checks and writes a status log file **SystemStatusLog** for each fabric node by default. Each log file consists of system status, such as the disk, CPU, and memory usage information, as shown. Junos Space Network Management Platform writes each system status log file to `/var/log/SystemStatusLog`

```

2009-08-10 11:51:48,673 DEBUG [net.juniper.jmp.cmp.nma.NMAResponse]
(Thread-110:)
Node IP: 192.0.2.0Filesystem          1K-blocks      Used Available Use%
Mounted on
/dev/mapper/Vo1Group00-LogVo100
              79162184 15234764 59841252 21% /
Cpu(s):  8.7%us,  1.1%sy,  0.0%ni, 90.0%id,  0.1%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:   3866536k total, 2624680k used, 1241856k free,   35368k buffers
Swap: 2031608k total,  941312k used, 1090296k free,  439704k cached

```

### Customizing Status Log File Content

The System Administrator can customize the information that is written in a fabric node system status log file. For more information, see “[Customizing Node System Status Log Checking](#)” on page 32.

## Downloading System Log Files for a Junos Space Appliance

The System Administrator can download the latest log files for each fabric node when logged in to a Junos Space Appliance. The system status log file and all other third-party log files are collected and compressed in a troubleshooting file.

[Table 3 on page 18](#) lists the files included in the **troubleshoot** file.

**Table 3: Log Files included in the troubleshoot File**

Description	Location
System status log files	<code>/var/log/SystemStatusLog</code>
JBoss log files	<code>/var/log/jboss/*</code>
Service-provisioning data files	<code>/var/tmp/jboss/debug/*</code>
MySQL error log files	<code>/var/log/mysqld.log</code>
Log files for Apache, Node Management Agent (NMA), and Webproxy	<code>/var/log/httpd/*</code>
Watchdog log files	<code>/var/log/watchdog/*</code>
System messages	<code>/var/log/messages/*</code>

The System Administrator can download log files in each operation mode as follows:

- Server mode (See “[Downloading the Troubleshooting Log File in Server Mode](#)” on page 23.)
- Maintenance mode (See “[Downloading the Troubleshooting Log File in Maintenance Mode](#)” on page 27.)
- CLI mode (See “[Downloading Troubleshooting System Log Files Through the Junos Space CLI](#)” on page 28.)

### Customizing Log Files to Download

The System Administrator can also customize the log files to be downloaded for specific fabric nodes. For more information about customizing node log files to download, see “Customizing Node Log Files to Download” on page 33.

#### Related Documentation

- [Customizing Node System Status Log Checking on page 32](#)
- [Customizing Node Log Files to Download on page 33](#)
- [Downloading the Troubleshooting Log File in Server Mode on page 23](#)
- [Downloading the Troubleshooting Log File in Maintenance Mode on page 27](#)
- [Downloading Troubleshooting System Log Files Through the Junos Space CLI on page 28](#)

## Junos Space Network Management Platform Log Files Overview

Junos Space Network Management Platform log files contain useful information that help you to identify, analyze, and troubleshoot issues related to Junos Space Network Management Platform. The software components of Junos Space Network Management Platform—JBoss, Apache Web server, MySQL, and CentOS—generate these log files.

[Table 4 on page 19](#) lists log files related to the software components of Junos Space Network Management Platform.

*Table 4: Junos Space Network Management Platform Log Files*

Software Component	Description of the Log Files
Apache Web server	Log files from the Apache Web server, NMA, and Web proxy
JBoss	Log files from JBoss, Junos Space core, and hosted Junos Space applications
MySQL	Log files from MySQL servers
CentOS	Linux-based system log messages
Node Management Agent	Log files for system statuses and Junos Space and watchdog processes

In addition to the log files related to software components, you can also refer to the `/var/log/install.log` log file for information about Junos Space Platform upgrades and Junos Space application installations.

- [Apache Web Server Log Files on page 20](#)
- [JBoss Application Server Log Files on page 20](#)
- [MySQL Database Log Files on page 21](#)
- [Node Management Agent Log Files on page 21](#)

## Apache Web Server Log Files

You can view the Apache Web server log files to view information related to HTTPS requests, Apache modules, and CGI programs.

Table 5 on page 20 lists the Apache Web server log files.

Table 5: Apache Web Server Log Files

Log File	Description
<code>/var/log/httpd/access_log</code>	Logs related to incoming HTTPS requests
<code>/var/log/httpd/error_log</code>	Error logs for both Apache Web server modules and CGI programs
<code>/var/log/httpd/ssl_error_log</code>	Error logs related to SSL certificates

## JBoss Application Server Log Files

JBoss is used as an application server in Junos Space Network Management Platform. It provides a runtime environment for plug-and-play Junos Space applications and supports standard packaging of pluggable applications based on the `.ear` file format. It also supports hot plug-and-play deployment of Junos Space applications when the system is fully operational.

JBoss provides three configuration options: minimal, default, and all. Junos Space Network Management Platform specifies **all** as the default JBoss configuration option.

Table 6 on page 20 lists the JBoss directories.

Table 6: JBoss Directories

Type of JBoss Directory	JBoss Directory
Home directory	<code>/usr/local/jboss</code>
Log directory	<code>/var/log/jboss</code>
Data directory	<code>/var/spool/jboss</code>
tmp directory	<code>/var/tmp/jboss</code>

Table 7 on page 20 lists the JBoss log files available in the `/var/log/jboss/servers/server1/` directory. You can also refer to the console file available in the `/var/log/jboss/` directory for console messages from JBoss.

Table 7: Joss Log Files

Log File Name	Description
<code>boot.log</code>	JBoss boot log file

Table 7: Joss Log Files (continued)

Log File Name	Description
<b>console.log</b>	Console log file
<b>process-controller.log</b>	Log file that contains records about starting and stopping services in domain mode
<b>host-controller.log</b>	Log file that contains information about the host controller that starts and stops the application server
<b>provisioning.log</b>	Service Provisioning application log file
<b>server.log</b>	JBoss Application server log file
<b>long-jpa-txn.log</b>	EJB transactions log file
<b>Provisioning.log</b>	Network Activate log file
<b>Qos.log</b>	QoS Design log file
<b>SD.log</b>	Security Director log file

The Junos Space Service Provisioning application stores XML data files in the `/var/tmp/jboss/debug` directory for debugging purposes. Service request deployment, service functional audits, and any reported deployment errors from the devices are captured and stored in these XML data files.

## MySQL Database Log Files

You use the MySQL database log files to view information related to the Junos Space Network Management Platform database.

Table 8 on page 21 lists the MySQL database log files.

Table 8: MySQL Database Log Files

Log File	Description
<code>/var/log/mysql.log</code>	Primary log file for MySQL-related procedures
<code>var/lib/mysql/log-slow-queries.log</code>	Log file for slow queries

## Node Management Agent Log Files

A Node Management Agent (NMA) is a daemon that runs on every Junos Space node. An NMA manages the configuration files for the software components of Junos Space Network Management Platform—JBoss, MySQL, and Apache. An NMA also monitors the usage of system resources, such as CPU, memory, and disk space, and the health of the other server processes.

Table 9 on page 22 lists the NMA log files.

Table 9: NMA Log Files

Log File	Description
<code>/var/log/nma.log</code>	Logs that contain information about operations executed on the NMA
<code>/var/log/httpd/error_log</code>	Error logs from NMA CGI scripts
<code>/var/log/watchdog</code>	Logs related to starting and stopping processes on Junos Space Network Management Platform
<code>/var/log/SystemStatusLog</code>	Logs related to CPU, memory, and disk space usage by Junos Space Network Management Platform

**Related Documentation** • [Troubleshooting Log File Overview on page 22](#)

## Troubleshooting Log File Overview

The troubleshooting log file is a **zip** or **tar** package that contains the log files generated by different software components of Junos Space Network Management Platform and service provisioning data files.

You can download the troubleshooting log file from the Junos Space user interface in sever mode, by accessing the Junos Space Appliance URL in maintenance mode, or from the Junos Space Appliance console in CLI mode. The troubleshooting log file is downloaded as a zip package in server mode and maintenance mode, and as a tar package in CLI mode.

- Server mode (See “[Downloading the Troubleshooting Log File in Server Mode](#)” on page 23.)
- Maintenance mode (See “[Downloading the Troubleshooting Log File in Maintenance Mode](#)” on page 27.)
- CLI mode (See “[Downloading Troubleshooting System Log Files Through the Junos Space CLI](#)” on page 28.)

You need to be assigned the system administrator role to download the troubleshooting log file in server mode and maintenance mode.

Junos Space Network Management Platform automatically names the troubleshooting zip package in the `troubleshoot_yyyy-mm-dd_hh-mm-ss.zip` format. The date and time is represented in the Coordinated Universal Time (UTC) format. For example, `troubleshoot_2010-04-01_11-25-12.zip`.

Table 10 on page 23 lists the files in this zip package.

Table 10: List of Log Files in the Troubleshooting Log File

Description	Location
JBoss log files	<code>/var/log/jboss/*</code>
Service provisioning data files	<code>/var/tmp/jboss/debug/*</code>
MYSQL error log file	<code>/var/log/mysqld.log</code>
Apache, NMA, and Webproxy log files	<code>/var/log/httpd/*</code>
Watchdog log file	<code>/var/log/watchdog/*</code>
Linux system messages	<code>/var/log/messages/*</code>
CPU, RAM, and disk statistics (during past 24 hours)	<code>/var/log/SystemStatusLog</code>

#### Related Documentation

- [Junos Space Network Management Platform Log Files Overview on page 19](#)
- [Downloading the Troubleshooting Log File in Server Mode on page 23](#)
- [Downloading the Troubleshooting Log File in Maintenance Mode on page 27](#)
- [Downloading Troubleshooting System Log Files Through the Junos Space CLI on page 28](#)

## Downloading the Troubleshooting Log File in Server Mode

You download the troubleshooting log file in Server mode when you want to view the contents of the troubleshooting log file and fix issues. You need to have the privileges of a System Administrator to download the troubleshooting log file.

Before you download the troubleshooting log file in Server mode:

- Ensure that you check the available disk space on the Junos Space node. The **Lack Of Space** error message is displayed if the disk space is insufficient.
- Ensure that a troubleshooting log download job you triggered earlier is not in progress. An error message is displayed if you trigger another troubleshooting log download job while a previous download job is in progress.



**NOTE:** On a multinode setup, the troubleshooting log file is stored at the following location on the Junos Space node that completes the job: `/var/cache/jboss/space-logs`. You cannot download the troubleshooting log file if this node goes down.

To download the troubleshooting log file in Server mode:

1. On the Junos Space Network Management Platform user interface, select **Administration > Space Troubleshooting**.

The Space Troubleshooting page is displayed.



2. Select whether to download the troubleshooting log file now or later.

- To download the troubleshooting log file now:

i. Click **Download**.

The Collect Junos Space Logs Job Information dialog box is displayed.

ii. Click **OK** in the dialog box.

You can download the troubleshooting log file from the Job Management page.

iii. Double-click the ID of the troubleshooting log collection job on the Job Management page.

The Job Details dialog box is displayed.

iv. Click the **Download** link to access the `troubleshoot_yyyy-mm-dd_hh-mm-ss.zip` file in your browser.

The filename of the troubleshoot zip file includes the server Coordinated Universal Time (UTC) date and time. For example, **troubleshoot\_2010-04-01\_11-25-12.zip**.

- If you are using Mozilla Firefox: In the Opening troubleshoot zip dialog box, click **Save file**, then click **OK** to save the zip file to your computer using the Firefox Downloads dialog box.
- If you are using Internet Explorer: From the File Download page, click **Save** and select a directory on your computer where you want to save the `troubleshoot_yyyy-mm-dd_hh-mm-ss.zip` file.



**NOTE:** If the download job failed, the Job Details dialog box displays the reason the job failed.

Table 11 on page 25 lists the files included in the `troubleshoot_yyyy-mm-dd_hh-mm-ss.zip` file.

**Table 11: Log Files in the Troubleshooting Log File and Their Location**

Log File Description	Location
System status log file	<code>/var/log/SystemStatusLog</code>
JBoss log files	<code>/var/log/jboss/*</code>
Service provisioning data files	<code>/var/tmp/jboss/debug/*</code>
MySQL error log file	<code>/var/log/mysql.log</code>
Apache Web Server, NMA, and Web proxy log files	<code>/var/log/httpd/*</code>

*Table 11: Log Files in the Troubleshooting Log File and Their Location (continued)*

Watchdog log files	<code>/var/log/watchdog/*</code>
Linux system log messages	<code>/var/log/messages/*</code>
CPU, RAM, or disk statistics (for the past 24 hours)	–
Heap and CPU Profiling Agent (HPROF) files	<code>/var/log/jboss</code>

- To download the troubleshooting log file later:
  - i. Select the **Schedule at a later time** option button.
  - ii. Enter the date in the **Date** field in the DD/MM/YYYY format.
  - iii. Enter the time in the **Time** field in the hh:mm format.
  - iv. Click **Download**.

The troubleshooting log download job is triggered at the scheduled time. You can view the status of the scheduled job on the Job Management page.



**TIP:** When you contact Juniper Technical Assistance Center, describe the problem you encountered and provide the `troubleshoot_yyyy-mm-dd_hh-mm-ss.zip` file to the JTAC representative.

3. Click **Close** to return to the Administration statistics page.

#### Related Documentation

- [System Status Log File Overview on page 17](#)
- [Customizing Node System Status Log Checking on page 32](#)
- [Customizing Node Log Files to Download on page 33](#)
- [Downloading the Troubleshooting Log File in Maintenance Mode on page 27](#)
- [Downloading Troubleshooting System Log Files Through the Junos Space CLI on page 28](#)

## Downloading the Troubleshooting Log File in Maintenance Mode

*Maintenance Mode* is a special mode that an administrator can use to perform system recovery or debugging tasks while all nodes in the fabric are shut down and the Web proxy is running.

The administrator can download the `troubleshoot_yyyy-mm-dd_hh-mm-ss.zip` file from Maintenance Mode. The troubleshoot zip file includes the server Coordinated Universal Time (UTC) date and time. For example, `troubleshoot_2010-04-01_11-25-12.zip`.

To download the troubleshooting log file in maintenance mode, perform the following steps:

1. Connect to a Junos Space Appliance in maintenance mode by using the Junos Space Appliance URL.

For example:

```
https://<ipaddress>/maintenance
```

Where *ipaddress* is the address of the Junos Space Appliance.

The Maintenance Mode page appears.

2. Click the **click here to log in** link. The login dialog box appears.
3. Log in to maintenance mode by using the authorized login name and password.
4. Click OK. The Maintenance Mode Actions menu appears.
5. Click **Download Troubleshooting Data and Logs**. The file download dialog box appears.
6. Click Save to download the `troubleshoot_yyyy-mm-dd_hh-mm-ss.zip` file to the connected computer.
7. Click **Log Out and Exit from Maintenance Mode**.

### Related Documentation

- [Maintenance Mode Overview](#)
- [System Status Log File Overview on page 17](#)
- [Customizing Node System Status Log Checking on page 32](#)
- [Customizing Node Log Files to Download on page 33](#)
- [Downloading the Troubleshooting Log File in Server Mode on page 23](#)
- [Downloading Troubleshooting System Log Files Through the Junos Space CLI on page 28](#)

## Downloading Troubleshooting System Log Files Through the Junos Space CLI

If a Junos Space node is Up, the administrator can log in to the Junos Space node and download system status logs for each fabric node by using the Secure Copy Protocol (SCP). If the Junos Space node is Down but you can log in to the console of a Junos Space Appliance, you can download system status logs to a USB drive.

The **Retrieve Logs** utility collects all system log files in the `/var/log` subdirectory and creates a compressed TAR file (extension `*.tgz`). For more information about the log files that are written, see “[System Status Log File Overview](#)” on page 17.

This topic includes the following sections:

- [Downloading a System Log File by Using a USB Device on page 28](#)
- [Downloading System Log File by Using SCP on page 29](#)

### Downloading a System Log File by Using a USB Device

Using the **Retrieve Logs > Save to USB Device** command, the administrator can download system status logs to a connected USB device if the Junos Space node is Down and you can log in to the console.

Before you begin, ensure that the USB device is connected to the Junos Space Appliance.

1. Log in to the Junos Space Appliance using the administrator username (admin) and password.

The Junos Space Settings Menu appears, as shown.

```
Junos Space Settings Menu
1> Change Password
2> Change Network Settings
3> Change Time Options
4> Retrieve Logs
5> Security
6> (Debug) run shell

Q> Quit
R> Redraw Menu

Choice [1-6,QR]:
```

2. Type 4 at the prompt.

The Retrieve Logs submenu appears.

```
Choice [1-6,AQR]: 4
1> Save to USB Device
2> Send Using SCP

A> Apply changes
M> Return to Main Menu
```

```
R> Redraw Menu
Choice [1-2,AMR]:
```

3. Type 1.

The following message is displayed: **This process will retrieve the log files on all cluster members and combine them into a .tar file. Once the file is created, you can copy the files onto a USB drive. Continue? [y/n]**

4. Type y to continue.

You are prompted to enter the administrator password.

5. Enter the administrator password.

The system downloads the log files from all the nodes in the fabric and combines them into a .tar file. After the file is created, the file is copied to the USB device and a message similar to the following is displayed: **Copying 20090827-1511-logs.tar to USB drive.**



**NOTE:** If the USB device is not ready, the following message appears: **Log collection complete If USB key is ready, press "Y". To abort, press "N".**

6. After the files are copied, unmount the USB and eject it from the Junos Space Appliance.

## Downloading System Log File by Using SCP

Using the Junos Space CLI **Retrieve Logs > SCP** command, the administrator can download system status logs to a specific location.

To download system status logs by using SCP, perform the following steps:

1. Log in to the Junos Space node using the administrator username (admin) and password.

The Junos Space Settings Menu appears, as shown.

```
Junos Space Settings Menu

1> Change Password
2> Change Network Settings
3> Change Time Options
4> Retrieve Logs
5> Security
6> (Debug) run shell

Q> Quit
R> Redraw Menu

Choice [1-6,QR]:
```

2. Type 4 at the prompt.

The Retrieve Logs submenu appears.

```
Choice [1-6,AQR]: 4
1> Save to USB Device
2> Send Using SCP

A> Apply changes
M> Return to Main Menu
R> Redraw Menu

Choice [1-2,AMR]:
```

3. Type 2.

The following confirmation message is displayed:

```
This process will retrieve the log files on all cluster members and combine them into a .tar file. Once the file is created, you will be asked for a remote scp server to transfer the file to. Continue? [y/n]
```

4. Type y to continue.

You are prompted to enter the administrator password.

5. Enter the administrator password.

A message indicating that the log files are being collected is displayed. The process retrieves the log files on all cluster members and combines them into a **.TAR** file. This might take a few minutes to complete.

After this is completed, you are prompted to enter the IP address of the remote server.

6. Enter the IP address of the SCP server to which to transfer the file.



**NOTE:**

- Depending on whether the Junos Space fabric is configured with only IPv4 addresses or both IPv4 and IPv6 addresses, Junos Space Platform allows you to enter an IPv4 address or either an IPv4 or IPv6 address respectively for the SCP server.
- The IPv4 and IPv6 addresses that you use must be valid addresses. Refer to <http://www.iana.org/assignments/ipv4-address-space> for the list of restricted IPv4 addresses and <http://www.iana.org/assignments/ipv6-address-space> for the list of restricted IPv6 addresses.

7. Enter the remote SCP user.
8. Enter the directory on the remote SCP server where the log file should be stored; for example, `/root/tmplogs`.

The remote server information that you entered is displayed. The following is a sample:

```
Remote scp IP: 192.0.2.0
Remote scp user: root
Remote scp path: /root/tmplogs
Is this correct? [y/n]
```

9. If the SCP server information is correct, type `y`.

If you are connecting to the SCP server for the first time, a message is displayed asking you to confirm that you want to continue. The following is a sample message:

```
The authenticity of host '192.0.2.0 (192.0.2.0)' can't be established.
RSA key fingerprint is 01:70:4c:47:9e:1e:84:fc:69:3c:65:99:6d:e6:88:87.
Are you sure you want to continue connecting (yes/no)? yes
```



**NOTE:** If the SCP server information is incorrect or if you want to modify the SCP server information, type `n` at the prompt, and modify the SCP server information as explained in the preceding steps.

10. Type `y` to continue.

You are prompted to enter the password.

11. Enter the password for the SCP server.

If the credentials are correct, the file is transferred to the SCP server.

- Related Documentation**
- [Maintenance Mode Overview](#)
  - [System Status Log File Overview on page 17](#)
  - [Customizing Node System Status Log Checking on page 32](#)
  - [Customizing Node Log Files to Download on page 33](#)
  - [Downloading the Troubleshooting Log File in Server Mode on page 23](#)
  - [Downloading the Troubleshooting Log File in Maintenance Mode on page 27](#)

## Customizing Node System Status Log Checking

You customize the system status checking for a fabric node to ensure that all necessary information is written to the `/var/log/SystemStatusLog` log file. You must have the privileges of a System Administrator to customize the system status checking. You customize the system status checking by modifying the fabric node Perl script in `/usr/nma/bin/writeLogCronJob`.

To customize system status checking for a fabric node, modify the `writeSystemStatusLogFile` sub-function in `writeLogCronJob` as shown:

```
sub writeSystemStatusLogFile{
    my $err = 0;
    my $logfile = $_[0];
    $err = system("date >> $logfile");
    $err = system("df /var >> $logfile");
    $err = system("top -n 1 -b | grep Cpu >> $logfile");
    $err = system("top -n 1 -b | grep Mem: >> $logfile");
    $err = system("top -n 1 -b | grep Swap: >> $logfile");

    ***<Add additional system command here that you want to print out in the
    SystemStatusLog file>***

    if ($err == 0 ) {
        print "write log to $logfile successfully\n";
    } else {
        print "cannot write log to $logfile\n";
    }
    return $err;
}
```

- Related Documentation**
- [System Status Log File Overview on page 17](#)
  - [Customizing Node Log Files to Download on page 33](#)
  - [Downloading the Troubleshooting Log File in Server Mode on page 23](#)
  - [Downloading the Troubleshooting Log File in Maintenance Mode on page 27](#)
  - [Downloading Troubleshooting System Log Files Through the Junos Space CLI on page 28](#)



## Customizing Node Log Files to Download

You customize the log files downloaded for a fabric node to ensure that you download all the necessary log files. You must have the privileges of a System Administrator to customize the log files. You customize the log files you want to download by modifying the Perl script in `/var/www/cgi-bin/getLogFiles`.

Modify the `getLogFiles` Perl script zip command as shown:

```
. . .
system("zip -r $logFileName /var/log/jboss/* /var/tmp/jboss/debug/
/var/log/mysqlld.log /var/log/httpd/* /var/log/watchdog /var/log/messages
/var/log/SystemStatusLog > /dev/null");
. . .
```

### Related Documentation

- [System Status Log File Overview on page 17](#)
- [Customizing Node System Status Log Checking on page 32](#)
- [Downloading the Troubleshooting Log File in Server Mode on page 23](#)
- [Downloading the Troubleshooting Log File in Maintenance Mode on page 27](#)
- [Downloading Troubleshooting System Log Files Through the Junos Space CLI on page 28](#)



## CHAPTER 3

# Troubleshooting Network Devices by Using Junos Space Debug Utilities

- [Junos Space Debug Utilities Overview on page 35](#)
- [Executing Device-Connection Debug Scripts on page 39](#)
- [Executing Device Import Detail Script and Java Application on page 50](#)
- [Executing Job Management Scripts and Java Applications on page 52](#)
- [Executing HornetQ Scripts on page 61](#)

## Junos Space Debug Utilities Overview

---

Junos Space debug utilities allow you to debug issues related to Junos Space nodes and devices managed by Junos Space Network Management Platform and view details about jobs scheduled on Junos Space Network Management Platform. Junos Space debug utilities are a collection of scripts and Java applications stored at `/var/log/space-debug/debug-utilities`. These scripts and Java applications are organized under the following categories: `deviceConnection`, `jobManagement`, `deviceImport`, and `HornetQ`. You can save the output of the scripts at a custom location. By default, the output of the scripts is stored at the location where the scripts are stored.

The following scripts and Java applications are available for debugging:

- [Device-Connection Debug Scripts on page 35](#)
- [Device Import Scripts and Java Applications on page 37](#)
- [Job Management Scripts and Java Applications on page 37](#)
- [HornetQ Scripts on page 38](#)

## Device-Connection Debug Scripts

The device-connection debug scripts stored at `/var/log/space-debug/debug-utilities/deviceConnection/` fetch and display device-connection information from `DeviceDataMatrix`. `DeviceDataMatrix` is a memory data structure in the Junos Space Network Management Platform database that stores device-connection information. You can also view this information through `JConsole` or `JMXTerm`.

The following are the device-connection debug scripts:

- [getDeviceInfo.sh](#) on page 36
- [DeviceDebugInfoCollector.sh](#) on page 36
- [getAllDeviceInfo.sh](#) on page 36
- [cleanupEditChannel.sh](#) on page 36

---

### [getDeviceInfo.sh](#)

**getDeviceInfo.sh** is a script to collect device-connection information for a single device. The script output displays the device ID (as stored in the Junos Space Platform database), IP address of the device, IP address of the Junos Space node to which the device is currently connected, status of the edit flag on the device, SSH control channel number, number of channels opened from the device, and details of the open channels.

---

### [DeviceDebugInfoCollector.sh](#)

**DeviceDebugInfoCollector.sh** is a script to execute frequently used Junos OS debug commands on a device. When you execute this script, SSH connections are initiated to the device from the Junos Space node you specified. The script output displays the list of active management daemon (MGD) processes on the device, active SSH daemon (SSHD) processes on the device, active SSH connections to Junos Space Platform from the device, and all active SSH connections from the device. You can also view additional details about each of these processes and SSH connections.

---

### [getAllDeviceInfo.sh](#)

**getAllDeviceInfo.sh** is a script to collect device-connection information about all devices that are connected to a Junos Space node. The script output displays the device ID (as stored in the Junos Space Platform database), IP address of the device, IP address of the Junos Space node to which the device is currently connected, status of the edit flag on the device, SSH control channel number, number of channels opened from the device, and details of the open channels about all devices that are connected to a Junos Space node. On a multinode setup, you can also collect this information for all Junos Space nodes.

---

### [cleanupEditChannel.sh](#)

**cleanupEditChannel.sh** is a script to unlock the device configuration on the device. Junos Space Platform sets a lock when you deploy a configuration from Junos Space Platform or Junos Space applications. You use this script to unlock the device configuration if the previous deployments were erroneous and you are currently unable to deploy the configuration from Junos Space Platform. You enter the variable *false* to unlock the device configuration.

For more information about executing device-connection debug scripts, see [“Executing Device-Connection Debug Scripts”](#) on page 39.

## Device Import Scripts and Java Applications

The device import scripts and Java applications stored at `/var/log/space-debug/debug-utilities/deviceImport/` clear the device import tables and fetch device inventory information or device configuration in XML format.

The following are the device import scripts and Java applications:

- [cleanupDeviceImportTables.sh on page 37](#)
- [DB-blob-reader.jar on page 37](#)

### [cleanupDeviceImportTables.sh](#)

**cleanupDeviceImportTables.sh** is a script to clean data from device import tables. You can execute the script to fix data errors during a device resynchronization process. You need to manually resynchronize the device with the Junos Space Platform database from the user interface after you execute the script.

### [DB-blob-reader.jar](#)

**DB-blob-reader.jar** is a Java application to collect the device information XML or interface information XML. When you execute this application, the information from the XML is written to the **DB-blob-reader-result.txt** file. This information can be useful for debugging device resynchronization issues. You can modify the MySQL query in the **DB-blob-reader.properties** file and fetch information based on that MySQL query. You can specify the following in the **DB-blob-reader.properties** file: device ID (as stored in the Junos Space Platform database) and name of the RPC, device configuration, or interface.

For more information about executing device import scripts and Java applications, see [“Executing Device Import Detail Script and Java Application” on page 50](#).

## Job Management Scripts and Java Applications

The job management scripts and Java applications stored at `/var/log/space-debug/debug-utilities/jobManagement/` fetch information about jobs executed from the Junos Space nodes. You can also view the output of the scripts through JConsole or JMXTerm.

The following are the job management scripts and Java applications:

- [SystemLoadViewer.sh on page 37](#)
- [getJobThreadSump.sh on page 38](#)
- [JobInfoCollector.jar on page 38](#)

### [SystemLoadViewer.sh](#)

**SystemLoadViewer.sh** is a script to collect information about available memory on all Junos Space nodes and the jobs triggered on these nodes. The script output displays information such as the memory on the nodes, number of root jobs and subjobs on each of the nodes, type of job (root job or subjob), state of the job (running, queued, or stopped), name of the job, queue name of the job, the time the job was created, and the time the

job was modified. The script output also displays the top five processes that consume CPU and memory when the script is executed.

### [getJobThreadSump.sh](#)

---

**getJobThreadSump.sh** is a script to view the stack trace of a specific job. You can also view the script output through JConsole or JMXTerm.

### [JobInfoCollector.jar](#)

---

**JobInfoCollector.jar** is a Java application to execute SQL queries and collect information about jobs. You can construct the SQL query in the **JobInfoCollector.properties** file. This file contains a default example query. The application can also display the hierarchy of a subjob (input as the parent job ID) and list of jobs that are currently unscheduled. You can also input a SQL query to obtain information about jobs.

For more information about executing job management scripts and Java applications, see [“Executing Job Management Scripts and Java Applications” on page 52](#).

## HornetQ Scripts

The HornetQ scripts stored at `/var/log/space-debug/debug-utilities/hornetQ/` display the list of all JBoss queues, of messages in a specific JBoss queue, or of jobs that are to be executed by a specific JBoss queue. You can also view the script output through JConsole or JMXTerm.

The following are the HornetQ scripts:

- [HornetQInfoProvider.sh on page 38](#)
- [HQMessageViewer.sh on page 38](#)

### [HornetQInfoProvider.sh](#)

---

**HornetQInfoProvider.sh** is a script to collect details about all HornetQ queues. The script output also lists details such as consumer-count, message-count, and scheduled-count.

### [HQMessageViewer.sh](#)

---

**HQMessageViewer.sh** is a script to view the list of messages in a specific JBoss queue. The script output displays the job ID and job operation name. You can view the jobs that are queued to be executed by a specific JBoss queue.

For more information about executing HornetQ scripts, see [“Executing HornetQ Scripts” on page 61](#).

#### Related Documentation

- [Junos Space Network Management Platform Log Files Overview on page 19](#)
- [Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform on page 3](#)

## Executing Device-Connection Debug Scripts

You execute the device-connection debug scripts to view information about device-connection issues related to Junos Space nodes and devices connected to these nodes. Device-connection scripts are stored at the following location:

`/var/log/space-debug/debug-utilities/deviceConnection`. When you execute these scripts, the output is stored as `.txt` files at the same location. You can also specify a custom path to store the output. The following sections list the steps to execute the scripts to collect information about device-connection issues.

- [Executing the Script to Collect Device-Connection Information on page 39](#)
- [Executing the Script to Collect Device Debug Information on page 41](#)
- [Executing the Script to Unlock the Device Configuration on page 45](#)
- [Executing the Script to Collect Node-Connection Information on page 45](#)

### Executing the Script to Collect Device-Connection Information

You execute the `getDeviceInfo.sh` script to collect device-connection information of a device.

To execute the script to collect device-connection information:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.  
  
The default username is **admin** and the default password is **abc123**.  
  
The Junos Space Settings Menu is displayed.
3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.

The following is a sample output from a virtual appliance:

```
admin@10.206.41.183's password:
Last login: Mon Aug 17 06:17:58 2015 from 10.206.41.42

Welcome to the Junos Space network settings utility.

Initializing, please wait

Junos Space Settings Menu

1> Change Password
2> Change Network Settings
3> Change Time Options
4> Retrieve Logs
```

```

5> Security
6> Expand VM Drive Size
7> (Debug) run shell

A> Apply changes
Q> Quit
R> Redraw Menu

Choice [1-7,AQR]: 7

```

4. Type the administrator password and press Enter.

The shell prompt appears.

5. Type `cd /var/log/space-debug/debug-utilities/deviceConnection` at the shell prompt and press Enter.

6. (Optional) To view the list of debug scripts, type `ls` and press Enter.

The list of device-connection debug scripts is displayed.

7. Type `./getDeviceInfo.sh<device-IP address>` and press Enter—for example, `./getDeviceInfo.sh 10.206.33.17`.

The output of this command is saved to the `DeviceInfo-<device-IP address>.txt` file in the same directory.

The following is a sample output:

```

-----
Time of execution: Wed Jul 15 05:45:26 UTC 2015
-----
Device Id: 131153 Device Ip: 10.206.33.17
Node id: 10.206.41.57
Connection state: Connected
Connection changed at: 07/14/2015 17:35:04
EditFlag : false
EditChannel num:0
SSH ctrl channel num: 4
Max channels allowed: 32
Number of channels opened: 4
-----

Channel details:
Channel Id: 1
Seq num: 11
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----

Channel Id: 2
Seq num: 14
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----

Channel Id: 3
Seq num: 22
Channel state: CHANNEL_STATE_OPEN

```



```

Channel type: Syslog
-----
Channel Id: 4
Seq num: 24
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----

```

- (Optional) To save node connection information at a custom output location, type `./getDeviceInfo.sh<device-IP address> <output-file-path>` and press Enter.

You can use the information from the `.txt` file to debug device-connection issues.

### Executing the Script to Collect Device Debug Information

You execute the `DeviceDebugInfoCollector.sh` script to collect information about the connections and processes on a device.

To execute the script to collect device debug information:

- Log in to the CLI of the Junos Space node.
- Enter the administrator username and password at the Junos Space login prompt and press Enter.  
The default username is **admin** and the default password is **abc123**.  
The Junos Space Settings Menu is displayed.
- Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.  
You are prompted to enter your password.
- Type the administrator password and press Enter.  
The shell prompt appears.
- Type `cd /var/log/space-debug/debug-utilities/deviceConnection` at the shell prompt and press Enter.
- (Optional) To view the list of debug scripts, type `ls`.  
The list of device-connection debug scripts is displayed.
- Type `./DeviceDebugInfoCollector.sh<device-IP address><device-username><node-VIP address>` and press Enter—for example, `./DeviceDebugInfoCollector.sh 10.206.32.107 user1 10.206.41.57..`
- Enter the device password.

The output from this command is saved to the `DeviceDebugInfo-<device-IPaddress>.txt` file in the same directory.

The following is a sample output:

Time of execution: Wed Jul 15 07:43:43 UTC 2015

List of MGD processes on the device : (Command Executed - `ps auxwww | sed -n "1p; /sed -n/d; /mgd/p;"`)

USER	PID	%CPU	%MEM	VSZ	RSS	TT	STAT	STARTED	TIME	COMMAND
user1	1841	0.0	0.0	41132	236	??	S	Fri12AM	0:10.15	/usr/sbin/mgd
-N										
user1	2310	0.0	0.0	41180	220	??	S	Fri12AM	0:06.62	mgd: (mgd)
(user1) (mgd)										
user1	2367	0.0	0.0	41180	220	??	S	Fri12AM	0:06.67	mgd: (mgd)
(user1) (mgd)										
user1	2424	0.0	0.0	41188	220	??	S	Fri12AM	0:06.54	mgd: (mgd)
(keybased) (mgd)										
user1	4243	0.0	0.1	41180	520	??	S	12:27AM	0:02.90	mgd: (mgd)
(user1) (mgd)										
user1	7662	0.0	0.1	41180	520	??	S	2:29AM	0:02.84	mgd: (mgd)
(user1) (mgd)										
user1	8595	0.0	0.2	41192	1664	??	Is	4:09AM	0:00.07	mgd: (mgd)
(user1)/dev/tty2 (mgd)										
user1	9065	0.0	0.0	41192	136	??	Is	4:39AM	0:00.05	mgd: (mgd)
(user1)/dev/tty1 (mgd)										
user1	10295	0.0	0.1	41180	520	??	S	6:12AM	0:02.67	mgd: (mgd)
(user1) (mgd)										
user1	11557	0.0	0.1	41180	520	??	S	8:03AM	0:02.66	mgd: (mgd)
(user1) (mgd)										
user1	15817	0.0	0.1	41180	520	??	S	3:26PM	0:02.34	mgd: (mgd)
(user1) (mgd)										
user1	18495	0.0	0.1	41180	520	??	S	8:16PM	0:02.13	mgd: (mgd)
(user1) (mgd)										
user1	18549	0.0	0.1	41180	520	??	S	8:20PM	0:02.13	mgd: (mgd)
(user1) (mgd)										
user1	18907	0.0	0.1	41180	520	??	S	8:22PM	0:02.14	mgd: (mgd)
(user1) (mgd)										
user1	19574	0.0	3.3	41180	25220	??	S	8:38PM	0:02.11	mgd: (mgd)
(user1) (mgd)										
user1	20290	0.0	0.6	41172	4876	??	Is	9:46PM	0:00.10	mgd: (mgd)
(user1)/dev/tty0 (mgd)										
user1	20794	0.0	3.3	41180	25228	??	S	9:52PM	0:02.06	mgd: (mgd)
(user1) (mgd)										
user1	21861	0.0	0.0	41180	220	??	S	Fri09PM	0:05.93	mgd: (mgd)
(user1) (mgd)										
user1	50416	0.0	0.1	41180	520	??	S	Sun08AM	0:04.53	mgd: (mgd)
(user1) (mgd)										
user1	63963	0.0	0.1	41180	520	??	S	Sun08PM	0:04.06	mgd: (mgd)
(user1) (mgd)										
user1	84282	0.0	0.1	41180	520	??	S	Mon10AM	0:03.55	mgd: (mgd)
(user1) (mgd)										

List of active sshd processes on the device : (Command Executed - `ps auxwww | sed -n "1p; /sed -n/d; /sshd/p;"`)

USER	PID	%CPU	%MEM	VSZ	RSS	TT	STAT	STARTED	TIME	COMMAND
user1	20972	1.7	0.4	7684	2916	??	Ss	10:11PM	0:00.15	sshd:
user1@notty (sshd)										

```

user1      1944 0.0 0.1 7784 692 ?? Ss  Fri12AM 1:00.95 sshd:
user1@notty (sshd)
user1      2354 0.0 0.1 7816 700 ?? Ss  Fri12AM 1:00.21 sshd:
user1@notty (sshd)
user1      2378 0.0 0.1 7820 700 ?? Ss  Fri12AM 1:00.39 sshd:
keybased@notty (sshd)
user1      3907 0.0 0.1 7784 772 ?? Ss  12:27AM 0:10.47 sshd:
user1@notty (sshd)
user1      5334 0.0 0.0 7676 320 ?? Is  1:25AM 0:00.30 sshd:
user1@tty1 (sshd)
user1      5361 0.0 0.1 7676 476 ?? Is  1:26AM 0:00.25 sshd:
user1@tty2 (sshd)
user1      7649 0.0 0.1 7784 776 ?? Ss  2:29AM 0:07.62 sshd:
user1@notty (sshd)
user1     10284 0.0 0.1 7784 468 ?? Ss  6:11AM 0:02.11 sshd:
user1@notty (sshd)
user1     11544 0.0 0.1 7784 776 ?? Ss  8:03AM 0:04.69 sshd:
user1@notty (sshd)
user1     15806 0.0 0.1 7784 788 ?? Ss  3:26PM 0:03.38 sshd:
user1@notty (sshd)
user1     18484 0.0 0.1 7784 792 ?? Ss  8:16PM 0:02.99 sshd:
user1@notty (sshd)
user1     18538 0.0 0.1 7784 776 ?? Ss  8:20PM 0:03.47 sshd:
user1@notty (sshd)
user1     18896 0.0 0.1 7796 784 ?? Ss  8:22PM 0:02.89 sshd:
user1@notty (sshd)
user1     19561 0.0 0.4 7784 2924 ?? Ss  8:38PM 0:02.41 sshd:
user1@notty (sshd)
user1     20272 0.0 0.4 7684 2900 ?? Is  9:46PM 0:00.26 sshd:
user1@tty0 (sshd)
user1     20783 0.0 0.4 7796 2932 ?? Ss  9:52PM 0:00.52 sshd:
user1@notty (sshd)
user1     21820 0.0 0.1 7800 696 ?? S  Fri09PM 0:47.90 sshd:
user1@notty (sshd)
user1     50401 0.0 0.1 7784 776 ?? Ss  Sun08AM 0:36.25 sshd:
user1@notty (sshd)
user1     63919 0.0 0.1 7796 784 ?? Ss  Sun08PM 0:34.21 sshd:
user1@notty (sshd)
user1     84233 0.0 0.1 7784 776 ?? Ss  Mon10AM 0:20.37 sshd:
user1@notty (sshd)

```

List of open SSH connections to 10.206.41.57 from the device : (Command Executed - netstat -tln | egrep "Pro|.7804"; netstat -tln | grep "\.22"). Please note that of the listed connections, one is opened by this debug script to collect the debug information from the device

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	(state)
tcp4	0	0	10.206.32.107.22		ESTABLISHED
tcp4	0	0	10.206.32.107.22		ESTABLISHED

List of open SSH connections on the device : (Command Executed - netstat -tln | egrep "Pro|.7804"; netstat -tln grep "\.22")

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	(state)
tcp4	0	0	10.206.32.107.58052		SYN_SENT

```

tcp4      0      0 10.206.32.107.53398
10.206.41.192.7804      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.57.43098      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.62.60026      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.155.85.62406      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.143.39926      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.207.70.104.36730      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.171.52993      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.33.45765      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.211.50000      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.57.33080      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.156.49032      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.40.4.38068      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.240.61583      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.240.61569      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.149.60804      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.235.59358      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.231.34530      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.221.48186      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.205.56.82.41163      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.161.11.161.42174      ESTABLISHED
tcp4      0      0 10.206.32.107.22
10.206.41.71.47831      ESTABLISHED

```

9. (Optional) To save device debug connection information at a custom output location, type `./DeviceDebugInfoCollector.sh<device-IPaddress> <device-username> <node-VIP address> <output-file-path>` and press Enter..

You can use the information from the `.txt` file to debug issues related to the connections and processes on the device.

## Executing the Script to Unlock the Device Configuration

You execute the `cleanupEditChannel.sh` script to unlock the device configuration.

To execute the script to unlock the device configuration:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.

3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.

4. Type the administrator password and press Enter.

The shell prompt appears.

5. Type `cd /var/log/space-debug/debug-utilities/deviceConnection` at the shell prompt and press Enter.

6. (Optional) To view the list of debug scripts, type `ls` and press Enter.

The list of device-connection debug scripts is displayed.

7. Type `./cleanupEditChannel.sh <device-IP address>false` and press Enter—for example, `./cleanupEditChannel.sh 10.206.33.17 false`.

You can modify the configuration on the device from the Junos Space user interface.

## Executing the Script to Collect Node-Connection Information

You execute the `getAllDeviceInfo.sh` script to collect information about devices connected to a Junos Space node. You can also execute the script to collect information about devices connected to all the nodes in your Junos Space setup.

To execute the script to collect node-connection information:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.

3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.

4. Type the administrator password and press Enter.

The shell prompt appears.

5. Type `cd /var/log/space-debug/debug-utilities/deviceConnection` at the shell prompt and press Enter.

6. (Optional) To view the list of debug scripts, type `ls` and press Enter.

7. Type `./getAllDeviceInfo.sh <node-VIP address>` and press Enter—for example, `./getAllDeviceInfo.sh 10.206.41.57`.

The output from this command is saved to the `DeviceInfoOutput.txt` file in the same directory.

The following is a sample output:

```
-----  
Time of execution: Wed Jul 15 05:35:21 UTC 2015  
-----
```

```
Device Id: 131129 Device Ip: 10.206.32.107  
Node id: 10.206.41.57  
Connection state: Connected  
Connection changed at: 07/14/2015 17:35:04  
EditFlag : false  
EditChannel num:0  
SSH ctrl channel num: 6  
Max channels allowed: 32  
Number of channels opened: 6  
-----
```

```
Channel details:  
Channel Id: 1  
Seq num: 10  
Channel state: CHANNEL_STATE_UNUSE  
Channel type: Netconf  
-----
```

```
Channel Id: 2  
Seq num: 16  
Channel state: CHANNEL_STATE_UNUSE  
Channel type: Netconf  
-----
```

```
Channel Id: 3  
Seq num: 21  
Channel state: CHANNEL_STATE_OPEN  
Channel type: Syslog  
-----
```

```
Channel Id: 4  
Seq num: 23  
-----
```

```
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 5
Seq num: 110
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 6
Seq num: 112
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
=====
Device Id: 131153 Device Ip: 10.206.33.17
Node id: 10.206.41.57
Connection state: Connected
Connection changed at: 07/14/2015 17:35:04
EditFlag : false
EditChannel num:0
SSH ctrl channel num: 4
Max channels allowed: 32
Number of channels opened: 4
-----
Channel details:
Channel Id: 1
Seq num: 11
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 2
Seq num: 14
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 3
Seq num: 22
Channel state: CHANNEL_STATE_OPEN
Channel type: Syslog
-----
Channel Id: 4
Seq num: 24
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
=====
Device Id: 131233 Device Ip: 127.0.0.1
Node id: 10.206.41.57
Connection state: Connected
Connection changed at: 07/14/2015 17:35:17
EditFlag : false
EditChannel num:0
SSH ctrl channel num: 13
Max channels allowed: 32
Number of channels opened: 7
-----
Channel details:
Channel Id: 1
Seq num: 26
Channel state: CHANNEL_STATE_UNUSE
```

```
Channel type: Netconf
-----
Channel Id: 2
Seq num: 27
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 3
Seq num: 28
Channel state: CHANNEL_STATE_OPEN
Channel type: Syslog
-----
Channel Id: 4
Seq num: 102
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 5
Seq num: 103
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 6
Seq num: 113
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 7
Seq num: 114
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
=====
Device Id: 131149 Device Ip: 10.206.40.1
Node id: 10.206.41.57
Connection state: Connected
Connection changed at: 07/14/2015 17:35:03
EditFlag : false
EditChannel num:0
SSH ctrl channel num: 5
Max channels allowed: 32
Number of channels opened: 5
-----
Channel details:
Channel Id: 1
Seq num: 9
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 2
Seq num: 15
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 3
Seq num: 20
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 4
```



```

Seq num: 25
Channel state: CHANNEL_STATE_OPEN
Channel type: Syslog
-----
Channel Id: 5
Seq num: 29
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
=====
Device Id: 131121 Device Ip: 10.206.32.186
Node id: 10.206.41.57
Connection state: Connected
Connection changed at: 07/14/2015 17:35:03
EditFlag : false
EditChannel num:0
SSH ctrl channel num: 3
Max channels allowed: 32
Number of channels opened: 6
-----
Channel details:
Channel Id: 1
Seq num: 8
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 2
Seq num: 17
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 3
Seq num: 18
Channel state: CHANNEL_STATE_OPEN
Channel type: Syslog
-----
Channel Id: 4
Seq num: 19
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 5
Seq num: 109
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
Channel Id: 6
Seq num: 111
Channel state: CHANNEL_STATE_UNUSE
Channel type: Netconf
-----
=====

```

8. (Optional) To save node connection information at a custom output location, type `./getAllDeviceInfo.sh <node-VIP address> <output-file-path>` and press Enter.
9. (Optional) To view connection information across all nodes, type `./getAllDeviceInfo.sh ALL-NODES` and press Enter.

You can use the information from the `.txt` file to debug issues related to devices connected to a single or multiple Junos Space nodes.

**Related  
Documentation**

- [Junos Space Debug Utilities Overview on page 35](#)
- [Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform on page 3](#)

## Executing Device Import Detail Script and Java Application

You execute the device import script to delete data from device import tables. You execute the `DB-blob-reader.jar` Java application to view device information in XML format. Device import script and Java application are stored at the following location: `/var/log/space-debug/debug-utilities/deviceImport`. When you execute the Java application, the output is stored as a `.txt` file at the same location. The following sections list the steps to execute the script to delete device import details and Java application to view device information.

- [Executing the Script to Delete Data from Device Import Tables on page 50](#)
- [Executing the Java Application to View Device XML on page 51](#)

### Executing the Script to Delete Data from Device Import Tables

You execute the `cleanupDeviceImportTables.sh` script to delete data from device import tables.

To execute the script to delete data from device import tables:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.

3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.

The following is a sample output from a virtual appliance:

```
admin@10.206.41.183's password:
Last login: Mon Aug 17 06:17:58 2015 from 10.206.41.42

Welcome to the Junos Space network settings utility.

Initializing, please wait
```

```

Junos Space Settings Menu

1> Change Password
2> Change Network Settings
3> Change Time Options
4> Retrieve Logs
5> Security
6> Expand VM Drive Size
7> (Debug) run shell

A> Apply changes
Q> Quit
R> Redraw Menu

Choice [1-7,AQR]: 7

```

4. Type the administrator password and press Enter.

The shell prompt appears.

5. Type `cd /var/log/space-debug/debug-utilities/deviceImport` at the shell prompt and press Enter.
6. (Optional) To view the list of device import scripts and Java applications, type `ls` and press Enter.
7. Type `./cleanupDeviceImportTables.sh <database-username> <database-password> <database-name> <device-name>` and press Enter—for example, `./getAllDeviceInfo.sh 10.206.41.57`.

## Executing the Java Application to View Device XML

You execute the **DB-blob-reader.jar** application to view the device XML information.

Ensure that you have updated the MySQL query in the **DB-blob-reader.properties** file before executing the Java application. The file also contains an example configuration.

To execute the Java application and view a device XML:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.
 

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.
3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.
 

You are prompted to enter your password.

4. Type the administrator password and press Enter.  
The shell prompt appears.
5. Type `cd /var/log/space-debug/debug-utilities/deviceImport` at the shell prompt and press Enter.
6. (Optional) To view the list of device import scripts and Java applications, type `ls` and press Enter.
7. Type `/usr/bin/java -jar DB-blob-reader.jar` and press Enter.
8. Enter the database username.
9. Enter the database password.  
The output from this command is saved to the **DB-blob-reader-result.txt** file in the same directory.

You can view the output of the query you entered in the **DB-blob-reader.properties** file.

#### Related Documentation

- [Junos Space Debug Utilities Overview on page 35](#)
- [Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform on page 3](#)

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## Executing Job Management Scripts and Java Applications

You execute job management scripts and Java applications to view information about jobs triggered from Junos Space nodes. The JobInfoCollector.jar Java application and the job management scripts are stored at the following location: `/var/log/space-debug/debug-utilities/jobManagement`. When you execute the JobInfoCollector.jar Java application and job management scripts, the output is stored as `.txt` files at the same location. You can also specify a custom path to store the output. The following sections list the steps to execute the scripts to collect information about jobs.

- [Executing the Java Application to Collect Job Information on page 52](#)
- [Executing the Script to View the Stack Trace of a Job on page 56](#)
- [Executing the Script to View Job Information on Nodes on page 57](#)

### Executing the Java Application to Collect Job Information

You execute the JobInfoCollector.jar application to collect job information. Ensure that you have updated the MySQL query in the **JobInfoCollector.properties** file before executing the Java application. The file also contains an example configuration.

To execute the Java application to collect job information:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.

3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.

The following is a sample output from a virtual appliance:

```
admin@10.206.41.183's password:
Last login: Mon Aug 17 06:17:58 2015 from 10.206.41.42

Welcome to the Junos Space network settings utility.

Initializing, please wait

Junos Space Settings Menu

1> Change Password
2> Change Network Settings
3> Change Time Options
4> Retrieve Logs
5> Security
6> Expand VM Drive Size
7> (Debug) run shell

A> Apply changes
Q> Quit
R> Redraw Menu

Choice [1-7,AQR]: 7
```

4. Type the administrator password and press Enter.
 

The shell prompt appears.
5. Type `cd /var/log/space-debug/debug-utilities/jobManagement` at the shell prompt and press Enter.
6. (Optional) To view the list of job management scripts and Java applications, enter `ls` and press Enter.
7. Type `/usr/bin/java -jar JobInfoCollector.jar` and press Enter.

The following options will be displayed:

Please select an option from below:

1. Display job parent-children hierarchy
2. Filter from job data
3. Display jobs not yet picked up by Job Dispatcher

8. Type **1**, **2**, or **3** to select an option.
9. Enter the database username.

10. Enter the database password.

11. The inputs displayed depend on the option you selected.

If you selected option 1, you need to enter the parent job ID.

- Enter a job ID.

The output from this command is saved to the `JobHierarchy-<job-ID>.txt` file in the same directory. The following is a sample output if you selected 1:

```
====Job details for 491529 =====
NODE: 10.206.41.57
STARTTIMESTAMP: 17 Jul 2015 17:51:00 GMT
JOBSTATE: Done
JOBSTATUS: Success
ENDTIMESTAMP: 17 Jul 2015 17:52:15 GMT
CHILDCOUNT: 2

Child job details:
ID || NODE || STARTTIMESTAMP || JOBSTATE || JOBSTATUS || ENDTIMESTAMP ||
CHILDCOUNT ||
491530 | 10.206.41.57 | 17 Jul 2015 17:51:01 GMT | Done | Success | 17 Jul
2015 17:51:13 GMT | 0 |
491531 | 10.206.41.57 | 17 Jul 2015 17:51:01 GMT | Done | Success | 17 Jul
2015 17:51:13 GMT | 0 |
```

If you selected option 2, you need to enter a MySQL query.

- Enter a MySQL query—for example, `mostate='Failure'`.

This query filters the jobs that failed. The following is a sample output if you selected 2:

```
ID || NAME || NODE || STARTTIMESTAMP || JOBSTATE || JOBSTATUS || ENDTIMESTAMP
||
196608 | Discover Network Elements-196608 | 10.206.41.184 | 10 Aug 2015
10:44:48 GMT | Done | Failure | 10 Aug 2015 10:48:47 GMT |
196624 | Discover Network Elements-196624 | 10.206.41.184 | 10 Aug 2015
10:49:52 GMT | Done | Failure | 10 Aug 2015 10:49:58 GMT |
196643 | Mail User Password-196643 | 10.206.41.184 | 10 Aug 2015 14:11:21
GMT | Done | Failure | 10 Aug 2015 14:11:21 GMT |
196649 | Mail User Password-196649 | 10.206.41.184 | 11 Aug 2015 02:39:18
GMT | Done | Failure | 11 Aug 2015 02:39:18 GMT |
196650 | Mail User Password-196650 | 10.206.41.184 | 11 Aug 2015 02:39:18
GMT | Done | Failure | 11 Aug 2015 02:39:18 GMT |
196660 | Sync Files-196660 | 10.206.41.187 | 11 Aug 2015 11:54:13 GMT |
Done | Failure | 11 Aug 2015 11:54:46 GMT |
360448 | Resync Network Elements-360448 | 10.206.41.184 | 11 Aug 2015
18:06:07 GMT | Done | Failure | 11 Aug 2015 18:06:08 GMT |
360449 | Discover Network Elements-360449 | 10.206.41.187 | 11 Aug 2015
18:12:43 GMT | Done | Failure | 11 Aug 2015 18:13:16 GMT |
```

If you selected option 3, the list of unscheduled jobs is saved to the **UnscheduledJobs.txt** file in the same directory.

- The following is a sample output if you selected 3:

```
ID || NAME || JOBSTATE || PARENTJOBID ||
393501 | ND Discovery-393501 | Done | 0 |
393858 | Backup Configuration Files-393858 | Done | 0 |
720906 | ND Discovery-720906 | Done | 0 |
721067 | Backup Configuration Files-721067 | Done | 0 |
721884 | Backup Configuration Files-721884 | Done | 0 |
1048659 | Backup Configuration Files-1048659 | Done | 0 |
1182260 | Enable Script-1182260 | InProgress | 0 |
1182413 | Execute Script-1182413 | InProgress | 0 |
1183914 | Backup Configuration Files-1183914 | Done | 0 |
1184310 | Delete Device-1184310 | Done | 0 |
1189992 | Stage Script-1189992 | InProgress | 0 |
1190105 | Update Network Element-1190105 | InProgress | 0 |
1442231 | Backup Configuration Files-1442231 | Done | 0 |
1442232 | -1442232 | InProgress | 1184310 |
1442233 | -1442233 | InProgress | 1184310 |
1442234 | -1442234 | InProgress | 1184310 |
1442235 | -1442235 | InProgress | 1184310 |
1442236 | -1442236 | InProgress | 1184310 |
1442237 | -1442237 | InProgress | 1184310 |
1442238 | -1442238 | InProgress | 1184310 |
1442239 | -1442239 | InProgress | 1184310 |
1442240 | -1442240 | InProgress | 1184310 |
1445400 | Generate SD LR Report-1445400 | Scheduled | 0 |
1445528 | Cloud Infrastructure Event Purge-1445528 | Scheduled | 0 |
1445602 | Policy Hits Collection-1445602 | Scheduled | 0 |
1903749 | useraccounts-1903749 | Done | 0 |
```

You can view the hierarchy of a subjob (input as the parent job ID), list of jobs that are currently unscheduled, or the output based on the query you entered in the **JobInfoCollector.properties** file.

## Executing the Script to View the Stack Trace of a Job

You execute the **getJobThreadDump.sh** script to view the stack trace of a job.

To execute the script to view the stack trace of a job:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.

3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.



4. Type the administrator password and press Enter.  
The shell prompt appears.
5. Type `cd /var/log/space-debug/debug-utilities/jobManagement` at the shell prompt and press Enter.
6. (Optional) To view the list of job management scripts and Java applications, type `ls` and press Enter.
7. Type `./getJobThreadDump.sh <job-ID>` and press Enter.  
The output from this command is saved to the `JobThreadDump-<job-ID>.txt` file in the same directory.
8. (Optional) To save the stack trace of the job at a custom output location, type `./getJobThreadDump.sh <job-ID> <output-file-path>` and press Enter.

## Executing the Script to View Job Information on Nodes

You execute the `SystemLoadViewer.sh` script to view job information on a node.

To execute the script to view job information on a node:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.  
The default username is `admin` and the default password is `abc123`.  
The Junos Space Settings Menu is displayed.
3. Enter `6` (if you are using a hardware appliance) or `7` (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.  
You are prompted to enter your password.
4. Type the administrator password and press Enter.  
The shell prompt appears.
5. Type `cd /var/log/space-debug/debug-utilities/jobManagement` at the shell prompt and press Enter.
6. (Optional) To view the list of job management scripts and Java applications, type `ls` and press Enter.
7. Type `./SystemLoadViewer.sh` and press Enter.

The output from this command is saved to the `./SystemLoadInfo.txt` file in the same directory. The following is a sample output from the command:

```
-----
Time of execution: Mon Jul 20 06:54:14 UTC 2015
-----

=====NODE SUMMARY=====
Node IP: 10.206.41.35
Maximum JVM memory: 2040528896
Estimated memory usage per node: 40465
Reserved memory size: 20000000
(Available Memory = Maximum JVM memor - Estimated memory usage per node -
Reserved memory)
Available Memory:2020488431
Number of first root jobs on this node:1
Number of next root jobs on this node:0
Number of sub jobs on this node:0
-----

Node load statistics:
=====
Resource Id:autoresync-group:132832:user1@host:0360471000000000008G
Type:autoresync-group
SubType:132832
Context type:FIRST_ROOT_JOB
State:RUNNING
Queue:
Node IP:10.206.41.35
Creation Time:2015-07-20 06:54:13.166
Last modification time:2015-07-20 06:54:13.166
Estimated Memory:40465
=====

=====SYSTEM LOAD SUMMARY FOR LOCAL
NODE=====
Filesystem          1K-blocks      Used Available Use% Mounted on
/dev/mapper/jmpvgnocf-lvvar
                    52772604    2584204  47373632    6% /var
=====Command executed: LINES=20 COLUMNS=120 top -n 2 -b -c | tail -n
+22=====
top - 06:54:18 up 3 days, 19:01,  2 users,  load average: 1.24, 0.88, 0.82
Tasks: 271 total,  2 running, 268 sleeping,   0 stopped,  1 zombie
Cpu(s): 42.2%us, 23.5%sy, 0.5%ni, 32.7%id, 0.3%wa, 0.1%hi, 0.7%si, 0.0%st
Mem:  7937672k total, 7827836k used, 109836k free, 539116k buffers
Swap: 8193140k total, 132684k used, 8060456k free, 1246572k cached

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
30383 user1      20   0 83616  24m 2508 S 36.8  0.3   0:02.16 /usr/bin/perl
/var/www/cgi-bin/secure/resourceMonitoring
  4204 jboss      20   0 4081m  2.7g 14m S 27.6 36.0 395:59.73
/usr/lib/jvm/java-1.7.0-openjdk-1.7.0.79.x86_64/jre/bin/jav
31240 user1      20   0 124m  15m 2448 S  7.6  0.2   0:00.23 perl -e use
lib("/usr/nma/lib"); use NmaUtil; print NmaUtil
31251 user1      20   0 72016  14m 2384 R  6.9  0.2   0:00.21 perl -e use
lib("/usr/nma/lib"); use NmaDb; print NmaDb::ge
30719 mysql     16  -4 2936m 744m 6628 S  3.6  9.6 62:17.79 /usr/sbin/mysqld
--basedir=/usr --datadir=/var/lib/mysql --
32329 opennms   25   5 3446m 877m  21m S  3.0 11.3 164:35.59
/usr/lib/jvm/jre-1.7.0-openjdk.x86_64/bin/java -Djava.endor
3120 user1      20   0 84612  21m 2460 S  1.0  0.3 13:51.23 /usr/bin/perl
```

```

/usr/bin/jmp-sync
30651 user1      20   0 12896 1436  952 R  1.0  0.0   0:00.07 top -n 2 -b -c
13332 user1      20   0 154m 9824 4480 S  0.7  0.1  26:56.92 /usr/sbin/snmpd
-Lsd -Lf /dev/null -p /var/run/snmpd.pid -a
18186 postgres  20   0 268m 12m 9252 S  0.7  0.2   0:00.38 postgres: opennms
opennms 127.0.0.1(55330) idle
2589 jboss       20   0 924m 197m 10m S  0.3  2.5   6:11.24 java -D[Host
Controller] -Dorg.jboss.boot.log.file=/var/log
15335 apache     23   3 141m 4936 3012 S  0.3  0.1   0:00.62 /usr/sbin/httpd
=====Command executed: COLUMNS=120 top -n 1 -b -c | egrep
'(mysqld|java|postgres)'=====
4204 jboss       20   0 4081m 2.7g 14m S  1.9 36.0 395:59.74
/usr/lib/jvm/java-1.7.0-openjdk-1.7.0.79.x86_64/jre/bin/jav
32329 opennms    25   5 3446m 877m 21m S  1.9 11.3 164:35.60
/usr/lib/jvm/jre-1.7.0-openjdk.x86_64/bin/java -Djava.endor
2556 jboss       20   0 527m 47m 9800 S  0.0  0.6   4:44.43 java -D[Process
Controller] -server -Xms32m -Xmx128m -XX:Ma
2589 jboss       20   0 924m 197m 10m S  0.0  2.5   6:11.24 java -D[Host
Controller] -Dorg.jboss.boot.log.file=/var/log
2886 postgres  20   0 268m 10m 7524 S  0.0  0.1   0:00.10 postgres: opennms
opennms 127.0.0.1(55289) idle
2888 postgres  20   0 268m 10m 7580 S  0.0  0.1   0:00.08 postgres: opennms
opennms 127.0.0.1(55290) idle
2889 postgres  20   0 268m 10m 8040 S  0.0  0.1   0:00.15 postgres: opennms
opennms 127.0.0.1(55291) idle
2891 postgres  20   0 268m 12m 9352 S  0.0  0.2   0:00.31 postgres: opennms
opennms 127.0.0.1(55292) idle
2893 postgres  20   0 267m 10m 7612 S  0.0  0.1   0:00.09 postgres: opennms
opennms 127.0.0.1(55293) idle
2895 postgres  20   0 267m 8968 6548 S  0.0  0.1   0:00.03 postgres: opennms
opennms 127.0.0.1(55294) idle
3507 jboss       20   0 528m 47m 9856 S  0.0  0.6   4:51.80 java -D[Process
Controller] -server -Xms32m -Xmx128m -XX:Ma
3561 jboss       20   0 566m 143m 10m S  0.0  1.8   5:43.77 java -D[Host
Controller] -Dorg.jboss.boot.log.file=/var/log
5570 postgres  20   0 266m 4680 2784 S  0.0  0.1   0:00.01 postgres: opennms
opennms 127.0.0.1(36280) idle
5572 postgres  20   0 266m 4688 2792 S  0.0  0.1   0:00.01 postgres: opennms
opennms 127.0.0.1(36281) idle
5573 postgres  20   0 266m 4676 2780 S  0.0  0.1   0:00.01 postgres: opennms
opennms 127.0.0.1(36282) idle
5575 postgres  20   0 266m 4684 2788 S  0.0  0.1   0:00.01 postgres: opennms
opennms 127.0.0.1(36283) idle
5578 postgres  20   0 266m 4696 2800 S  0.0  0.1   0:00.00 postgres: opennms
opennms 127.0.0.1(36284) idle
5579 postgres  20   0 266m 4688 2792 S  0.0  0.1   0:00.01 postgres: opennms
opennms 127.0.0.1(36285) idle
5581 postgres  20   0 266m 4680 2784 S  0.0  0.1   0:00.00 postgres: opennms
opennms 127.0.0.1(36286) idle
5583 postgres  20   0 266m 4676 2780 S  0.0  0.1   0:00.01 postgres: opennms
opennms 127.0.0.1(36287) idle
5586 postgres  20   0 266m 4680 2784 S  0.0  0.1   0:00.00 postgres: opennms
opennms 127.0.0.1(36288) idle
5587 postgres  20   0 266m 4676 2780 S  0.0  0.1   0:00.01 postgres: opennms
opennms 127.0.0.1(36289) idle
5590 postgres  20   0 266m 4692 2796 S  0.0  0.1   0:00.00 postgres: opennms
opennms 127.0.0.1(36290) idle
5591 postgres  20   0 266m 4692 2796 S  0.0  0.1   0:00.00 postgres: opennms
opennms 127.0.0.1(36291) idle
5593 postgres  20   0 266m 4696 2800 S  0.0  0.1   0:00.00 postgres: opennms

```

```
opennms 127.0.0.1(36292) idle
5595 postgres 20 0 266m 4680 2784 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(36293) idle
5597 postgres 20 0 266m 4676 2780 S 0.0 0.1 0:00.01 postgres: opennms
opennms 127.0.0.1(36294) idle
5599 postgres 20 0 266m 4684 2788 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(36295) idle
5601 postgres 20 0 268m 10m 8172 S 0.0 0.1 0:00.14 postgres: opennms
opennms 127.0.0.1(36296) idle
5603 postgres 20 0 268m 10m 7376 S 0.0 0.1 0:00.07 postgres: opennms
opennms 127.0.0.1(36297) idle
5605 postgres 20 0 267m 9.8m 7228 S 0.0 0.1 0:00.05 postgres: opennms
opennms 127.0.0.1(36298) idle
5607 postgres 20 0 267m 9972 7132 S 0.0 0.1 0:00.06 postgres: opennms
opennms 127.0.0.1(36299) idle
5609 postgres 20 0 268m 10m 8252 S 0.0 0.1 0:00.20 postgres: opennms
opennms 127.0.0.1(36300) idle
5611 postgres 20 0 268m 11m 8848 S 0.0 0.2 0:00.21 postgres: opennms
opennms 127.0.0.1(36301) idle
8123 postgres 20 0 268m 10m 8160 S 0.0 0.1 0:00.14 postgres: opennms
opennms 127.0.0.1(56849) idle
17000 user1 20 0 2299m 68m 8072 S 0.0 0.9 6:32.60 ./jre/bin/java
-Djava.compiler=NONE -cp /usr/StorMan/RaidMa
18186 postgres 20 0 268m 12m 9256 S 0.0 0.2 0:00.38 postgres: opennms
opennms 127.0.0.1(55330) idle
18187 postgres 20 0 268m 11m 8800 S 0.0 0.2 0:00.18 postgres: opennms
opennms 127.0.0.1(55331) idle
18188 postgres 20 0 268m 10m 7484 S 0.0 0.1 0:00.09 postgres: opennms
opennms 127.0.0.1(55332) idle
18190 postgres 20 0 268m 10m 7800 S 0.0 0.1 0:00.10 postgres: opennms
opennms 127.0.0.1(55333) idle
20287 postgres 20 0 266m 4680 2784 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(36339) idle
20289 postgres 20 0 266m 4676 2780 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(36340) idle
20291 postgres 20 0 266m 4684 2788 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(36341) idle
20297 postgres 20 0 266m 4680 2784 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(36342) idle
20298 postgres 20 0 266m 4676 2780 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(36343) idle
20301 postgres 20 0 267m 7448 5228 S 0.0 0.1 0:00.01 postgres: opennms
opennms 127.0.0.1(36344) idle
20306 postgres 20 0 267m 7804 5548 S 0.0 0.1 0:00.01 postgres: opennms
opennms 127.0.0.1(36345) idle
20308 postgres 20 0 267m 9660 6872 S 0.0 0.1 0:00.06 postgres: opennms
opennms 127.0.0.1(36346) idle
20311 postgres 20 0 268m 10m 7692 S 0.0 0.1 0:00.14 postgres: opennms
opennms 127.0.0.1(36347) idle
22848 postgres 20 0 266m 4684 2788 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(56892) idle
22850 postgres 20 0 266m 4680 2784 S 0.0 0.1 0:00.01 postgres: opennms
opennms 127.0.0.1(56893) idle
22852 postgres 20 0 266m 4676 2780 S 0.0 0.1 0:00.00 postgres: opennms
opennms 127.0.0.1(56894) idle
22858 postgres 20 0 266m 6388 4312 S 0.0 0.1 0:00.01 postgres: opennms
opennms 127.0.0.1(56895) idle
22860 postgres 20 0 268m 10m 7452 S 0.0 0.1 0:00.11 postgres: opennms
opennms 127.0.0.1(56896) idle
22863 postgres 20 0 268m 10m 7968 S 0.0 0.1 0:00.22 postgres: opennms
```

```

opennms 127.0.0.1(56897) idle
22864 postgres 20 0 267m 7608 5368 S 0.0 0.1 0:00.02 postgres: opennms
opennms 127.0.0.1(56898) idle
22866 postgres 20 0 268m 10m 7528 S 0.0 0.1 0:00.13 postgres: opennms
opennms 127.0.0.1(56899) idle
29715 user1 16 -4 13052 1068 1064 S 0.0 0.0 0:00.11 /bin/sh
/usr/bin/mysqld_safe --datadir=/var/lib/mysql --pid
30719 mysql 16 -4 2936m 744m 6628 S 0.0 9.6 62:17.79 /usr/sbin/mysqld
--basedir=/usr --datadir=/var/lib/mysql --
31064 postgres 20 0 265m 17m 16m S 0.0 0.2 0:32.35
/usr/pgsql-9.4/bin/postmaster -p 5432 -D /var/lib/pgsql/9.4
31072 postgres 20 0 119m 1728 868 S 0.0 0.0 0:03.28 postgres: logger
process
31074 postgres 20 0 265m 42m 41m S 0.0 0.5 0:39.87 postgres:
checkpointer process
31075 postgres 20 0 265m 7304 6368 S 0.0 0.1 0:05.45 postgres: writer
process
31076 postgres 20 0 265m 6076 5156 S 0.0 0.1 0:53.84 postgres: wal
writer process
31077 postgres 20 0 265m 2688 1496 S 0.0 0.0 0:12.46 postgres:
autovacuum launcher process
31078 postgres 20 0 119m 2056 924 S 0.0 0.0 0:58.40 postgres: stats
collector process
31304 user1 20 0 61220 768 664 S 0.0 0.0 0:00.00 egrep
(mysql|java|postgres)

```

8. (Optional) To save job information about a node at a custom output location, enter `./SystemLoadViewer.sh <output-file-path>`.

You can view information such as the memory on the nodes, number of root jobs and subjobs on each of the nodes, and so on.

#### Related Documentation

- [Junos Space Debug Utilities Overview on page 35](#)
- [Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform on page 3](#)

## Executing HornetQ Scripts

You execute HornetQ scripts to fetch details about all queues from the JBoss CLI or view the list of messages on a specific queue. HornetQ scripts are stored at the following location: `/var/log/space-debug/debug-utilities/HornetQ`. When you execute these scripts, the output is stored as `.txt` files at the same location. You can also specify a custom path to store the output. The following sections list the steps to execute the scripts to fetch details about queues from the JBoss CLI.

- [Executing the HornetQ Script to View all JBoss Queues on page 62](#)
- [Executing the HornetQ Script to List of Messages in a JBoss Queue on page 63](#)

## Executing the HornetQ Script to View all JBoss Queues

You execute the `HornetQInfoProvider.sh` script to view all the JBoss queues.

To execute the script to view all JBoss queues:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.

3. Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.

The following is a sample output from a virtual appliance:

```
admin@10.206.41.183's password:
Last login: Mon Aug 17 06:17:58 2015 from 10.206.41.42

Welcome to the Junos Space network settings utility.

Initializing, please wait

Junos Space Settings Menu

1> Change Password
2> Change Network Settings
3> Change Time Options
4> Retrieve Logs
5> Security
6> Expand VM Drive Size
7> (Debug) run shell

A> Apply changes
Q> Quit
R> Redraw Menu

Choice [1-7,AQR]: 7
```

4. Type the administrator password and press Enter.  
The shell prompt appears.
5. Type `cd /var/log/space-debug/debug-utilities/hornetQ` at the shell prompt and press Enter.
6. (Optional) To view the list of HornetQ scripts, type `ls` and press Enter.

7. Type `./HornetQInfoProvider.sh` and press Enter.

The output from this command is saved to the `HornetQInfo.txt` file in the same directory. The following sample output displays one of the JBoss queues:

```
-----
Time of execution: Tue Jul 21 05:58:23 UTC 2015
-----
=====10.206.41.57=====
{
  "outcome" => "success",
  "result" => [
{
  "address" => [
    ("subsystem" => "messaging"),
    ("hornetq-server" => "default"),
    ("jms-queue" => "timeOutQueue")
  ],
  "outcome" => "success",
  "result" => {
    "consumer-count" => 15,
    "dead-letter-address" => "jms.queue.DLQ",
    "delivering-count" => 0,
    "durable" => true,
    "entries" => ["queue/timeOutQueue"],
    "expiry-address" => undefined,
    "message-count" => 0L,
    "messages-added" => 0L,
    "paused" => false,
    "queue-address" => "jms.queue.timeOutQueue",
    "scheduled-count" => 0L,
    "selector" => undefined,
    "temporary" => false
  }
},
},
```

8. (Optional) To save the list of all JBoss queues at a custom output location, type `./getDeviceInfo.sh<output-file-path>` and press Enter.

You can view all the JBoss queues.

## Executing the HornetQ Script to List of Messages in a JBoss Queue

You execute the `HornetQInfoProvider.sh` script to view the list of messages in a JBoss queue.

To execute the script to view the list of messages in a JBoss queue:

1. Log in to the CLI of the Junos Space node.
2. Enter the administrator username and password at the Junos Space login prompt and press Enter.

The default username is **admin** and the default password is **abc123**.

The Junos Space Settings Menu is displayed.

- Enter **6** (if you are using a hardware appliance) or **7** (if you are using a virtual appliance) at the Junos Space Settings Menu prompt to run shell commands.

You are prompted to enter your password.

The following is a sample output from a virtual appliance:

```
admin@10.206.41.183's password:
Last login: Mon Aug 17 06:17:58 2015 from 10.206.41.42

Welcome to the Junos Space network settings utility.

Initializing, please wait

Junos Space Settings Menu

1> Change Password
2> Change Network Settings
3> Change Time Options
4> Retrieve Logs
5> Security
6> Expand VM Drive Size
7> (Debug) run shell

A> Apply changes
Q> Quit
R> Redraw Menu

Choice [1-7,AQR]: 7
```

- Type the administrator password and press Enter.

The shell prompt appears.

- Type `cd /var/log/space-debug/debug-utilities/hornetQ` at the shell prompt and press Enter.

- (Optional) To view the list of HornetQ scripts, type `ls` and press Enter.

- Type `./HornetQMessageViewer.sh<queue-name>`—for example, `./HornetQMessageViewer.shResyncJobDispatcherQueue`.

The output from this command is saved to the `<queue-name>-messages.txt` file in the same directory. The following sample output displays the list of messages in a JBoss queue named `ResyncJobDispatcherQueue`.

```
-----
Time of execution: Tue Jun  2 16:13:51 PDT 2015
-----
[{"consumerName":"ServerConsumer [id=0, filter=null, binding=LocalQueueBinding
 [address=jms.queue.ResyncJobDispatcherQueue,
queue=QueueImpl [name=jms.queue.ResyncJobDispatcherQueue,
postOffice=PostOfficeImpl
 [server=HornetQServerImpl::serverUUID=d2f96781-0972-11e5-9e84-69e3a4c4a918]]@3ead3529]]",
```



```
"elements": [{"timestamp":1433286830611,
"userID":"ID:0780c666-097d-11e5-9e84-69e3a4c4a918",
"messageID":37172,
"JobOperationName":"executeResyncDevices",
"expiration":0,
"address":"jms.queue.ResyncJobDispatcherQueue",
"priority":4,
"JobId":196669,
"__HQ_CID":"077f8de2-097d-11e5-9e84-69e3a4c4a918",
"durable":false,"type":2}]}
```

8. (Optional) To save the list of all messages at a custom output location, type `./HornetQMessageViewer.sh <queue-name> <output-file-path>` and press Enter.

You can view the list of messages in a specific JBoss queue.

**Related  
Documentation**

- [Junos Space Debug Utilities Overview on page 35](#)
- [Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform on page 3](#)



## PART 3

# Troubleshooting Junos Space Platform Issues

- [Troubleshooting Login–Related Issues on page 69](#)
- [Troubleshooting Device Management–Related Issues on page 71](#)
- [Troubleshooting Network Monitoring–Related Issues on page 75](#)
- [Troubleshooting DMI Schema–Related Issues on page 77](#)



# Troubleshooting Login–Related Issues

- Troubleshooting the Not Able to Log In from the Junos Space Login Page Issue on page 69

## Troubleshooting the Not Able to Log In from the Junos Space Login Page Issue

---

**Problem** **Description:** You cannot login to Junos Space Network Management Platform from the Junos Space login page. The login page displays a message stating the possible cause of the issue.

**Cause** You may not be able to log in from the Junos Space login page for one of the following reasons:

- You entered an incorrect username, password, or both.

The following message is displayed on the login page: The username or password is incorrect

- Your account is locked because you exceeded the maximum number of login attempts

The following message is displayed on the login page: The account is Locked. You can't Log in



**NOTE:** By default, your account is locked out after four unsuccessful login attempts.

---

**Solution** • If you have entered incorrect login credentials, verify and enter the correct login credentials.

- If your account is locked

1. Try logging in from another system.
2. Contact the administrator to unlock your user account.



NOTE: Your user account is automatically unlocked in 24 hours.

- Related Documentation**
- [Troubleshooting Device Discovery Failure on page 71](#)

## CHAPTER 5

# Troubleshooting Device Management–Related Issues

- [Troubleshooting Device Discovery Failure on page 71](#)
- [Troubleshooting Device Data Collection Issue on page 72](#)
- [Troubleshooting Devices Discovered Twice Using the Device Discovery Workflow on page 73](#)

## Troubleshooting Device Discovery Failure

**Problem**    **Description:** Devices are not discovered to Junos Space Network Management Platform.

**Symptoms:** The devices you tried to discover to Junos Space Network Management Platform are not listed on the Device Management page.

The device discovery job for devices discovered through a device discovery profile, listed on the Job Management page fails.

**Cause**    You cannot discover devices to Junos Space Network Management Platform for one of the following reasons:

- You provided an incorrect password to access the device through the Device Discovery Profile workflow.
- You provided an incorrect private key or passphrase during the Device Discovery Profile workflow
- The device is not reachable.
- You provided incorrect SNMP settings for the device in the Device Discovery workflow.

**Solution**

- If you entered an incorrect password, modify the device discovery profile by reentering the password and rediscover the device by using the Device Discovery Profile workflow.
- If you uploaded an incorrect private key or passphrase, modify the device discovery profile by uploading the correct private key and passphrase and rediscover the device by using the Device Discovery Profile workflow.

- If the device you are trying to discover is not reachable, add the correct route to the device. For more information about adding a route to the device, refer to the appropriate device configuration guide.
- If you entered incorrect SNMP settings for the device, you can do one of the following:
  - Modify the device discovery profile by clearing the **Use SNMP** check box on the **Network Management Platform > Devices > Device Discovery Profiles > Modify Device Discovery Profile > Specify Probes** page and rediscover the device.
  - Modify the device discovery profile by adding the correct SNMP details on the **Network Management Platform > Devices > Device Discovery Profiles > Modify Device Discovery Profile > Specify Probes** page and rediscover the device.



NOTE: Ensure that SNMP is enabled on the device. For more information about enabling SNMP on the device, refer to the appropriate device configuration guide.

**Related Documentation**

- [Troubleshooting Device Data Collection Issue on page 72](#)

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## Troubleshooting Device Data Collection Issue

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- Problem**    **Description:** The device on Junos Space Network Management Platform displays the Managed status but the device is not able to collect data.
- Cause**        A device cannot collect data even though the status of the device is Managed for one of the following reasons:
- You have not updated the SNMP settings of the device. You may have chosen to skip updating the SNMP details when you discovered the device to Junos Space Network Management Platform.
  - You have not selected the device interfaces for data collection.
- Solution**     • If you have not updated the SNMP settings of the device, update the SNMP settings on the **Network Management Platform > Network Monitoring > Admin** page.
- If you have not selected the device interfaces for data collection:
    1. Select the device on the **Network Management Platform > Network Monitoring > Admin > Configure SNMP Data Collection per Interface** page.
    2. In the Collect column, select **Collect** or **Default** from the drop-down list corresponding to the interfaces.



**Related Documentation** • [Troubleshooting Device Discovery Failure on page 71](#)

## Troubleshooting Devices Discovered Twice Using the Device Discovery Workflow

**Problem** **Description:** Using the Device Discovery Profile workflow, devices are discovered twice to Junos Space Network Management Platform.

**Cause** You are using the ping-only method to discover devices to Junos Space Network Management Platform.

**Solution** Select the SNMP check box on the **Network Management Platform > Devices > Device Discovery Profile > Create Device Discovery Profile > Specify Probes** when discovering devices using the Device Discovery Profile workflow. Enabling the SNMP option ensures that Junos Space Network Management Platform checks the serial number of the devices during the discovery process. This prevents the discovery process from adding duplicate instances of the devices to Junos Space Network Management Platform.

**Related Documentation** • [Troubleshooting Device Discovery Failure on page 71](#)



## CHAPTER 6

# Troubleshooting Network Monitoring–Related Issues

- [Troubleshooting the Network Monitoring Page Is Not Available Issue on page 75](#)

## Troubleshooting the Network Monitoring Page Is Not Available Issue

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**Problem** **Description:** You can navigate to all other workspaces but the Network Monitoring workspace is not accessible.

**Cause** The Network Monitoring service has stopped unexpectedly.

**Solution** Restart the Network Monitoring service. To restart the Network Monitoring service:

1. Navigate to the **Network Management .Platform > Administration > Applications** page.
2. Right-click **Network Management Platform** and select **Manage Services** from the Actions menu.
3. Select **Network Monitoring**, then select the Restart Service icon.

**Related Documentation** • [Troubleshooting Device Discovery Failure on page 71](#)



# Troubleshooting DMI Schema–Related Issues

- [Troubleshooting the Nondisplay of the DMI Schema Tree Issue on page 77](#)

## Troubleshooting the Nondisplay of the DMI Schema Tree Issue

---

**Problem**    **Description:** The DMI schema tree is not displayed.

**Symptoms:** On the Create Template Definition page, you cannot navigate the DMI schema tree or the hierarchy of configuration options on the left.

**Cause**    The DMI schema is defective or corrupt.

If the topmost node (Configuration) cannot be opened to reveal the hierarchy, the schema was corrupted during transition. (Use the **grep** command to search for SchemaMgr ERROR in the **server.log** file.)



**NOTE:** One defective schema does not affect other schemas, which are still available for use.

**Solution**    Use your own compressed TAR file. This does not require you to restart JBoss. Ensure that the **Enable Schema Overwrite** check box is selected when you update the schema. For instructions to add or update a DMI schema, see *Adding Missing DMI Schemas or Updating Outdated DMI Schemas by Using the Update Schema Menu* in the *Junos Space Network Management Platform Workspaces Feature Guide*.

For instructions to create your own compressed TAR file, see *Creating a Compressed TAR File for Updating DMI Schema* in the *Junos Space Network Management Platform Workspaces Feature Guide*.

**Related Documentation**    • [Monitoring Network Devices and Troubleshooting Software Issues with Junos Space Network Management Platform on page 3](#)

