

# Junosphere Release Notes

Release 2.5  
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Revision 6

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## Release Overview

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If the information in your current release notes differs from the information found in the other documentation sources, follow the *Junosphere Release Notes*.

### Before You Begin

Before you use your new software, read these release notes in their entirety, especially the section “[Known Problems and Limitations](#)” on page 9. You need the following documentation to fully understand all the features available in Release 2.5:

- These *Junosphere Release Notes*
- The *Junosphere Guide for Users* and *Junosphere Guide for Bank Administrators*, which provide detailed information about features available in Release 2.5

The entire documentation set, including the release notes, is available in PDF format on the Juniper Networks Web site on the [Junosphere Technical Documentation page](#).

## Junosphere Release Highlights

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Junosphere provides a virtual network environment in which you can configure network devices in the same manner as on a physical network.

### New Junosphere Features

This release provides intelligent algorithms to improve the reliability and performance of the system.

### Supported Browsers

Junosphere supports the same browsers as Junos Space, as listed under Supported Browsers on the Junos Space 11.4 Release Notes page on [http://www.juniper.net/techpubs/en\\_US/junos-space11.4/information-products/topic-collections/release-notes/index.html](http://www.juniper.net/techpubs/en_US/junos-space11.4/information-products/topic-collections/release-notes/index.html). Junos Space Security Design 11.4 is best viewed on Mozilla Firefox 4.0 and Internet Explorer 8.0. Later versions of Firefox are also known to work.

### Junosphere Connector Hardware Requirements

The PC requirements to support the Junosphere Connector software are:

- 2 GB RAM
- 1 GB free disk space
- Two Ethernet cards or one Ethernet card and one wireless connection
- VM Player

### Junosphere Java Requirement

Java Runtime Environment 6

## Secure Sockets Layer Requirement

SSL 7.1R1

## Junos Software Requirement

You need to have a connectivity application, such as a telnet or ssh client or a remote access client such as Virtual Network Computing (VNC).

## Images

Junosphere provides a range of virtual machine image files, depending on the services you purchased. Current virtual image files for this release are listed in [Table 1 on page 4](#). See the virtual machine image descriptions in the online help for information about using and installing the images.

**Table 1: Current Virtual Machine Images**

Disk Name	Description	Technical Support Provider
VJX1000_LATEST	Latest qualified VJX1000 image using Junos OS Release 12.1	Juniper Technical Assistance Center (JTAC)
VJX1000_10_3R2_3	Junos OS Release 10_3R2_3 for VJX1000	Not supported by JTAC
VJX1000_10_3R2_2	Junos OS Release 10_3R2_2 for VJX1000	Not supported by JTAC
VJX1000_10_3R2_1	Junos OS Release 10_3R2_1 for VJX1000	Not supported by JTAC
VJX1000_10_3R2_0	Junos OS release 10_3R2_0 for VJX 1000	Not supported by JTAC
BGP_SERVICE	Latest qualified BGP Service image. This is a special configuration of VJX that is used for BGP Service, based on the latest Junos OS release.	JTAC
SPACE_LATEST	Latest qualified Junos Space image. This currently maps to SPACE_11_4R1_5	JTAC
SPACE_12_1R1_8	Junos Space 12.1 Release 1.8	JTAC
CaridenMATE_LATEST	Latest qualified Cariden MATE image. This currently maps to Cariden MATE 4.5.1	Cariden
CENTOS_5_3	CentOS 32-bit image	NA
CENTOS64_5_4	CentOS 64-bit image	NA
MU_STUDIO_LATEST MU_TESTENGINE_LATEST	Latest qualified Mu Studio and Test Engine images. This currently maps to Mu Studio 6.1	Mu Dynamics

Table 1: Current Virtual Machine Images (*continued*)

Disk Name	Description	Technical Support Provider
REX_LATEST	Latest qualified Virtual Route Explorer image This currently maps to REX_9_4.	Packet Design
SPIRENT_LATEST	Latest qualified Virtual Spirent TestCenter image. This currently maps to SPIRENT_3_90. You must upgrade your application to Virtual Spirent TestCenter 3.90.	Spirent

Table 2: Unqualified Junos Releases

Disk Name	Description	Technical Support Provider
VPTX_EXP	Unqualified Junos OS Release 12.1 image with PTX configuration	NA
VSRX_EXP	Unqualified SRX Release 12.1 image	NA

These images have newer versions available, but are still supported by Junosphere for upgrade or legacy testing.

## VJX1000 Image

By default, the VJX image is configured with a root and non-root user account. The root username is root and the password is **Clouds**. The non-root username is **juniper** and the password is **Clouds**. Each VJX image has 2 GB of memory.

Customers running VJX1000 virtual machines based on Release 12.1 of Junos OS for J Series routers will now see new messages during boot up and during commit. The messages will be of the form:

```
/config/license/JNX_LICENSE_TMP.lic:1:(0) JNX_LICENSE_TMP: serial number too large
```

These messages are benign and can be safely ignored.

## VJX1000 Image Features

For Junos OS Release 12.1, the VJX1000 image supports the features found in the [VJX1000 Release Notes](#),

For Junos OS Release 12.1, the VJX1000 image supports the following software services:

- IPv4
- IPv6
- OSPF
- BGP
- IS-IS

- MPLS
- L3VPN
- L2VPN
- VPLS
- MPLS-TE
- RSVP
- Multicast
- L2Circuit (PWE3)
- BGP-labeled unicast
- XML
- ISISv6
- OSPFv3
- Ethernet CCC
- The Layer 2 services and CoC support is the same as for J Series routers
- Only forwarding in packet mode has been qualified

## VJX1000 Image Network Interfaces

For Junos OS Release 12.1, the VJX1000 image supports Gigabit Ethernet as a physical interface.

## VJX Image for Junos OS Release 12.1

The VJX1000\_LATEST image is based on Junos OS Release 12.1.

## Junos Space Image

This release supports the following Junos Space version:

- 12.1 R1.8

In order to use Junos Space in your network topology, refer to the online help file.

## Optimizing Performance of Junos Space Virtual Machines in Junosphere

Optimizing the performance of Junos Space Virtual Machines in Junosphere can be improved by updating Junos Space to Release 12.1 and using its updated CentOS virtual machine.

The following example is a workaround for earlier versions of Junos Space:

Set up a reverse proxy server on a generic CentOS 5.4 virtual machine that is in the same sandbox as the Junos Space server. This example assumes that the Junos Space server is at 10.233.246.1 and the CentOS server is at 10.233.248.27.

As root, perform the following on the Centos 5.4 server:

1. Enter the following at the root prompt.

```
yum install squid.x86_64
```

2. Find the **squid.conf** file. (The location of the **squid.conf** file varies depending on the version of squid installed.) Use the following command to edit the **squid.conf** file.

```
vi `find /etc -name squid.conf`
```

3. Add the following to the **squid.conf** file.

```
visible_hostname centos.juniper.net
https_port 443 defaultsite=10.233.246.1 vhost cert=/etc/CA/testcert.cert
key=/etc/CA/testkey.pem
key=/etc/CA/testkey.pem
http_port 80 defaultsite=10.233.246.1 vhost
cache_peer 10.233.246.1 parent 443 0 no-query originserver
ssl sslflags=DONT_VERIFY_PEER
name=space name=space
acl all src 0.0.0.0/0.0.0.0
cache_peer_access space allow all
http_access allow all
```

4. Create the SSL reverse server (cert testcert.cert and its key testkey.pem) by following the steps posted at the following URL:

<http://wiki.squid-cache.org/ConfigExamples/Reverse/SslWithWildcardCertificate>

5. Add the following to the /etc/hosts file on the CentOS server.

```
10.233.248.27 centos centos.juniper.net
10.233.246.1 space.juniper.net
service squid start
```

6. Junos Space users should point their browser to 10.233.248.27, the CentOS server.

## BGP Services Image

This release adds support for the following BGP Services image: BGP\_SERVICES

Please note that the IPv6 BGP feed is not supported for the current release in Junosphere.

## Cariden MATE Image

This release has support for the Cariden MATE 4.5.1 image.

## CentOS Image

This release supports two CentOS Linux versions:

- CENTOS\_5\_3 for 32 bits
- CENTOS64\_5\_4 for 64 bits

The CentOS virtual machine images contain iperf, mgen, and wireshark applications.

iperf is a network testing tool that can create TCP and UDP data streams and measure the throughput of a network that is carrying them.

mgen is open source software that provides the ability to perform IP network performance tests and measurements using TCP and UDP/IP traffic.

wireshark is an open source network protocol analyzer.

## Mu Studio and Mu Test Engine Images

This release has support for Mu Studio and Mu Test Engine from Mu Dynamics (version 6.1 for both). These tools enable you to quickly and accurately recreate thousands of different applications to determine how they impact the network infrastructure from a performance and security perspective.

## Packet Design REX Images

This release includes support for the REX\_LATEST (Version 9.4) Packet Design Route Explorer image.

## Virtual Spirent TestCenter Image

This release includes support for Virtual Spirent TestCenter 3.90. To use the Spirent 3.90 virtual machine, you will have to update your version of Spirent TestCenter. This image fixes the bug where you had to reset the Spirent virtual machine for it to become useable.

## Network Topology Release Highlights

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This section covers the network topology release highlights.

### VJX1000 Network Management

All relevant platform manageability components of Junos OS Release 12.1 for J Series routers are supported (such as CLI, SNMP, traps, and logs). The only difference compared to current physical routers is that the virtual routers have virtual interface adapters.

### VJX1000 Junos OS Documentation

For Junos OS Release 12.1, the VJX1000 image is documented in the [VJX1000 Release Notes](#).



For help on supported features on the network devices, including the CLI features, you can use the documentation for Junos OS Release 12.1 for J Series routers found on the [Junos OS for J Series, Release 12.1 Technical Documentation page](#).

## VJX1000 Interfaces

VJX1000 Junos OS Release 12.1 supports up to 64 interfaces.

## VJX1000 Hostnames and IP Addresses

While you are able to use your existing hostnames and IP addresses in the Junosphere topology models, and while Junosphere is architected based on secure VPN paradigms, we recommend for additional security that you use alternative names and addresses in your topology files.

A VNC server is enabled on both virtual servers (`vnc: management_Ethernet_address:1`).

## Topology Fileset Size Constraints

The full topology fileset must be less than 10 MB, and each individual file in the fileset can be no larger than 6 MB.

## Features Not Fully Qualified

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The Junosphere Release 2.4 documentation set describes a feature that is present but has not yet been fully qualified by Juniper Networks. This feature will be fully tested and supported in a future release:

- Packet forwarding in flow mode; this enables all the stateful security features in the release such as stateful firewall.

## Known Problems and Limitations

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This section identifies known problems and limitations in this release.

### User Interface

- Committed VJX configuration changes may take longer than expected to show up in the downloaded configuration files immediately following Save and Save As commands. Check the changes in the configuration files after the Save/Save As (you will have to download the topology to your host environment to check). If the changes are not there, wait 30 seconds and repeat (PR/731033).
- Occasionally, even though the message in the Active Topology Details tab may inform you that the topology started successfully, not all virtual machines started successfully. If you cannot Telnet to one or more virtual machines, stop and restart the topology. If the problem persists, contact Juniper Networks Technical Assistance Center (JTAC).
- If you see help from Junos Space while using Junosphere, click on the Junosphere icon and then click on the ? icon to display Junosphere help. Clicking the ? icon toggles the help between Junos Space and Junosphere.

- Junosphere is best viewed on Mozilla Firefox 4.0 and Internet Explorer 8.0. Later versions of Firefox are also known to work. Junosphere also works with Internet Explorer 9.0, but only with Compatibility View turned on. The Internet Explorer (IE) browser has some page display issues and therefore does not work as well as Firefox.
- On supported browsers, when a user goes to the Virtual Machines tab under Active Topologies, there is no process bar during the wait interval; the screen is refreshed automatically. The refresh occurs faster if the user clicks the blue refresh icon on the Active Topologies accordion tab.
- When a user tries to execute an operation in Junosphere, a message may appear that says that the connection is lost or a link is broken. The user needs to click the Refresh icon. The browser defaults to the Welcome page and the user must navigate back to the page he or she was on when the Refresh icon was clicked.

## Parsing Capabilities

- New parsing capabilities prevent user mistakes by limiting the use of free-form nomenclatures, such as custom bridge names, in a topology file. Currently, only bridge names in the range of private0 to private123 are allowed.
- Some topology files that were created before Release 2.4 will continue to work in Junosphere as long as they remain in their original libraries and the files themselves are not altered. If a file has been downloaded, modified, and then uploaded to the same library, it will not be compatible with the new parsing rules and must be updated to be uploaded.

## Junosphere Connector

- To configure 802.1q VLAN tagging pass-through when using Junosphere Connector with the VMWare ESXi server, you must set the VLAN ID of the port group of the vSwitch to 4095. This will put the port into VGT mode which allows VLAN tags to be preserved across the vSwitch.
- Junosphere Connector works on:
  - Linux:
    - CentOS release 5.5 (Final)
    - Fedora release 14 (Laughlin)
  - Windows

## Virtual Routers

- The IPv6 BGP feed is currently not supported on Junosphere (PR/691145).
- The auto-negotiation status always shows the status as Incomplete (PR/582791).
- Web browser access to virtual routers via the Juniper Web Device Manager does not work.

When using a Web browser to access virtual routers, the following problems are observed:

- The Authentication button keeps spinning with message “loading data.”

## Configuration File

- Junos OS configuration files *must* have a **.conf** extension because the VJX virtual machine saves configuration changes to the filename with a .conf extension. If you name a Junos OS configuration file R5.config, zip it up, and load it to Junosphere, Junosphere will use the configuration files as is. It preserves the file name as is with the .config extension. The virtual machines are booted with these files and the virtual machines do not care about the extension either. But after you make changes to the virtual machine and commit the changes, the virtual machine saves the changes using the same file name but with a .conf extension. As a result, when you issue Save/Save As, the operation causes Junosphere to look for files with the original **.config** extension. Since the changes were written to files with a .conf extension, the changes never make it back to Junosphere. When you download the configuration file sets, you will not see the changes.
- An interface ge-0/0/0 configuration is added to the **.vmm** topology file at the time of starting the topology. Remove the interface ge-0/0/0 configuration to avoid having duplicate IP addresses. First, commit your configuration changes. Download the zipped configuration fileset from the topology to your local PC and unzip it. Edit each **.conf** file, removing the interface ge-0/0/0 configuration. Save the **.conf** files and zip the configuration file set. The next time you upload the zipped topology fileset and start the topology, the new configuration will be implemented.
- In the **topology.vmm** file, interfaces must be sequential; i.e., em0, em1, em2, and so on. Also, words that appear in all capital letters in script examples must be entered exactly as they appear in the examples. For example, EXTERNAL instead of external.

## Secure Access

Secure Access is the technology behind the Junosphere Access Portal page. You can find information relating to it in the Secure Access Release Notes. Click the 7.1R1 version on the following page:

[http://www.juniper.net/techpubs/en\\_US/sa71/information-products/pathway-pages/sa-series/index71.html](http://www.juniper.net/techpubs/en_US/sa71/information-products/pathway-pages/sa-series/index71.html)

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## Junosphere Developer

The routing engine (RE) SDK application might not work as expected when VJX1000 reboots with an RE SDK package installed on it. The work around is to uninstall the RE SDK package and re-install after the reboot of VJX1000 completes.

## Operational Notes

- Bank administrators cannot see active users (PR/716701).
- Reservations can be cancelled up to one hour before the start time.

- Set your browser to allow pop-ups from [junosphere.net](http://junosphere.net). The Network Connect function requires them.
- Users can be deleted.
- The time zones displayed in Junosphere for reservation start time and end time are always in the time zone that the browser is running in. To make a reservation for someone in another time zone either convert the reservation time to your time zone or temporarily change your operating system time zone.
- To change your own password, click the profile icon for User Preference in the upper right corner of the screen. The Change Local Password screen appears. Type your old password and new password (twice). Click the Change button.
- If Reserve button is grayed out, there is no capacity assigned in the sandbox (PR/708208).
- The Junos Space image in Junosphere cannot display the device list or back-up configuration files properly. When backing up a configuration file from Junos Space, Junos Space sees all devices as a single device, so multiple configurations are saved under the first device name.

## Documentation and Release Notes

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For disclosure information on Junosphere Connector, refer to the files located at <http://www.juniper.net/support/products/junosphereconnector>.

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

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

Juniper Networks Books publishes books by Juniper Networks engineers and subject matter experts. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration. The current list can be viewed at <http://www.juniper.net/books>.

## Requesting Technical Support

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Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://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.

## Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

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

## 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 <http://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 <http://www.juniper.net/support/requesting-support.html> .

In order to open a case with JTAC for Junosphere, you must provide the bank serial number. To find the serial number, double-click on the bank icon in Junosphere.

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## Revision History

27 January 2012—Revision 1, Junosphere 2.0

05 March 2012—Revision 2, Junosphere 2.1

04 April 2012—Revision 3, Junosphere 2.2

16 May 2012—Revision 4, Junosphere 2.3

26 July 2012—Revision 5, Junosphere 2.4

10 October 2012—Revision 6, Junosphere 2.5

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