

# JUNOSPHERE RELEASE NOTES

Release 2.1

March 2012

These release notes cover Junosphere Release 2.1. If the information in these release notes differs from the information found in the published documentation set, follow these release notes.

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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.” You need the following documentation to fully understand all the features available in Release 2.1:

- These *Junosphere Release Notes*
- The *Junosphere Guide for Users* and *Junosphere Guide for Bank Administrators*, which provide detailed information about features available in Release 2.1

The entire documentation set, including the release notes, is available in PDF format on the Juniper Networks Web site:

[http://www.juniper.net/techpubs/en\\_US/release-independent/junosphere/information-products/pathway-pages/junosphere/product/index.html](http://www.juniper.net/techpubs/en_US/release-independent/junosphere/information-products/pathway-pages/junosphere/product/index.html)

## 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

The major features of Junosphere Release 2.1 are:

- An Activity Log that provides an audit list of system activities.
- A Notification Message page where the Junosphere administrator can post system messages for all users.
- A Message Center where the bank administrator can post messages for users of a sandbox.
- The ability to delete:
  - Inactive topology in a Sandbox library (users)
  - Inactive topology in a Bank library (bank administrators and Junosphere administrator)
  - Inactive topology in a Public library (Junosphere administrator)
  - Unused capacity in a sandbox
  - A sandbox if not active
- Updates to backend applications that are not visible to users.

### 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). 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
- VM Player

## Junosphere Java Requirement

Java Runtime Environment 6

## Secure Sockets Layer Requirement

SSL 7.1R1

## Junos Software Requirement

You need an application providing SSH or telnet 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. Older virtual image files for this release are listed in Table 2 on page 5. 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_12_1_1_EXP	Unqualified Junos OS Release 12.1.1 for VJX1000	NA
VJX1000_12_1_2_EXP	Unqualified Junos OS Release 12.1.2 for VJX1000	NA
VJX1000_10_3R2_3	Junos OS Release 10.3R2 for VJX1000	JTAC
VJX1000_10_3R1_0_EXP	Unqualified Junos OS Release 10.3R1 for VJX1000	NA
SPACE_LATEST	Latest qualified Junos Space image. This currently maps to SPACE_11_4R1_5	JTAC

SPACE_11_4R1_5	Junos Space Release 11_4R1_5	JTAC
SPACE_11_3R1_5	Junos Space Release 11.3R1_5	JTAC
SPACE_11_2R1_4	Junos Space Release 11.2R1_4	JTAC
SPACE_11_1R1_8	Junos Space Release 11.1R1_8	JTAC
BGP_SERVICE	Latest qualified BGP Service image	JTAC
Cariden_MATE_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
REX_LATEST	Latest qualified Virtual Route Explorer image This is currently maps to REX_9_3	Packet Design
REX_9_3	Virtual Route Explorer Release 9_3	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
SPIRENT_3_90	Virtual Spirent TestCenter 3.90	Spirent

**Table 2: Older Virtual Machine Images**

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

Disk Name	Description	Technical Support Provider
VJX1000_12_1_0_EXP	Unqualified Junos OS Release 12_1_0 for VJX1000	NA

VJX1000_10_3R2_2	Junos OS Release 10_3R2_2 for VJX1000	Juniper Technical Assistance Center (JTAC)
VJX1000_10_3R2_1	Junos OS Release 10_3R2_1 for VJX1000	JTAC

## 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**.

Customers running VJX1000 virtual machines based on Release 10.3 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. Upon official 1 Junos OS Release 12.1 release, the VJX1000 Release Notes will be located at: [http://www.juniper.net/techpubs/en\\_US/junos12.1/information-products/topic-collections/vjx-series/release-notes/index.html](http://www.juniper.net/techpubs/en_US/junos12.1/information-products/topic-collections/vjx-series/release-notes/index.html)

For Junos OS Release 10.3, 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 the interfaces found in the VJX1000 Release Notes. Upon official Junos OS Release 12.1 release, the VJX1000 Release Notes will be located at: [http://www.juniper.net/techpubs/en\\_US/junos12.1/information-products/topic-collections/vjx-series/release-notes/index.html](http://www.juniper.net/techpubs/en_US/junos12.1/information-products/topic-collections/vjx-series/release-notes/index.html)

For Junos OS Release 10.3, the VJX1000 image supports the J-Series device network interfaces listed at:

<http://www.juniper.net/techpubs/software/junos-security/junos-security10.3/junos-srx-jseries-support-reference/index.html>.

See the Interfaces section in the Feature Support Tables chapter.

## VJX Image for Junos OS Release 12.1

The VJX\_12\_1\_2\_EXP and VJX\_12\_1\_2\_EXP images are unqualified and based on Junos OS Release 12.1.1 and 12.1.2, early, experimental releases. Documentation is not available. The VJX\_12\_1\_2\_EXP and VJX\_12\_1\_2\_EXP VJX images run with a license to prevent unauthorized use. After 30 days of continuous operation, the license expires and the VJX image will halt.

## Junos Space Image

This release supports four Junos Space versions:

- SPACE\_11\_4R1\_5
- SPACE\_11\_3R1\_5
- SPACE\_11\_2R1\_4
- SPACE\_11\_1R1\_8

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

## Increasing Junosphere and Junos Space Performance

Performance of Junosphere and Junos Space can be improved by updating Junos Space to 12.1 and using its updated CentOS.

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 Junosphere Centos virtual machine images now contain iperf, mgen, and wireshark and Junosphere Topology Builder.

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.

Junosphere Topology Builder is a spreadsheet to collect network topology information and build network topology file sets.

## Mu Studio and Mu Test Engine Images

This release has support for Mu Studio and Mu Test Engine from Mu Dynamics. The 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 following Packet Design Route Explorer images:

- REX\_LATEST
- REX\_9\_3

## 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.

## Tools

Junosphere has several tools that sit outside the cloud and provide services to help you develop your network topology. The Junosphere online help documents these tools.

Table 3: Tools

Tool Name	Description	Technical Support Provider
Junosphere Topology Builder	This is a tool that allows a user to describe their topology using Google docs and convert it into Junosphere topology file set. The Topology Builder Tool is bundled in the CentOS image file.	NA
WANDL IP/MPLSView Integration Module for Junosphere Lab	Create, model, and simulate a Juniper network in WANDL IP/MPLSView and build a Junosphere topology file in the Integration Module. The latest qualified module is version 5.5.3.	WANDL

## Network Topology Release Highlights

This section covers the network topology release highlights.

### VJX1000 Network Management

All relevant platform manageability components of Junos OS Release 10.3 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 CLI Support

For supported features on the network devices, you can use the CLI features of Junos OS Release 10.3 for J Series routers.

### VJX1000 Junos OS Documentation

For Junos OS Release 12.1, the VJX1000 image is documented in the VJX1000 Release Notes. Upon official Junos OS Release 12.1 release, the VJX1000 Release Notes will be located at:

[http://www.juniper.net/techpubs/en\\_US/junos12.1/information-products/topic-collections/vjx-series/release-notes/index.html](http://www.juniper.net/techpubs/en_US/junos12.1/information-products/topic-collections/vjx-series/release-notes/index.html)

For Junos OS Release 10.3, for help on supported features on the network devices, you can use the documentation for Junos OS Release 10.3 for J Series routers.

The Junos OS Release 10.3 documentation can be found at:

<http://www.juniper.net/techpubs/software/junos-jseries/junos-jseries10.3/index.html>

## VJX1000 Interfaces

VJX1000 Junos OS Release 10.3 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 File Set Size Constraints

A topology file set must be less than 10 MB, while each file must be less than 6 MB.

## Features Not Fully Qualified

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The Junosphere Release 2.1 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 enable 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 a "Save" and "Save As" command. 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).
- Users need to click on the refresh icon in the Active Topology Details tab to monitor the status after starting/stopping a topology (PR/708220).
- After starting a topology, an error may occur if you repeatedly press the **Refresh** button. The sandbox may no longer be accessible (PR/ 710642).
- 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.
- The Internet Explorer (IE) browser does not work as well as Firefox.
- Users may not be able to access files in the rare situation when the Virtual Machine Manager gets out of synch. Stop the topology and start a new browser session (PR/598829).

- If you access an active sandbox and cannot Telnet to a virtual machine or cannot use the Save and Save As functions, restart the topology. (PR/705705).
- Users with over-subscribed links or poor quality connections may not be able to login to Junosphere or may experience slow browser refresh or reload (PR/ 723212).
- Users cannot tell when a message occurred or how old each message is in the Message Box (PR/707334).
- Bank administrators cannot see active users (PR/716701).

## 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)

## 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, package it, 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 .tgz configuration file set from the virtual machine to your local PC. Untar and unzip the .tgz file. Edit each .conf file, removing the interface ge-0/0/0 configuration. Save the .conf files and tar and zip the configuration file set. Change the extension of the configuration file set to .tgz. The next time you upload the .tgz file and start the topology, the new configuration will be implemented.

## 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/sa7.1/information-products/pathway-pages/sa-series/index71.html](http://www.juniper.net/techpubs/en_US/sa7.1/information-products/pathway-pages/sa-series/index71.html).

## Junosphere Developer

The routing engine (RE) SDK application might not work as expected when VJX-1000 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

- Reservations can now be cancelled up to one hour before the start time.
- Set your browser to allow popups 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 recover a lost password, users should contact their bank administrator. Bank administrators should click the Customer and Users icon and click on the user whose password they want to change. Then enter a new password for the user and reconfirm it. Click the Save Changes button for the new password to take effect.
- 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).

## Resolved Problems

- A segment fault no longer results when while running NETCONF conformance tests and a validate operation is performed on /var/tmp/netconf.conf (PR/600780).
- Packet Design Route Explorer and Cariden MATE no longer have a conflict and can be run in the same topology (PR/723754).
- If the same user that started a topology clicks on the **Join** button, a browser will no longer hang (PR/708324).
- You can now Reset or Rebuild a virtual machine by checking the checkboxes on the Virtual Machine tab (PR/708333).
- Only one process can telnet to the console port at a time. If one connection exists, others cannot be made. The user can now reset the virtual machine to exit the condition (PR/665498).
- Clicking the Power Over Ethernet, Virtual chassis, and Switch buttons no longer causes the browser to hang (PR/591918).
- The Junosphere Administrator can now delete users from a Customer listed under the Customers and Users tab (PR/700670).
- If you create a user with an invalid password, a message now displays that indicates the problem (PR/716795).
- The Bank library window is now expandable. (PR/742532).
- Customer names cannot have spaces. Use – (dashes) or \_ (underlines) to separate first and last names. Using a space will cause the Create User button to grey out (PR/700141 and 736588).
- You can now view what version of Junosphere is being used in the user interface. (PR/734154).
- Parser errors now show up as an error message in Bank->Sandbox-> Active Topology (accordion) -> Details (tab) -> Error Messages text area (PR/717041).
- Creating a topology intermittently no longer hangs the user session (PR/727840).
- Permissions are now displayed with the associated user in the sandbox (PR/731025).
- The assigned capacity to a bank window now disappears after you click on the Assign button (PR/731502).
- When you create a sandbox for a bank, Junosphere will intermittently hang (PR/731512).

- You can now delete the capacity that is assigned to a sandbox (PR/731869).
- Junosphere now gives you a message when a virtual machine fails to bind. (PR/731901).
- The user interface no longer hang when you un-assign 100% of the capacity from the sandbox back to bank (PR/732584).
- The user interface now supports partial removal of capacity from the sandbox back to the bank (PR/732876).
- The topology no longer runs after the reservation runs out (PR/733337).
- Loading a sandbox with an active topology is no longer slow (PR/733929).
- The user interface now has an easy way to tell what version of Junosphere is being used. (PR/734154).
- Store-keeping units (SKUs) assigned to the bank only show up as Total Capacity (PR/734506).
- Large topologies can now be uploaded (PR/734519).
- The bank administrator can no longer make a reservation to a sandbox that has 0 capacity (PR/735366).
- You can now stop an unfinished topology after you start it (PR/731903 and 708321).
- Deleting a topology file now works (PR/735822).
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## Documentation Feedback

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We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to [techpubs-comments@juniper.net](mailto:techpubs-comments@juniper.net), or fill out the documentation feedback form at <https://www.juniper.net/cgi-bin/docbugreport/>. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

## 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 postsales 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/resourceguides/7100059-en.pdf>.
- 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

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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/>
- 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

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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, visit us at <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.

## Revision History

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27 January 2012—Revision 1, Junosphere Release 2.0  
05 March 2012—Revision 2, Junosphere Release 2.1

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