



Junosphere

Frequently Asked Questions

Release

2.7



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Junosphere Frequently Asked Questions

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Juniper Networks hardware and software products are Year 2000 compliant. Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

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Documentation and Release Notes

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>.

Documentation Conventions

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

Table 1: Notice Icons


Icon	Meaning	Description
	Informational note	Indicates important features or instructions.

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

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the configure command: user@host> configure
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> show chassis alarms No alarms currently active
<i>Italic text like this</i>	<ul style="list-style-type: none"> Introduces important new terms. Identifies book names. Identifies RFC and Internet draft titles. 	<ul style="list-style-type: none"> A policy <i>term</i> is a named structure that defines match conditions and actions. <i>Junos OS System Basics Configuration Guide</i> RFC 1997, <i>BGP Communities Attribute</i>
<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@# set system domain-name <i>domain-name</i>
Text like this	Represents names of configuration statements, commands, files, and directories; interface names; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level. The console port is labeled CONSOLE.
< > (angle brackets)	Enclose optional keywords or variables.	stub <default-metric metric>;
(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.	broadcast multicast (string1 string2 string3)
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[] (square brackets)	Enclose a variable for which you can substitute one or more values.	community name members [<i>community-ids</i>]
Indentation and braces ({ })	Identify a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	

Documentation Feedback

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, 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

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> .

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

CHAPTER 1

Ordering Junosphere

- [How do I order Junosphere? on page 11](#)
- [Can I order with a credit card? on page 11](#)
- [What am I ordering? on page 12](#)
- [How do the SKUs work? on page 12](#)
- [How do I use the purchased capacity? on page 12](#)
- [How does the Junosphere Connector SKU work? on page 13](#)

How do I order Junosphere?

Junosphere is available as a SKU in the Juniper price book. You can order Junosphere as you would any Juniper product.

- You order via the standard PO process or with a credit card.
- Note that the product is not discountable.

Can I order with a credit card?

As of February 3, 2012, customers can use a credit card to order their Junosphere time. We reuse the [Juniper Learning Portal](#) to handle the ordering front end.

Credit card use is designed for individuals who want to buy access time in Junosphere (typically, people who are studying for the JNCIE) and companies that find it easier to use credit cards for small dollar purchases.

- Credit cards work on a WW basis and just replace the PO process from a Juniper perspective. The rest of the customer workflow is the same.
- If a customer makes a mistake in ordering and requires a refund, the customer should send an email to Junosphere_schedule_admin@juniper.net.

What am I ordering?

When you order a SKU, you are buying capacity in Junosphere. In order for you to design, test, or train on Junosphere, you must have capacity in your account in your Junosphere bank. With the PO process or a credit card purchase, you are prepaying for capacity that you want to use. This is similar to buying a prepaid calling card in that you can use your capacity when you want it.

There are two types of capacity you can order:

- Regular capacity, which is based on a specific number of VM units that are ordered on an as-needed basis and used through reservations.
- Annual plan capacity, which provides a fixed number of VM units for a full year. Topologies can be run as frequently or rarely as needed. There is no need for a reservation and no need to purchase additional capacity. This plan also provides additional overflow capacity of a fixed VM unit amount.

How do the SKUs work?

Each SKU provides a specific amount of VM units. A VM unit is the amount of capacity needed to run one basic virtual machine (VM) for one day. Every virtual network device in Junosphere has a cost of at least one VM unit.

For example, the first SKU shown below gives $2 \times 10 \times 30 = 600$ VM units. Such a capacity can be used to run a very large topology of 300 basic VMs for two days or a small topology of five basic VMs for 120 days.

The second SKU provides 50 VM units at any time and unlimited connectors. It also provides 1000 VM units of overflow capacity.

SKU	Description	Quantity
JUS-LAB-10VM-30	This gives the customer $10 \times 30 = 300$ VM units. Includes images and tools.	2
JUS-ANNUAL-PLAN-50	50 VM unit annual plan. Includes 50 VM units at any time and 1000 VM units of overflow capacity. Unlimited connectors.	1

How do I use the purchased capacity?

If you order 600 VM units of capacity, you can use the capacity in either of the following ways:

- Flexible Capacity—Enables you to schedule your VM units whenever you want until they are all used. For example, you could use 10 VM units on day 1, 50 VM units on day 2, 0 VM units on day 3, and so on. You could even build a very large topology that uses 600 VM units and run it for a single day.
- Priority Reservation Capacity—Enables you to use a constant number of VMs every day. For example, you can use 20 VMs every day for 30 days.

Flexible Capacity is the most common use case, giving customers the most options on consumption. Priority Reservation is useful for customers who want steady, metered access.

If you order annual plan capacity, you can use the capacity as rarely or as often as you want. You do not need to make a reservation as long as there is sufficient capacity.

How does the Junosphere Connector SKU work?

The Junosphere Connector SKU—JUS-CONNECT-1—provides the customer with one Junosphere Connector tunnel and the ability to transfer 1Mbps of data for one day.

CHAPTER 2

Junosphere Order Fulfillment

- [What happens after I place a PO/CC order with Juniper? on page 15](#)
- [What are the most common mistakes made when setting up a Junosphere account? on page 15](#)
- [How long does it take to set up a Junosphere account? on page 16](#)

What happens after I place a PO/CC order with Juniper?

Once you place a purchase order or credit card order, the following events occur in order for you to gain access to Junosphere.

1. After you place an order, you will receive an e-mail from RTU-SENDER with authorization codes and instructions.
2. Follow the instructions in the e-mail.
 - Log into the [Juniper Customer Support](#) site.
 - Enter your authorization codes.
 - Set up your bank.
The bank is created in Junosphere.
3. You receive a WELCOME e-mail from Junosphere Administrator - No Reply. The e-mail includes your log-in credentials and a two-page *Getting Started* guide.
4. Log in to Junosphere and set up your sandboxes, user accounts, and libraries.

What are the most common mistakes made when setting up a Junosphere account?

The following list shows the most common mistakes made:

- **Wrong Contact**—Your contact must be someone who is involved in using Junosphere, not an administrator or purchasing agent. Please make sure that the best customer e-mail is on your order.
- **Missed E-mail with authorization codes**—You do not notice the first e-mail that contains the authorization codes. Without you entering the information to set up the account, nothing happens. Contact JTAC to make sure that you have started your account.

- Missed WELCOME E-mail—You do not notice the second e-mail with your account credentials. Contact JTAC to make sure that you have received your credentials.

How long does it take to set up a Junosphere account?

Order processing time is between three and days business days, depending upon whether you order by PO or credit card. Once you receive and enter your authorization codes, credentials are sent immediately.

Note that RTU authorization codes are sent via email and you must take action to register the codes. To expedite the setup of your Junosphere account, make sure you register your authorization codes as soon as you receive them.

CHAPTER 3

Frequently Asked Questions about Junosphere

- [What is Junosphere? on page 17](#)
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What is Junosphere?

Junosphere is a ground-breaking virtual environment that enables customers to create and run Junos-based networks in the cloud. Junosphere is offered to customers in the form of services that are tailored to the needs of specific customers:

- **Junosphere Classroom**—Targeted at educational environments, Junosphere Classroom can be used by partners, customers, academic, or training institutes to teach employees or students routing protocols or Junos.
- **Junosphere Lab**—Enables service providers and enterprises to replicate their physical networks in a virtual environment for cost-effective and flexible training, design, and testing exercises.
- **Junosphere Developer**—enables Junos SDK and Space SDK developers to use Junosphere as a platform for development and testing applications.

Why should I use Junosphere?

Junosphere can reduce total cost of ownership by 90% or more when compared with owning and operating a physical networking lab. In addition, because Junosphere is hosted in the cloud, it is much more flexible and scalable than physical labs, enabling customers to perform design and testing exercises with a degree of realism and scale not possible before.

What are the differences between the Classroom and Lab services?

The Classroom and Lab services appeal to different audiences. Already there are topologies that are unique to each service. In the future we expect to enhance each service to provide additional tools that are relevant to each market. For example, Classroom will contain more prepackaged topologies and learning environments that are applicable to educational environments, whereas Lab would provide access to more partner applications typical of a service provider lab environment.

What are the components of Junosphere?

Presently, Junosphere comprises the following components:

- Virtual Routers—Virtualized software versions of Juniper hardware devices. Virtual routers currently in Junosphere include VJX (virtual J-series router), JunosV Firefly (formerly virtual SRX) and VPTX (virtual PTX). All of these consist of true Junos software on a KVM hypervisor running on an x86.
- VMM (Virtual Machine Manager)—Middle abstraction layer of software sitting between the KVM hypervisor and virtual routers. It is integral to the Junosphere offering in that it creates, connects, and manages virtual machines (VMs).
- User Interface—The “front door” to the Junosphere service that enables a user to login, create, modify, launch and join topologies. It also facilitates management of users and purchased VM unit capacity.
- Junosphere Connector—The client/server software that enables an SSH tunnel to connect the virtual network environment in the Junosphere public cloud with the physical network on customer's premises anywhere in the world. This also provides support for multi-vendor environments.
- Junos Space—Junos Space can be run within Junosphere to manage your virtual network.
- Guest OS Images—While we expect that most people will want to load VJX1000 as their OS, we also provide a CentOS VM so customers can run their own CentOS applications, as well as third-party applications on CentOS.
- Partner products—Junosphere Lab is intended to provide a complete and realistic lab environment and we are working with partners to make partner applications available. Today, the partner applications available with Junosphere include Cariden, Mu Dynamics, Packet Design, Spirent, and WANDL. These are included in Junosphere's usage-based pricing model, wherein it takes one VM unit to run each partner VM for one day. There are no additional license fees.

Do you have any customers for Junosphere?

Yes, external customers include:

- Training partners, such as one of the largest companies that provides training for JNCIE certifications
- Service providers, such as the top five carriers in the US
- Enterprise customers, including one of the world's largest financial institutions

Can I get a free trial of Junosphere?

Yes, we are currently running a Junosphere Test Drive program that allows customers to access the service on a trial basis for a limited time. Please refer to [Junosphere Test Drive 2012-13](#).

What is the basic process for accessing Junosphere?

The following list describes the basic process for accessing Junosphere:

- The customer orders a SKU for access to the service.
- Juniper gives the customer access credentials and other account information and puts the customer time into the customer's time bank.
- The customer comes into the cloud, sets up subordinate accounts if needed, and loads or creates topologies and configurations. When ready, the customer schedules a time to launch the topology. At the scheduled time, the topology is launched and consumes VM resources; the customer's bank is decremented.
- The customer "plays" with topologies, capacity, configurations, partner tools, Space applications, and so on for learning and lab modeling.

Do I have to use my time contiguously?

You do not need to use your time contiguously*. You can schedule the time any way you want in increments of whole days. For example, if you buy "10VM-30" SKU, you would have access to 300 VM units, each of which can run 1 basic VM for 1 day. So you could use all 300 VM units in one day, use 75 VM units for 1 day once a week for 4 weeks, use 20 VM units every other day for a month, and so on.

*The only exception to this is the free Test Drives we offer customers. These must be scheduled in a contiguous fashion.

Can I buy an “always on” or long-term license?

Yes. In fact, we expect our largest customers to buy Junosphere on a long term or yearly basis. Currently, Junosphere offers an annual plan in three sizes — 10, 50, and 100 VM units per day. In the annual plan, the customer has that amount of capacity each day, irrespective of prior usage. Each of these plans bundles different amounts of extra or "overflow" capacity to supplement the fixed daily capacity, as well as daily amount of Junosphere Connectors. The purchase price of the three annual plans is \$20,000, \$100,000, and \$200,000 for the 10, 50, and 100 VM unit plan, respectively.

What happens after my purchased time runs out?

When your purchased time expires, the VM topology will be shut down by Junosphere. You can still access Junosphere, but you cannot launch new topologies. You can download and store your topologies and configurations on your own machines and bring them back for use later.

How does the time-based clock work?

Junosphere's 24-hour clock starts when you launch your active topology and start consuming VM resources. Creating or editing your topologies in Junosphere does not start the clock and consume your time.

I cannot get the recommended browser to work with Junos Space VM. Is there a workaround?

The performance of Junos Space Virtual Machines in Junosphere can be improved by updating Junos Space to images Space12.1R1.8 with apps and Space12.2. For more information, see *Accessing Junos Space Using CentOS in a Junosphere Topology* in the *Junosphere User's Guide*.