

JUNOSPHERE CLOUD

Product Overview

Juniper Networks Junosphere Cloud is a software-based service that allows networking professionals to perform network testing, design, and training exercises in a risk-free virtual environment that uses real network operating systems. Junosphere Cloud allows you to closely replicate physical networks consisting of Junos OS-based devices and ecosystem tools without the cost, complexity, or limitations of a physical lab. Junosphere Cloud provides the following benefits:

- Flexibility—rapidly and dynamically change configurations and network designs
- Scale—create networks of hundreds of nodes
- Realism—run the same Junos OS found on Juniper hardware systems
- Cost—reduce total cost of ownership by as much as 90%¹

¹ACG Research

Product Description

Networking professionals across all industries share a common requirement for access to networking labs. Access to a lab environment where you can perform network testing, design, and training exercises independent of the production network is key to keeping your network running efficiently, planning new design implementations, and training or educating employees.

Yet due to the costs to acquire and operate lab equipment, many network labs are undersized and overutilized—if you are fortunate enough to be able to access a lab at all. Even in the largest organizations, capital and operational costs prevent network labs from achieving the same level of scale as the production network, making it difficult to accurately test new software releases, features, and upgrade procedures.

Juniper Networks® Junosphere™ Cloud is Juniper's unique solution to overcoming these challenges. Junosphere Cloud provides a cost-effective and flexible environment where you can create and run networks in a virtual environment. These networks can be used for the same exercises you perform today in your physical lab and more, including network design, modeling, troubleshooting, testing, and training.

Accessed on demand and hosted entirely in Juniper-operated datacenters, Junosphere Cloud requires no hardware—instead you only need a Web browser to access your networking lab. Networks created in Junosphere Cloud run the same Juniper Networks Junos® operating system that powers Juniper hardware systems, ensuring that results you see in Junosphere Cloud are consistent with real-world network behavior. And, because Junosphere provides complete design flexibility and nearly unlimited scale, it also enables you to perform network exercises and model scenarios that simply wouldn't be feasible in a physical networking lab.

By moving your network testing, design, and training activities to the cloud, Junosphere Cloud can both help save costs and enhance capabilities. ACG Research estimates that, when compared to a physical networking lab, Junosphere Cloud can reduce total cost of ownership (TCO) by as much as 90%. Project times are estimated to improve by 30%—which translates into increased productivity and more work done.

Architecture and Key Components

Junosphere Cloud is a commercial-grade software-as-a-service (SaaS) offering, with always-on availability, and it is fully supported by Juniper Networks Technical Assistance Center (JTAC). Junosphere Cloud resources are hosted in dedicated data centers owned and operated by Juniper Networks, and they leverage the latest in virtualization technologies. The components that make up Junosphere Cloud are described below.

Junosphere Cloud Services

Junosphere Cloud is offered as a service available with flexible, pay-as-you-go based purchasing options, or as a simple Annual Plan for more frequent Junosphere users. The on-demand Junosphere services are offered a-la-carte as Junosphere Lab and Classroom, for their respective user communities.

The Junosphere Annual Pass facilitates budget planning by providing always-on Junosphere capacity for an entire year. Operators have maximum control of capacity pools assigned to diverse teams and projects. The bank administrator can customize the minimum guaranteed capacity for each sandbox to ensure

baseline availability, and also the maximum utilization of VM Units in each sandbox to prevent unauthorized abuse of consumption.

The flexible capacity allocation system available with the Annual Plan maximizes the usage of available VM Units shifting capacity from inactive sandboxes to those which experience temporary spikes of demand. These allocation algorithms ensure best usage of the capacity pool at every moment providing excellent granularity management.

Additionally, all the Annual Passes provide a la carte overflow capacity. The 50 and 100 Annual Passes also include unlimited connector capacity.

Features and Benefits

Table 1. Junosphere Features and Benefits Summary

Feature	Feature Description	Benefit
Commercial SaaS platform	Junosphere Cloud delivers the confidence that comes with a service that is available 24/7/365 and fully backed by JTAC.	<ul style="list-style-type: none">Increased confidence in your results.Maximum uptime and availability.
Efficient scale	Cost advantage of virtual machines enables larger scale networking resources.	<ul style="list-style-type: none">Reduce student-to-equipment ratio.Build more accurate networks and topologies.
Flexible cost structure	Range of subscription based annual plans and on-demand payment options enable you optimize costs for your unique requirements.	<ul style="list-style-type: none">Rapidly and quickly scale up or down with demand-based capacity.Annual Plans provide convenience and benefits for heavy Junosphere users.
Real operating systems	Junosphere Cloud gives you access to the same full featured Junos OS running in thousands of commercial networks—not a simulation.	<ul style="list-style-type: none">Provide real hands-on experience with the latest networking technology.Accurately replicate commercial networks.
Flexible network design options	Junosphere Cloud offers a variety of options for network topology design, including importing from a live network, a graphical design wizard, and text-based configurations.	<ul style="list-style-type: none">Quickly and easily get started on Junosphere.Try new designs and make modifications with total flexibility.
Flexibility and agility	Virtual resources can be modified, ordered, and implemented much more quickly than on physical networks.	<ul style="list-style-type: none">Quickly adapt and perform varied design and testing exercises.Speed project time by as much as 30%.
Interoperability and integration	Junosphere Connector enables your virtual resources to interoperate with real-world networks.	<ul style="list-style-type: none">Enjoy enhanced collaboration opportunities.Enable broader set of experiments and modeling exercises for students.
Complete lab ecosystem	Junosphere Cloud provides access to a variety of partner tools, in addition to Junos OS network elements	<ul style="list-style-type: none">Planning and analysis tools give you the same visibility into Junosphere network you get in the real world.Performance testing applications enable you to stress test your Junosphere networks.

Specifications

Table 2. User Interface Compatible Platforms

Platform	Operating System	Browsers and Java Environment
Windows	<ul style="list-style-type: none">Vista with Service Pack 1 or 2 on 32-bit or 64-bit platformsWindows 7 on 32-bit or 64-bit platformsXP Professional SP3 on 32-bit or 64-bit platformsXP Home Edition SP3	<ul style="list-style-type: none">Internet Explorer 9 and upFirefox 19 and upJava 7 update 21
Mac	<ul style="list-style-type: none">Mac OS X 10.6, 32-bit and 64-bitMac OS X 10.5.x, 32-bit and 64-bit	<ul style="list-style-type: none">FireFox 19 and upJava 7 update 21
Linux	<ul style="list-style-type: none">openSUSE 10.x and 11.x, 32-bit onlyUbuntu 9.10 and 10.x, 32-bit onlyRed Hat Enterprise Linux 5, 32-bit only	<ul style="list-style-type: none">Firefox 19 and upJava 7 update 21

Client Hardware Recommendations

- CPU: 1 GHz or higher is recommended for Windows; for Mac, 1 GHz G4 or Intel processor is recommended.
- Memory: Minimum of 256 MB of available RAM is recommended.
- Color quality: For best results, use 16-bit (8-bit, 24-bit, and 32-bit are also supported).
- Monitor resolutions: 1,024 x 768 pixels is recommended; up to 2,048 x 2,048 pixels is supported.

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services.

Ordering Information

Junosphere offers a range of flexible purchase options, ranging from always available Annual Plans to Regular Capacity which can be purchased as needed. Both the Annual Plans and the Regular Capacity are based on the concept of a virtual machine unit (VM unit). A single VM unit allows you to run the basic images available within Junosphere for a period of 24 hours. More advanced images may require using more than one VM unit.

Annual Plans provide guaranteed access to the purchased virtual machines available in 10, 50 and 100 Unit increments every day for 1 year and are ideal for large organizations and heavy Junosphere users. Additional overflow capacity is also included and can be used when requirements exceed the guaranteed access number of VMs. Annual Plans also include unlimited Junosphere Connectors to allow for connectivity between the virtual and a physical environment. This plan maximizes the efficiency of capacity usage by enabling capacity to be shifted from idle sandboxes to those which need it at any given time. The Annual Plan capacity can be flexibly distributed among different groups.

Regular Capacity provides a pay-per-use option where once purchased in this manner, VM units are consumed only when you launch and run an active network topology. For example, launching a five node network and allowing it to run for two days (48 hours) would consume 10 VM units. Designing networks using the Topology Wizard does not consume any VM units, and can be done independent of running an active topology.

Model Number	Description
JUS-ANNUAL-PASS-10	Junosphere Annual Plan providing 10 VM Units available at any time, and 200 VM Units of "overflow" capacity
JUS-ANNUAL-PASS-50	Junosphere Annual Plan providing 50 VM Units available at any time, 1000 VM Units of "overflow" capacity, and unlimited Connectors
JUS-ANNUAL-PASS-100	Junosphere Annual Plan providing 100 VM Units available at any time, 2000 VM Units of "overflow" capacity, and unlimited Connectors
JUS-LAB-10VM-1	10 Junosphere Lab VM units
JUS-LAB-10VM-30	300 Junosphere Lab VM units
JUS-CLASS-10VM-1	10 Junosphere Classroom VM units
JUS-CLASS-10VM-30	300 Junosphere Classroom VM units
JUS-CONNECT-1	Ability to connect virtual and physical lab network environments, and transfer data at the rate of 1 Mbps to the virtual network topology for one day
JUS-CONNECT-30	Ability to connect virtual and physical lab network environments, and transfer data at the rate of 1 Mbps to the virtual network topology for 30 days

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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