JRR200 ROUTE REFLECTOR

Product Overview

Traffic growth, driven by 5G, multicloud, and IoT connections, is straining enterprise and service provider networks.

Juniper's secure and automated cloud lets service providers quickly react to evolving market conditions and accelerate service delivery with world-class products and innovative architectural components. The JRR200 Route Reflector Appliance is part of this solution.

Powered by Junos OS, the JRR200 is a small form-factor route reflector that delivers high performance and scale for demanding BGP networks, helping service providers achieve operational simplicity by removing complex qualification and integration tasks found with pure virtual route reflector (VRR) solutions.

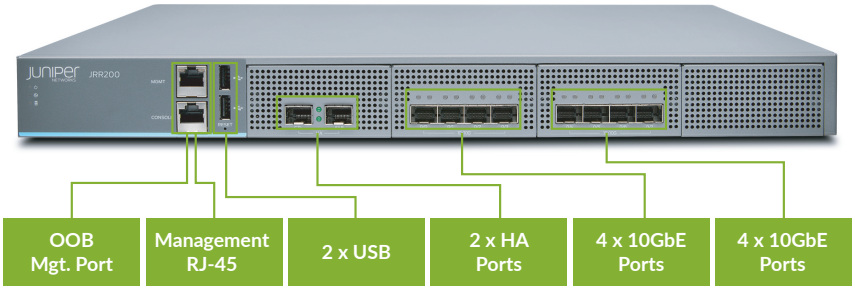
Product Description

Juniper Networks® JRR200 Route Reflector Appliance is an application-based route reflector that provides the necessary routing scale for service providers, data center providers, and enterprise customers requiring large routing tables on a platform that offers 10GbE connectivity in a space- and power-optimized package.

The JRR200 Appliance offers operational and management simplicity with VRR software integrated on the host hardware platform, eliminating the need to choose customized servers and hypervisor software. This combination also does away with the need to maintain separate support based on hardware and software issues.

The compact JRR200 offers tremendous scale-out and efficiency for space- and power-constrained environments, allowing customers to simplify network designs and significantly reduce OpEx to support a broad range of use cases, including cloud services, distributed metro, and data center.

The JRR200 is powered by the Juniper Networks Junos® operating system and offers Zero-Touch Provisioning (ZTP), shortening the provisioning time for new deployments and allowing operators to quickly move on to other tasks. By leveraging Junos OS, the appliance inherits the rich native BGP functionality found on all Junos OS-powered routers and switches. Operators can also take advantage of native Junos OS automation and management toolkits to easily integrate into any existing framework or environment, delivering further operational simplicity.



Software	vRR
Total onboard ports (1GbE/10GbE)	8
SFP+ transceiver ports (1GbE/10GbE)	8
Dedicated high availability (HA) ports 1GbE/10GbE (SFP/SFP+)	2
10/100/1000BASE-T RJ-45 management port	1
RJ-45 console port	1
USB 2.0 port (Type A)	2

Figure 1: JRR200 Route Reflector Appliance hardware overview

Architecture and Key Components

Junos Operating System

Junos OS is a reliable, high-performance, modular network operating system that is supported across all of Juniper's physical and virtual routing, switching, and security platforms, reducing the cost, complexity, and resources required to implement and maintain a Juniper-based network. With secure programming interfaces, the Juniper Extension Toolkit (JET), versatile scripting support, and integration with popular orchestration frameworks, Junos OS offers flexible options for continuous delivery and DevOps-style management, helping service providers unlock more value from the network.

For more details on Junos OS, please visit www.juniper.net/us/en/products-services/nos/junos/.

Junos Routing Engine

By leveraging Junos OS, the JRR200 Appliance inherits all of the native Junos OS features found across the Juniper routing, switching, and security portfolio:

- BGP add-path enhancement provides a selective approach to add-path for prefixes. Routing information base (RIB) table sizes are reduced with policy-based selections enabled for selected prefixes. Multiple paths to a destination can be advertised, and communities allow add paths tagged only for a specific community.
- Large BGP communities enable peering with new emerging operators by supporting 4-byte AS numbers (RFC 6793). Applying policies to large communities gives operators the ability to effectively expand and govern their peering.
- Adaptive BGP update compression speeds BGP convergence on large peer groups and multi-CP setups. By adaptively sensing high CPU and I/O conditions, BGP data volumes can be reduced by up to 80%.
- Optimal route reflection offers a way to advertise the best path from a client view instead of the route reflector perspective. Built on a client group implementation, it offers effective scale without having to create more RIB (also known as routing table) copies.
- Routing protocol process (rpd) provides the flexibility required to write new protocols and integrate rpd with SDN controllers. These networks support more options to deploy services over large BGP-based networks, support multivendor environments, and rapidly deploy customized routing solutions.

Features and Benefits

The JRR200 brings simplicity, scalability, and reliability to the management of demanding, high-growth BGP networks—all in a compact form factor.

Operational Simplicity

By combining the leading software for VRR functionality on a form factor optimized for space and power, the JRR200 eliminates the complexities of dealing with service hardware, hypervisor software, and installation. All issues are handled through a single source—the Juniper Networks Technical Assistance Center (JTAC)—and the application comes pre-installed to improve time to service delivery with ZTP.

Seamless Scalability

The JRR200 provides highly scalable environments with dense 8x10GbE port capacity and high throughput port connectivity. Routing tables up to 50 million routing RIBs are also supported.

Ultimate Reliability

The JRR200 features dual redundant power supplies to ensure reliability. The appliance also provides optimal power efficiency, reducing power footprint with no sacrifice to scale or features.

Applications and Use Cases

The JRR200 offers tremendous flexibility, supporting multiple use cases across network-based, cloud-based, and Clos fabric designs.

Network-Based Route Reflector Design

JRR200 users can rapidly deploy a pre-integrated route reflector that scales to meet the most demanding BGP network requirements. Using advanced features, the best routes are provided and services that run across the networks will ensure the best possible customer experiences.

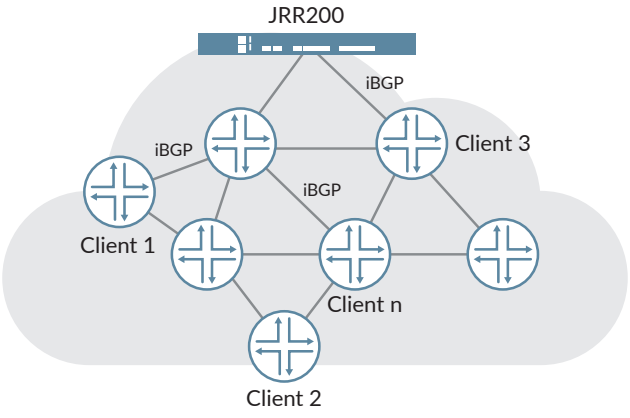


Figure 2: Network-based route reflector design

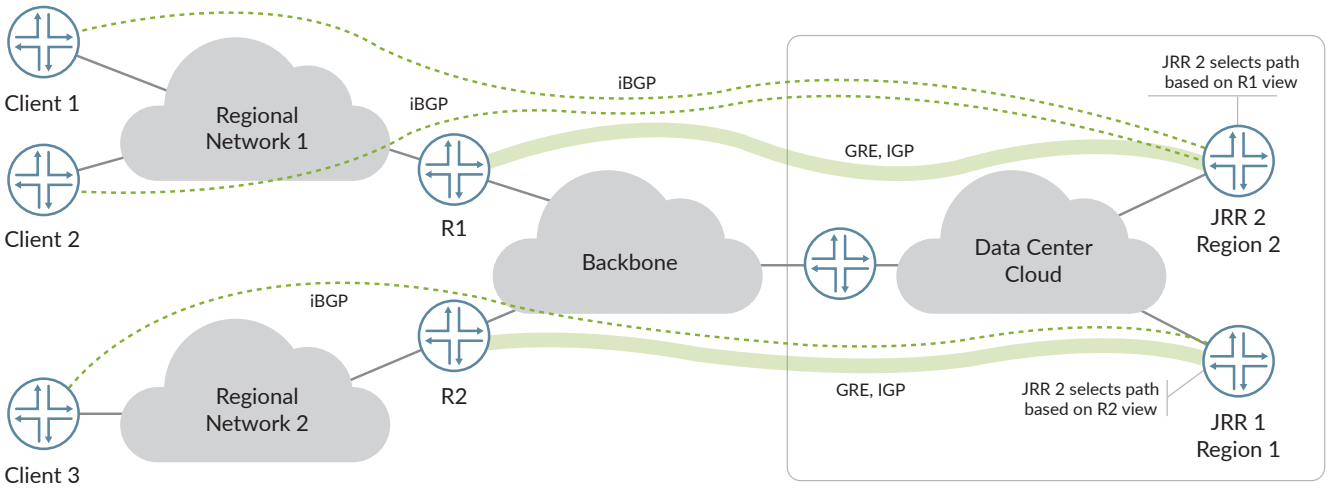


Figure 3: Cloud-based route reflector design

Cloud-Based Route Reflector Design

With the growing complexities of the cloud and dependencies on multicloud, the JRR200 offers an effective solution for solving the best path selection process for cloud-based route reflectors. The JRR200 can be run as a pre-integrated application in any data center to assure the best possible availability, scale, and routing performance.

Route Reflector in a Clos Fabric

The JRR200 plays a key architectural role in data center networks where large numbers of connections across large numbers of ports are managed by multiple switches. In this nonblocking environment, the JRR200 can be hosted in the spine node to interconnect leaf nodes to create a highly available environment.

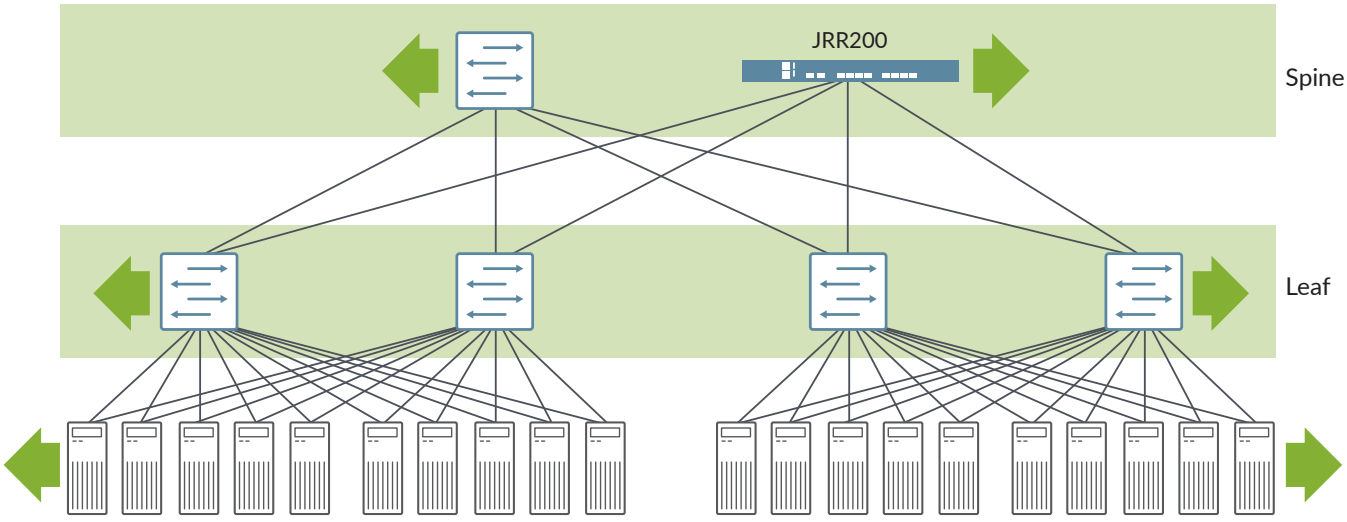


Figure 4: Route reflector in a Clos design

JRR200 Specifications

- Physical dimensions (HxWxD): 1.7x17.48x25 in (4.31x44.39x63.50 cm)
- Airflow: Front to back
- Weight:
  - 29 lb (13.15 kg) with two AC power supplies
  - 28 lb (13.06 kg) with two DC power supplies
- Operating temperature: 32° to 104° F (0° to 40° C) at sea level
- Number of fan trays: 4
- System mounting: Four-post rack mounting
- Rack units: 1
- Power: 2 x 650 W redundant AC-DC/DC-DC PSU
- CPU: Intel 10 Core Xeon D
- Memory: 64 GB RAM
- Storage: 240 GB with 1+1 RAID

Ordering Information

Product Number	Description
JRR200-AC	JRR200 base system hardware with 8x10GbE ports, two AC power supply units, four fan trays, and 64 GB memory (must order S-VRR-V-L software to complete system)
JRR200-DC	JRR200 base system hardware with 8x10GbE ports, two DC power supply units, four fan trays, and 64 GB memory (must order S-VRR-V-L software to complete system)
JRR200-CHAS	JRR200 chassis with Junos OS software included; no power supply units and no fans
JPSU-650W-AC-AFO	Juniper 650 W AC power supply, port side-FRU side flow
JPSU-650W-DC-AFO	Juniper 650 W DC power supply, port side-FRU side flow
SRX4200-FAN	SRX4100/SRX4200 fan unit
S-VRR-V-L	Virtual route reflector software

Note: When ordering JRR200 through configurator, software (S-VRR-V-L) purchase is mandatory.

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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