

# DATA CENTER INFRASTRUCTURE FOR SMALL AND MIDSIZE BUSINESSES

Simplified and cost-effective infrastructure for SMBs leveraging the power of today’s network technology

## Challenge

Most advanced technology products and solutions are associated with high cost and, as such, are not typically available to SMBs. Thus, these organizations are not able to enjoy the considerable benefits of deploying the latest networking technology in their businesses.

## Solution

Juniper’s data center solution offers the latest in switching functionality and network security. It includes the EX2200, EX4200, SRX650, and SA2500—allowing SMBs to easily deploy switching and security in the data center at a very attractive price point.

## Benefits

- High ASIC-based performance
- Pricing attractive to SMBs
- Spanning-tree free environment with full network high availability
- Junos OS consistency-based environment and stream processing capabilities.

Small and medium-size businesses are striving to enjoy the benefits of the latest in networking technology. Juniper Networks offers a cost-effective solution for the SMB data center network infrastructure that delivers the latest technology and many related benefits, without the high cost typically associated with them.

## The Challenge

Organizations today are enjoying the benefits of server virtualization, as well as new application models that facilitate third-party outsourcing of portions of their IT infrastructure. But network solutions are not bringing all of the new advancements in IT technology to today’s data center world, particularly in small and midsize businesses. Data center networks consist of multiple devices, are expensive to buy and costly to operate, and also are designed inefficiently with three tiers of network connectivity that do not allow seamless support for new application models and technologies. Existing solutions do not properly support server virtualization, as virtual servers present an additional networking tier and mobility of workloads requires larger L2 broadcast domains. Additionally, existing networks are not suited for excessive traffic between systems residing within the data center.

Small and midsize businesses, seeing IT expenditure as negatively affecting their bottom line, find it challenging to keep up with the latest advances in technology for a few reasons: (1) implementing new IT solutions requires significant operational overhead in the implementation phase; (2) new IT solutions are typically associated with high capital cost; and (3) the adoption of new technologies after implementation is not immediate and this lag time delays ROI.

Finding a solution that enables SMBs to leverage the best of what networking technology has to offer, without significantly increasing costs, fairly sums up the SMB requirement.

## The Juniper Networks SMB Data Center Network Solution

Juniper’s SMB data center package offers organizations the industry’s leading high-performance data center network based on 1GbE connectivity to servers and network attached storage, multiple GbE stateful firewall integrated services gateways, and state-of-the-art SSL VPN access gateways.

Juniper’s SMB data center network solution offers the most attractive cost/value proposition in the marketplace today, and it is ideally suited for organizations striving to grow their business without compromising short and midterm profit objectives. The SMB data center solution is built on the foundation of Juniper Networks® Junos® operating system running throughout the infrastructure. Junos OS significantly lowers the overall OpEx related to the maintenance of network infrastructure as well as the support of emerging business applications. Juniper’s solution takes into account the common option of having the data center interconnected to the workforce population with a common switching and routing infrastructure (Figure 1).

Implementing Juniper's SMB data center solution, organizations will be able to support the latest available application infrastructures. The solution offers support for remote Virtual Desktop Interface (VDI) connectivity using Juniper Networks SA Series SSL VPN Appliances, support for VMware vSphere applications over the LAN, support for service-oriented architecture (SOA)-based applications residing in the data center, and support for identity federation by use of the SAML protocol. Additionally, this solution offers a spanning-tree free topology with full uplink utilization using Virtual Chassis technology at the network core.

In addition, the network layout offers a U shape uplink connectivity scheme that enables full utilization with active/active uplinks. We propose using a single Link Aggregation Group (LAG) with four members from each access switch connected to a Virtual Chassis. This topology can serve the entire data center, scaling up to 480

servers using only a pair of Juniper Networks EX4200 Ethernet Switch appliances, and it can still accommodate connectivity to the campus network. If server access link redundancy is desired, or further scaling requirements are present, this solution can linearly scale up to 10 EX4200 Virtual Chassis members at the core.

Due to the advanced L3 functionality offered by this Virtual Chassis-based solution, network administrators can manage the network from a single management interface. In the topology that we propose, the Virtual Chassis is connected to a Juniper Networks SRX650 Services Gateway cluster protecting the corporate network perimeter. Typically in an SMB scenario, the WAN edge device is service provider owned customer premises equipment (CPE), such that organizations do not have the liberty of choosing a specific product. The SRX650 competently fills the bridge between the CPE device and the LAN L3 switch. (See the illustrations that follow for more details.)

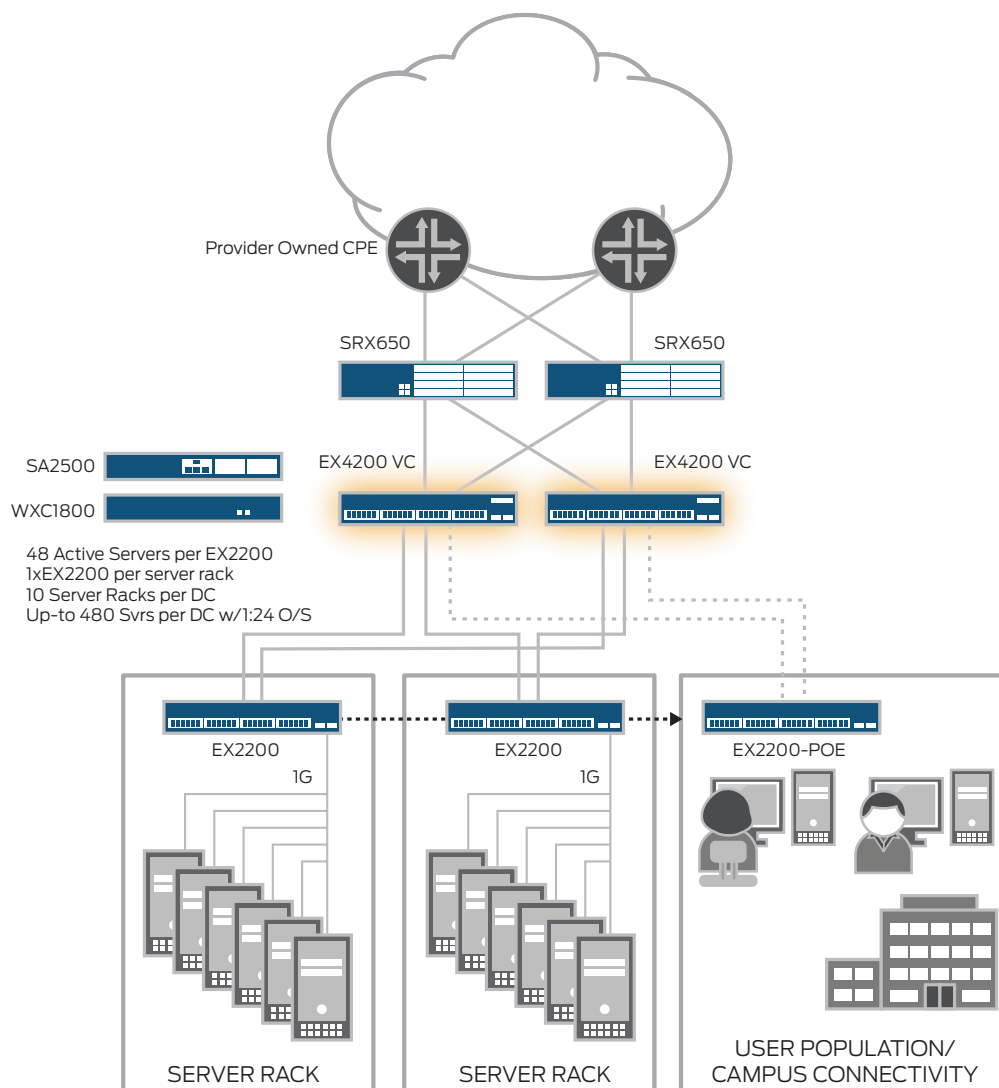


Figure 1: Juniper's SMB data center network

## Features and Benefits

- Juniper's SMB data center can connect over 480 single homed 1GbE servers.
- The solution supports up to 7 Gbps stateful firewall performance and 900 Mbps intrusion prevention system (IPS) performance on the SRX650.
- Up to 100 SSL VPN accelerated and secured user sessions are available using the Juniper Networks SA2500 SSL VPN Appliance, Juniper Networks Junos Pulse, and Juniper Networks WXC1800 Application Acceleration Platform.
- Junos OS provides full automation on Juniper Networks EX Series Ethernet Switches and SRX Series Services Gateways.
- Solution is hybrid cloud-ready (SAML support) with the SA2500 platform.
- There are no more than 1:24 uplink oversubscriptions with the EX4200 Virtual Chassis-based core.

## Solution Components

SOFTWARE PRODUCTS	HARDWARE PRODUCTS	SERVICE AND SUPPORT OFFERINGS
Ethernet Design Junos Pulse	EX4200 line (network core) EX2200 line (server access) SRX Series for security services • AppSecure • AppTrack SA Series WXC Series	<ul style="list-style-type: none"> <li>• Operate Specialist Partner or OEM-offered Juniper support</li> <li>• Break-fix (optional service-level agreements)</li> <li>• E-support (entitled)</li> <li>• Service Now (entitled)</li> <li>• Phone support (partner supplied)</li> <li>• Implement Specialist Partners</li> <li>• Installation and setup</li> <li>• Fast Track Educational Services Certifications</li> </ul>

## Summary

Juniper Networks offers a unique data center network solution for small and midsize businesses. Juniper's SMB data center network infrastructure offers superior performance and functionality at very attractive price points, allowing SMB businesses to benefit from the latest technology without the typically high price tag associated with that.

## Next Steps

For more information regarding Juniper Networks Data Center Solutions, check out the following URL: [www.juniper.net/datacenter](http://www.juniper.net/datacenter), and contact your local Juniper partner.

To find a Juniper partner in your area, please see the following list of resources:

[www.juniper.net/us/en/partners/locator](http://www.juniper.net/us/en/partners/locator).

For more information about Juniper Networks SRX Series Services Gateways, please see:

[www.juniper.net/us/en/products-services/security/srx-series](http://www.juniper.net/us/en/products-services/security/srx-series).

For more information about Juniper Networks EX Series Ethernet Switches, please see:

[www.juniper.net/us/en/products-services/switching/ex-series](http://www.juniper.net/us/en/products-services/switching/ex-series).

For more information on Juniper services please see:

[www.juniper.net/us/en/products-services](http://www.juniper.net/us/en/products-services).

## About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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