

## The Cloud – Ready Data Center Network

### Cloud-Ready Data Center Solution Overview

CIOs are looking for ways to achieve greater IT efficiencies and agility to meet their requirements for an improved user experience and lower costs. Cloud computing represents a new way of meeting these goals by delivering services on a dynamic and shared IT infrastructure. Previously, applications were linked to hardware that was specifically designated for compute and storage. With cloud computing, the functionality of these same software and hardware products is delivered in a more scalable fashion as services over a network. CIOs are looking to apply the lessons of the cloud to their own IT departments to optimize results. However, they are limited because, as application architectures, server virtualization, and storage technology have evolved over time, innovation in the network has not kept pace. Because networks are the foundation of a cloud-ready data center, businesses need a new network to unleash the promise of the cloud.

### Getting Ready

Success in building a cloud-ready data center network requires three steps: **(1) simplify, (2) share, (3) secure**. It is also important to **automate at each step**. Whether you are running your internal IT infrastructure to be cloud-like or plan to connect with public cloud services, designing a cloud-ready data center network involves removing the restrictions related to where you place your resources. This gives you significant operational advantages that can help you lower costs, increase efficiency, and keep your data center agile enough to accommodate any changes in your business or your technology infrastructure.

### SIMPLIFY

#### The Challenge

Server virtualization, storage and I/O convergence, and application architectures are taking off in the data center, and the demands on the network are greater than ever. Furthermore, complexity, cost, and risk, increase exponentially as businesses struggle to keep up with these requirements by adding more devices to the network. Applying the principles of cloud computing and fundamentally simplifying the network with a fabric can help enterprises overcome these obstacles.

#### The Solution

Juniper's "3-2-1" data center network architecture collapses multiple switching tiers, leading to a new simplified data center architecture design that requires fewer devices and interconnections. Security services are integrated into the fabric, dynamically uncovering blind spots in order to protect both virtual and physical resources. Advanced routing capabilities enhance application performance and agility.

#### The Benefits

Juniper Networks helps enterprises simplify their data center network architecture by collapsing it into two tiers with Virtual Chassis fabric technology, and finally, to one tier with QFabric. By leveraging a common operating system, an open network automation platform, and an industry-leading product and services portfolio, we help to reduce the total cost of ownership and provide performance, scale, and agility.



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### SHARE

#### The Challenge

The cloud-ready data center requires network resources to be shared across different user groups at scale, while still maintaining granular policies that control security and performance. That means the network needs to support resources that are allocated, expanded, and re-allocated efficiently at scale.

#### The Solution

The Juniper Networks approach to sharing the network revolves around aligning capacities, bandwidth, priorities, and availability goals, with application requirements by using technologies based on standards and simplified network architectures. For example, Virtual Chassis technology, allows multiple devices to be interconnected and behave as a single device.

That gives customers unmatched scale and agility across all of the routing, switching, and security platforms, in processing ACLs, or “policy filters” that forward traffic according to rules designed for designated types at line rate and at all packet sizes. Juniper’s security services and policies nest VLANs within logical zones for security segmentation. With MPLS network virtualization and VPLS technologies, VPNs can be used to extend those zones, and VLANs can be stretched across data centers or pods for more flexible shared links to the cloud.

#### The Benefits

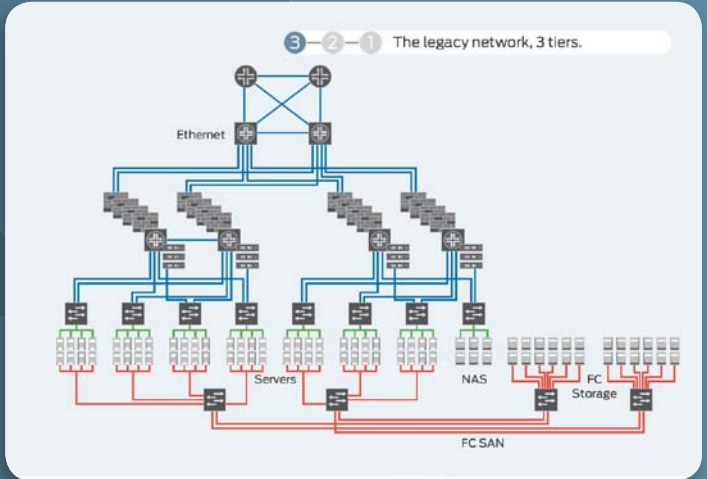
Juniper’s data center architecture delivers the agility and scaling required by virtualizing network configurations, segmenting services into logical domains, and using industry-leading hardware designs to scale without complexity. With a large pool of resources to draw on, customers can efficiently partition those resources to meet service requirements and remain elastic while ensuring performance, security, and controls. Leveraging the Junos operating system with an open network automation platform and a rich set of support services helps to minimize risk and speed time to deployment for an agile, secure cloud-ready data center network.

### SECURE

#### The Challenge

Today’s data center security administrator must not only secure traffic flows between physical elements on the network, but also secure increased traffic between virtual elements, such as between virtual machines within a single physical server. To address this “blind spot” as well as to address the increased access and sophistication of security threats in a cloud-ready data center, businesses must expand their security protection capabilities. Appropriate data center security policies affect service availability of business-critical applications as well as operations.

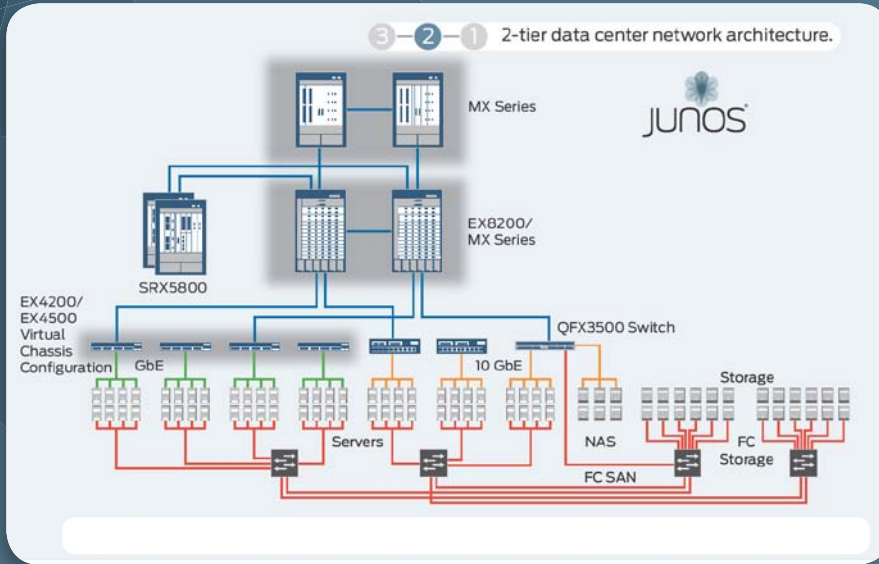
To complement the simplification and sharing of the cloud-ready data center, the data center security services also should be consolidated and virtualized. This approach enhances the flexibility and efficiency for the entire data center security solution.



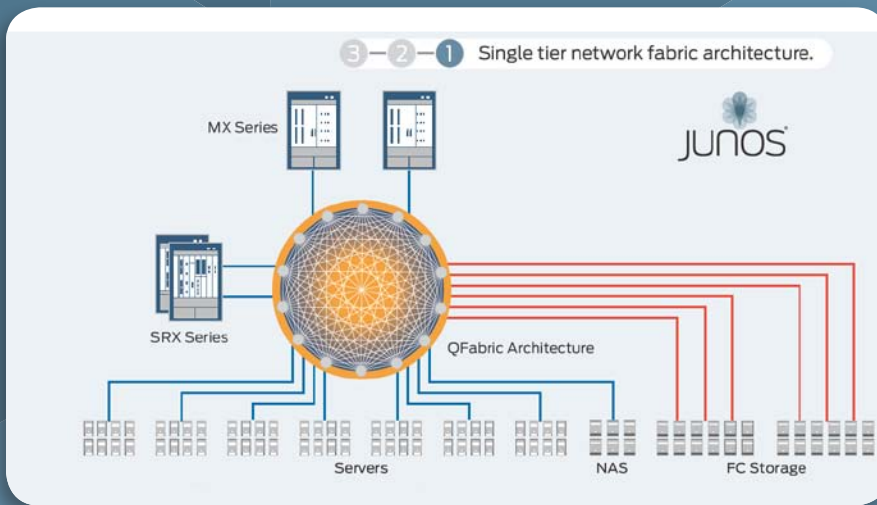
**FIGURE 1:**  
The legacy network



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**FIGURE 2:**  
Juniper delivers a simplified two tier network today with Virtual Chassis fabric technology



**FIGURE 3:**  
The ultimate simplification of the data center is a single fabric that provides any-to-any connectivity

### The Solution

Juniper Networks has developed a data center security solution that spans the physical and virtual network that is agile and adaptive to change, and is an integral part of the next-generation data center network fabric. Juniper delivers a rich set of security services that not only meets today’s security and performance requirements, but also addresses future on-demand growth. Data center security services such as application-aware denial of service, stateful firewall, and intrusion detection and prevention systems are consolidated on a security platform and can be enforced on the physical network, or even on the VM hypervisor itself, providing the flexibility required to dynamically assign resources to the services.

### The Benefits

Leveraging a common operating system with an open network automation platform and a rich set of support services help to minimize risk and speed time to implementation when configuring security solutions for the cloud-ready data center.

FOR FURTHER INFORMATION VISIT OUR WEBSITE OR FEEL FREE TO CONTACT US:

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## The Cloud – Ready Data Center Network

### AUTOMATE

#### The Challenge

Current data center network automation solutions are implemented as point products optimized for specific tasks - configuration, provisioning, diagnostics, management - and are not designed to work together. They have different operator interfaces and navigation schemes, lack user-based automation, and are difficult to use. As a result, network operators are faced with extensive training for disparate applications, manually intensive error-prone cycle times, and limited visibility of the organization-wide network.

#### The Solution

Juniper Networks' comprehensive software and services for network automation help reduce complexity, increase operational efficiencies, and scale the infrastructure in response to business dynamics.

The Junos Space network application platform was designed to provide end-to-end visibility and control of the network to enable network resources to be orchestrated in response to business needs. Network operators can significantly simplify the full network life cycle, including configuration provisioning and troubleshooting, and increase network operations accuracy using user-specific workflows and Juniper best practice.

#### The Benefits

Junos Space includes a core set of collaborative applications from Juniper Networks and third parties that help network managers improve operational efficiencies, rapidly scale their network infrastructure, and increase the reliability and agility of their network. Junos Space applications share common services to enable resource, security, and performance optimization. Junos Space's easy-to-use Web 2.0 user interface allows data center operators to complete their tasks quickly, easily, and accurately, and also:

- Reduce operational costs by automating manual, repetitive, and error-prone tasks.
- Improve user network productivity with rapid end point connectivity and dynamic scaling of application infrastructure.
- Simplify operations for managing virtual and physical network infrastructures.
- Maximize data center network security by policy abstractions and sophisticated correlation capabilities for proactive and accurate threat detection.
- Reduce mean time to repair (MTTR) by automating event and incident management.
- Rapidly establish secure connections between remote sites with automated MPLS service configuration and activation software.



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## I>>> OTHER NEWS

GCC Computers proudly announces that it has been honored by JUNIPER NETWORKS with the highest distinctions of both ELITE Juniper Partner for Advanced Networks Infrastructure and ELITE Juniper Partner for Networks Infrastructure.

By being named "ELITE Networks Infrastructure Partner" and ELITE Juniper Partner for Advanced Networks Infrastructure, GCC Computers is acknowledged by Juniper that it has the knowledge and the expertise to provide solutions associated with deploying, securing and maintaining high performance enterprise networks as well as mission-critical networks for Service Providers.

GCC is the only Elite partner in Cyprus, Greece & Malta.

Elite Partnership is the highest level of Juniper reseller.

GCC was awarded Elite status in November 2011, after two and a half years of investing in people, Juniper trainings and technologies.

GCC currently employs a large number of certified engineers specializing on Juniper solutions, who can demonstrate or provide PoC on Juniper's solutions in the company's lab.

## I>>> NEXT ISSUE

**GCC Computers Ltd is introducing: Flatten Your Data Center Architecture by Juniper Networks.**

FOR FURTHER INFORMATION VISIT OUR WEBSITE OR FEEL FREE TO CONTACT US:

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