Modernize and Simplify Federal Agency Campus Networks

Improve performance, simplify network management, and lower costs with Juniper Networks EX Series Ethernet Switches with Virtual Chassis technology

Challenge

Modernize networks to meet mission objectives, lower costs, and support today's on-premises and cloud applications

Solution

Virtual Chassis technology on EX Series Ethernet Switches enables Federal IT to simplify its network operations, lower cost, and scale operations to meet mission objectives

Benefits

- Pay-as-you-grow scalability
- Support for voice and other demanding applications
- Simplified network operations
- Nonstop operations to support mission objectives
- Consistent platform for switching, routing, and security
- Broad portfolio of access switches
- Authorized, trusted supply chain

The network is critical to mission success, but many U.S. federal agencies rely on campus networks that are more than a decade old. Aging networks make it difficult to support anywhere, anytime access to information and meet the need for unified communications, videoconferencing, and big data analytics. And, without a speedy connection, cloud apps are slowed.

The Challenge

The complexity of maintaining outdated networks is preventing federal IT organizations from easily and cost-effectively delivering the network bandwidth needed to support today's applications and missions. Most campus access networks are constrained by the same inefficiencies that plague legacy, three-tier data center networks. As the network grows, the sheer number of devices that have to be managed grows exponentially, increasing capital expenses and draining operational resources.

Federal IT organizations limit their flexibility to move toward automation and SDN when they implement proprietary networking gear. The operational burden of keeping legacy networks running puts even more pressure on already strained IT budgets.

The Solution: Modernize Your Campus Network

Network modernization is a springboard for better decision making, more efficient use of resources, technology innovation, and significant cost reductions. While many federal agencies have modernized their data center networks, they have not yet extended the benefits of high-performance, highly reliable networking directly to their end users.

Many federal IT organizations are turning to Juniper Networks® EX Series Ethernet Switches with Virtual Chassis technology to make their campus networks faster, more reliable, and easier to maintain. Multiple EX Series switches can be seamlessly interconnected and managed as a single device. With this pay-as-you-grow approach, campus networking is easier to manage and scale.

With Juniper switching, customers have seen a 30 percent savings in TCO and 51 percent savings in maintenance, compared to competitive solutions.

Count up the Savings

EX Series Ethernet Switches deliver

- 30% in TCO savings
- 51% in maintenance savings
- 72% in rack space savings

... when compared to competitive switches.

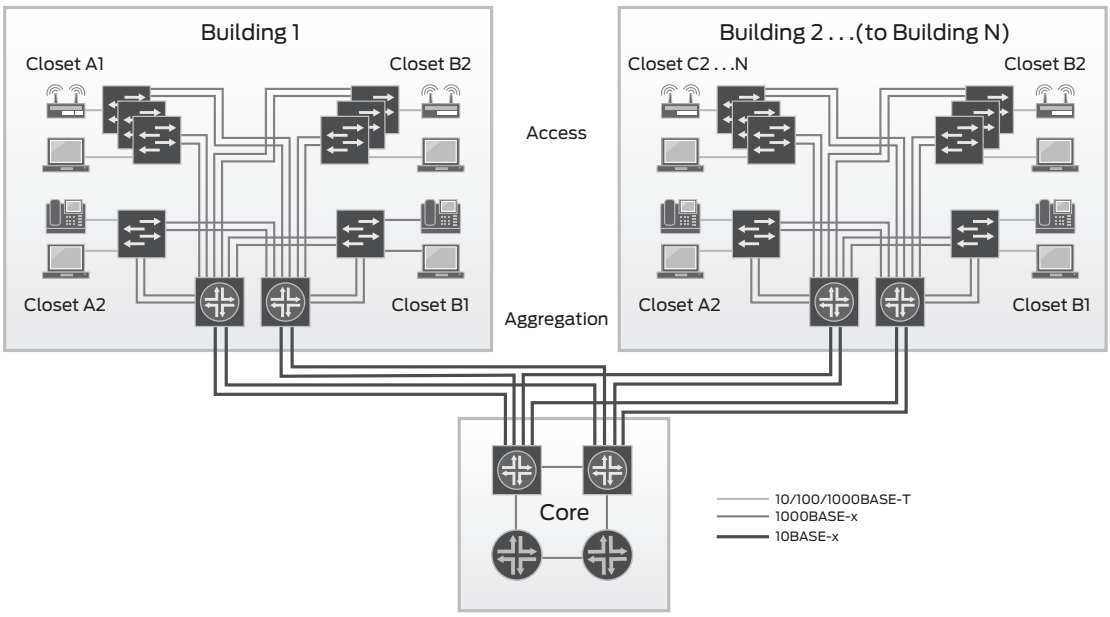

Figure 1: Many federal access networks are built in three layers, which limits growth and increases complexity as the need for network capacity grows.

Deploying EX Series Ethernet Switches with Virtual Chassis technology for federal campus networks delivers:

- **Pay-as-you-grow scalability:** With Juniper Virtual Chassis technology, agencies gain the flexibility of a stackable switch with the performance and reliability of a modular system. As requirements grow, multiple EX Series switches can be seamlessly interconnected to easily add more bandwidth as needed. In campus wiring closets, flexible topologies can be created to extend the Virtual Chassis configuration across long distances spanning multiple wiring closets, floors, or even buildings while using 10GbE or 40GbE for uplink connectivity. Up to 10 EX4300 and EX3300 Ethernet Switches can be configured in a single Virtual Chassis, as can up to four EX2200 Ethernet Switches.
- **Support for voice and other demanding applications:** federal IT can deliver a better experience for bandwidth-hungry and latency-sensitive applications, including unified communications and videoconferencing. EX Series switches support rich quality of service functionality for prioritizing data, voice, and video traffic.
- **Lower cost of network operations:** Administrators can manage an entire Virtual Chassis configuration—up to 10 switches as a single switch—even across different wiring closets and floors. This significantly simplifies operations and eliminates the need to manage multiple switches individually. Federal agencies deploying EX Series with Virtual Chassis technology have experienced a 10:1 savings over legacy architectures.
- **Nonstop operations to support mission-critical applications:** Virtual Chassis technology enables agencies to achieve 99.9999 percent network availability, which is essential to meet mission objectives. If a network link goes down, connectivity remains uninterrupted and manual intervention is not required. The combination of nonstop software upgrade (NSSU) and Virtual Router Redundancy Protocol (VRRP) enables nonstop operations.
- **Consistent platform for switching, routing, and security:** EX Series switches run Juniper Networks Junos® operating system, simplifying administration and maintenance. In addition to Layer 2 functionality, EX Series switches support a full complement of Layer 3 routing protocols, including BGP, MPLS, OSPF, VRRP, and many others. Media Access Control Security (MACsec) can be used to support link-layer data confidentiality, data integrity, and data origin authentication.
- **Simplified maintenance:** With Juniper, a lifetime warranty is included in the switch purchase. Agencies can eliminate the high cost of additional technical support and service packages from competitive switching vendors.
- **Ability to choose the best fit for the mission:** Juniper offers a broad choice of access switches, many with Power over Ethernet (PoE) to support IP phones, wireless access points, and other PoE-powered devices. The EX4300 supports branch, campus, and data center access and aggregation. The EX2200 is an economical, low power, low acoustic 1 U device for branches and campuses. The compact EX3300 is ideal for demanding converged enterprise access.
- **Authorized, trusted supply chain:** Juniper equipment and software is manufactured and tested in secure locations and supported by an authorized, trusted supply chain. Juniper is compliant with the Trade Act Agreement.

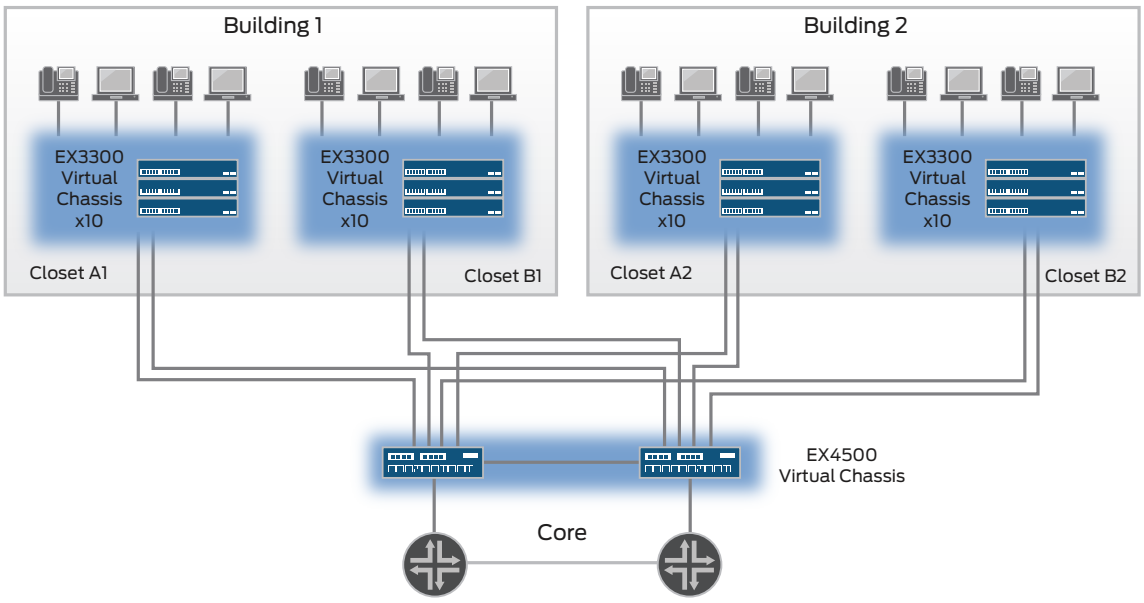

Figure 2: Using EX Series Ethernet Switches with Virtual Chassis technology reduces the number of devices needed in the access layer and simplifies network operations.

Summary

Federal agencies can leverage EX Series Ethernet Switches with Virtual Chassis technology to enable a high-performance, highly reliable, and agile campus network. With Juniper Networks, agencies can support today's unified communications, cloud, big data, and other demanding applications with a scalable infrastructure, while significantly lowering the cost of network operations.

Next Steps

Learn more about Juniper solutions for U.S. federal agencies at http://www.juniper.net/us/en/solutions/federal-government/.

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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