JUNIPER DATA CENTER BUILDING BLOCKS

Modernized data centers that can scale and adapt as needed

Challenges

Many organizations are unable to grow and innovate because of difficulties in making changes to their IT infrastructure. Infrastructure shouldn't limit your ability to compete. The Juniper building blocks solution empowers change by enabling and accelerating an automated and scalable data center.

Solution

Building blocks are Juniper-validated network blueprints combining Juniper data center switches with the Juniper Apstra. Building blocks are repeatable, scalable designs that are based on Juniper best practices, and they include a detailed deployment guide.

Benefits

- *Supports a scalable data center fabric design that meets the needs of the majority of data center customers*
- *Scales up to 1624 high availability (HA) ports*
- *Drastically reduces the time to deliver network infrastructure services and implement network change*

Keep up with the new requirements of your business for agile delivery of applications and digital services. Turnkey and validated building blocks help modernize data center architectures and automate everyday operations for a reliable and scalable network fabric.

What are Juniper data center building blocks?

Juniper data center building blocks are a turnkey solution that make it easier for network operations teams to build and modernize the data center. IT teams can use these validated sets of discrete units, or building blocks, to create a customized data center. With these building blocks, design decisions boil down to "What are my desired business outcomes?" and "What are my capacity requirements?", providing proven configurations for fast deployment and seamless growth.

Building Block Styles

Data Center Core

- Juniper® Apstra
- Juniper Network® QFX Series Switches
  - 2 spines (QFX5210-64C-AFO2)
  - 2 leafs (QFX5120-48Y-AFO2)
  - 2 border leafs (QFX10002-36Q)

Data Center Leaf

- Juniper Apstra
- 4 QFX Series leafs (QFX5210-64C-AFO2)

Border Security

- 2 Next-Generation Firewalls
- Advanced Security License

The Challenge

Today's data center networking architecture and operations teams face four main challenges: design, reliable change, extensibility, and scalability. These make building, deploying, operating, managing, and troubleshooting the data center network difficult and expensive.

Juniper's data center building blocks simplify the process by combining Juniper data center switches and Juniper Apstra with options for security. These building blocks help customers build and maintain automated data centers that can scale and adapt as needed.
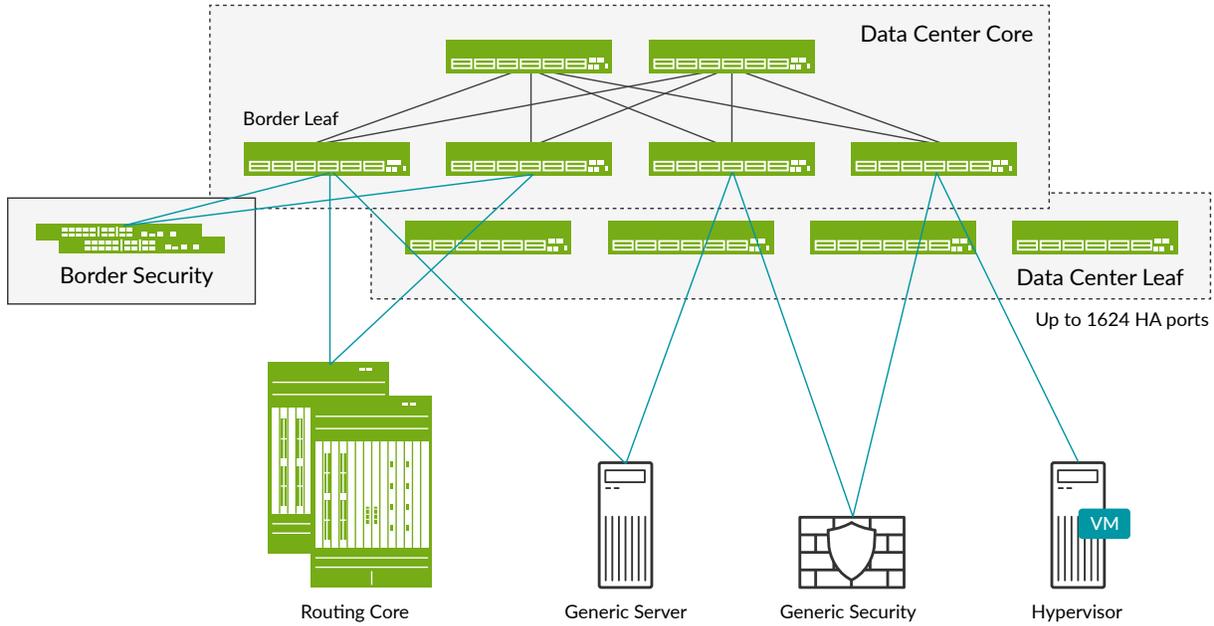
Figure 1: Building blocks help create repeatable, scalable data center designs by combining Juniper data center switches with Apstra fabric management software.

The Juniper Networks Data Center Building Block Solutions

New turnkey building block solutions combine intent-based networking, industry-leading switches, and secure services gateways in proven configurations for fast deployment and seamless data center network growth. Customers can deploy proven, intent-based building blocks and drop in zero-touch fabric modules that seamlessly scale from 4-switch to 54-switch deployments.

These solutions enable small and medium-sized organizations to adopt the most modern approach to data center operations without undertaking expansive design projects or lengthy deployment programs.

Features and Benefits

The scalable, optimized building block architecture lets customers confidently deploy what they need for today's data center, with the flexibility to scale up to 1624 HA server ports in the future. The interlinking set of networking and security building blocks can scale over time and support new networking systems to meet a diverse set of bare-metal, virtual machine, container, and IP storage connectivity needs.

With Apstra managing the building blocks, new data centers can be deployed within hours—not days—using zero-touch provisioning (ZTP) and a set of pre-validated blueprints. Apstra even provides an auto-generated cabling plan to ensure that everything is connected properly.

Solution Components

- Juniper Networks QFX Series Switches build a strong underlay foundation for flexible and high-performance fabrics.

- Juniper Apstra automates and validates both the data center network's architecture and its operations, helping to eliminate complexity, vulnerability, and outages.

- Juniper Networks SRX Series Services Gateways support fast, secure, and highly available data center and enterprise edge operations, with unmatched performance and scalability.

Summary—Get an Automated Data Center Today with Building Blocks from Juniper

Juniper building blocks let data centers grow and innovate with an automated, intent-based, scalable fabric architecture that drastically reduces the time to implement network change. Customers can confidently deploy what they need today, while providing the flexibility to scale as business requirements change. The solution lets the network adapt regardless of the resource—bare metal, virtual machine, container, storage, and security services connectivity needs are all covered.

Next Steps

To learn more about Juniper Apstra and building block solutions, please contact your account rep. You can also explore these innovations in Juniper vLabs (**vlabs.juniper.net**), which provides free access to prebuilt virtual topologies to test these and other data center configurations.

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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