Streamlining Data Center Network Deployments with Juniper Validated Designs

Discover how Juniper Validated Designs (JVDs) for the data center can help you design and deploy an optimal networking solution

Explore data center JVDs →

Deploy more quickly and confidently, improve outcomes, and save valuable time

The challenge

Navigating the complex landscape of data center deployments

Businesses need fast and reliable on-premises data center networks that perform like the cloud—supporting both traditional application storage and AI workloads. However, as operations grow more complex and automation becomes critical, companies face challenges managing diverse platforms efficiently, shortening timelines, ensuring scalable growth, avoiding vendor lock-in, reducing operational costs, and maintaining secure, high-performance infrastructure—all amid a persistent shortage of skilled IT professionals.

The capabilities you need

Fully tested, well-documented data center network designs

Organizations are adopting modern, automated data centers for greater network agility, visibility, and reliability. JVDs for the data center describe standards-based network fabrics and intent-based automation to assure the simplified design, deployment, and operation of a resilient data center network.

JVDs are comprehensive, end-to-end blueprints for deploying Juniper solutions in your network

Scalability

Validated designs are built out based on customer input and requirements and are tailored to meet specific common use cases at maximum scale.

Reliability

Because JVDs are prescriptive designs used by multiple customers across various industries, all JVD customers benefit from lessons learned through lab testing and real-world deployments.

Velocity

JVDs have clearly defined performance profiles to help you make informed decisions about your network, resulting in up to 9x faster deployments.

Predictability

JVDs undergo a rigorous testing framework to achieve validation with ongoing, automated verification in each new release.

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JVDs for the data center

JVDs for the data center offer a transformative approach to data center network design, deployment, and operation by addressing the challenges you face while delivering substantial business value and lower risk.

Current JVDs for the data center:

AI Data Center Network with Juniper Apstra, NVIDIA GPUs, and WEKA Storage

Achieve fast innovation, flexibility, and optimized AI fabric networks.

Juniper Scale-Out Stateful Firewall and Source NAT for Enterprise

Boost MX platforms with scalable architecture and service flexibility.

Collapsed Data Center Fabric with Juniper Apstra

Simplify configuration and management for faster and more efficient networking.

3-Stage Data Center Design with Juniper Apstra

Explore validated design for efficient data center fabric management.

Data Center Next-Generation Firewall Use Case

Safeguard your data center with proven security features.

Enterprise Data Center Edge
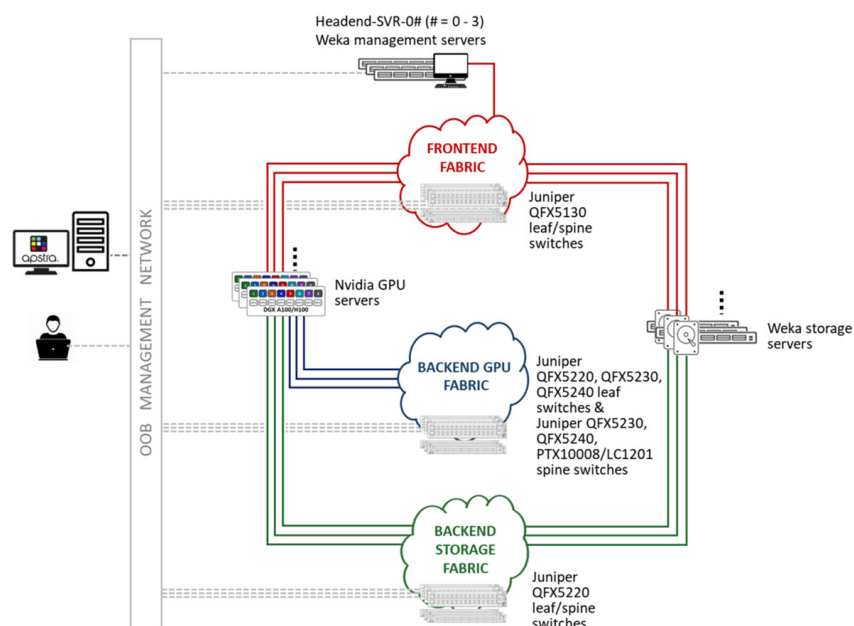
Support seamless interconnect of EVPN-MPLS with EVPN-VXLAN.

The transformative power of data center JVDs

JVDs offer a robust solution to the challenges of data center design and deployment, providing a clear pathway to enhanced operational efficiency, strategic alignment, and secure platforms.

AI data center network design:

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3-stage architecture: lean spines, server leaf switches, and DCI capable border leaf switches:
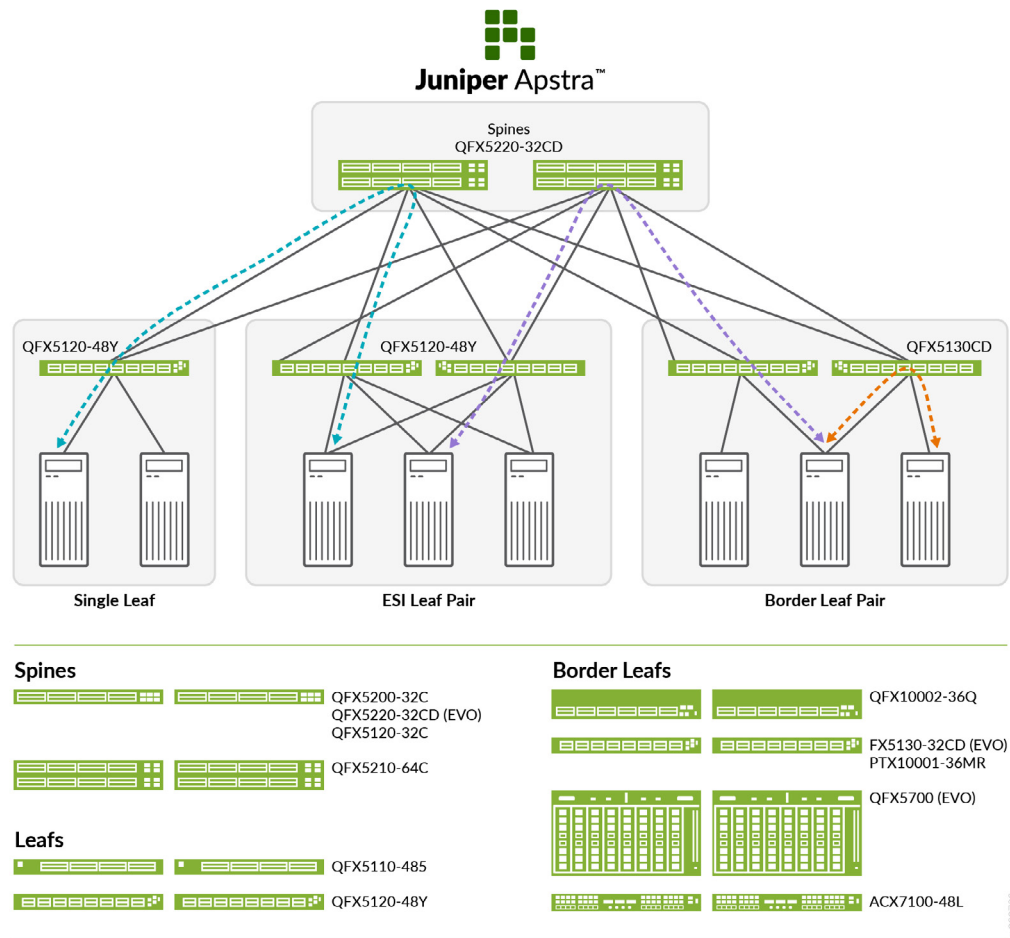
Technologies and solutions used and tested:

Juniper Apstra	DCQCN (inc. PFC and ECN)	eBGPDSCP / PCP
RoCEv2	Clos	Juniper QFX / ACX / PTX / SRX / vSRX / MX
WEKA storage	ECMP (Equal Cost Multiple Path)	
NVIDIA GPUs		And many more...
EVPN/VXLAN	DLB (Dynamic Load Balancing)	

Core capabilities

JVDs minimize operational costs while **reducing your IT burden and accelerating time to value**

Accelerated deployments	JVDs streamline the implementation process, enabling organizations to deploy solutions rapidly, reducing time to market and enhancing competitive advantage.
Reduced risk of errors	With pre-tested blueprints created by expert engineers, JVDs minimize the likelihood of costly mistakes and challenges during design and deployment, ensuring reliability from the outset.
Enhanced flexibility	By leveraging a multivendor approach, data center JVDs empower organizations to choose best-of-breed technologies that align with their specific requirements, avoiding vendor lock-in.
Cost optimization	JVDs can substantially reduce operational costs by optimizing resource utilization and minimizing downtime through efficient management practices.
Scalability and future proofing	Designed with scalability in mind, JVDs facilitate seamless expansion as business needs evolve, ensuring that infrastructures remain agile and responsive.
Integrated security solutions	Incorporating next-generation security features within the design framework helps safeguard critical assets while maintaining the highest performance across the network.

Our advantage

JVDs: faster, smarter, more secure

The JVD program develops solutions that reduce complexity for networking teams, helping them:

- **Qualify solutions faster** with tested architectures for building networks with well-documented capabilities and product/software release guidance

- **Reduce risk** with products, features, and topologies based on best practices and common use cases

- **Achieve predictable, repeatable results** with designs that have been validated at scale to ensure you will have faster, more reliable deployments

Why Juniper

The NOW Way to Network

Juniper Networks believes that connectivity is not the same as experiencing a great connection. Juniper's AI-Native Networking Platform is built from the ground up to leverage AI to deliver exceptional, highly secure, and sustainable user experiences from the edge to the data center and cloud. Additional information can be found at Juniper Networks (www.juniper.net) or connect with Juniper on X (Twitter), LinkedIn, and Facebook.

More information

Learn more about JVDs for data center

To explore current JVDs for the data center, visit https://www.juniper.net/documentation/validated-designs/us/en/data-center

Take the next step

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Learn how we can build what's next.

Contact us →

Explore solutions

Discover more about JVDs.

Explore solutions →

Read case studies

See how we help unlock growth.

Customer success →

More insights

Design and deploy optimal solutions.

Discover more →

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