

Juniper Validated Design for an Enterprise Data Center Edge

Interconnect data centers, campus, and branch locations easily

Ready to dive in? Get the details on this JVD in our documentation center.

[See the JVD →](#)

The challenge

Interconnecting data centers and branches

Connectivity between multiple data centers and end user locations needs to be high performing and always available. But WANs and data center networks use different protocol stacks to provide Layer 2 (L2) connectivity, which makes implementation and maintenance challenging.

The capabilities you need

The Juniper difference

The enterprise data center edge Juniper Validated Design (JVD) seamlessly interconnects data centers, campus, and branch locations over an MPLS-based WAN.

- **Higher throughput and greater efficiency**

Data can be transmitted to or received at multiple endpoints over multiple connections.

- **Seamless EVPN-VXLAN to EVPN-MPLS stitching**

Using MX480 and MX10003 Universal Edge routers as data center edge/gateway devices

- **Straightforward to implement**

Proven high performance design is ideal for distributed enterprises: well-illustrated and easy to duplicate

The solution

JVD for an enterprise data center edge

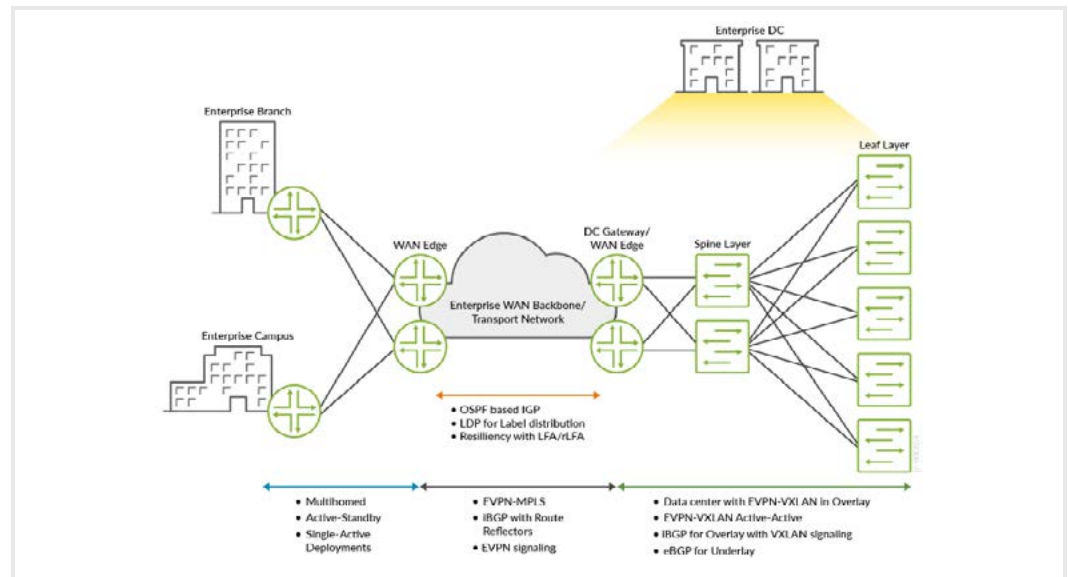
The Enterprise Data Center Edge JVD solution seamlessly interconnects data centers, campus, and branch locations over an MPLS-based WAN. The JVD also validates the seamless interconnection of Ethernet VPN Multiprotocol Label Switching (EVPN-MPLS) with Ethernet VPN-Virtual Extensible LAN (EVPN-VXLAN).

How it works

Enterprise WAN and data center edge design

External BGP (eBGP) is the EVPN-VXLAN signaling protocol within the data center. In the WAN, EVPN-MPLS services connect remote campus and branch offices to the data center. Seamless interconnection of these two services happens on the data center edge/gateway devices.

Note that the Enterprise Data Center Edge JVD uses MX480 and MX10003 Universal Edge routers as data center edge/gateway devices because they can perform seamless EVPN-VXLAN to EVPN-MPLS stitching.



Core capabilities

| | |
|--------------|---|
| Routing | OSPF routing between the data center gateways and the WAN edges |
| LDP | The MPLS Label Distribution Protocol (LDP) to exchange label mapping across locations |
| Internet BGP | Internal BGP (iBGP) between provider edge and route reflectors in the WAN to provide simplicity and performance |
| EVPN-MPLS | EVPN-MPLS to enable connection of dispersed customer sites using a simple (Layer 2) virtual bridge |
| LFA/rFLA | Loop-Free Alternates (LFA)/Remote LFA (rLFA) to provide high availability by allowing neighbors to be used as backup next hops in case of primary next hop failures causing loops |

Our advantage

The Juniper Validated Design program

The JVD program develops solutions that reduce complexity for networking teams. JVDs help networking teams

- 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

Solutions for enterprise edge

To learn more about MX Series Universal Routing Platforms, visit <https://www.juniper.net/us/en/products/routers/mx-series.html>

What is EVPN-VXLAN? <https://www.juniper.net/us/en/research-topics/what-is-evpn-vxlan.html>

For technical data sheets, guides and documentation, visit <https://www.juniper.net/documentation/us/en/software/jvd/jvd-ewan-evpn-gw-01-01/index.html>

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