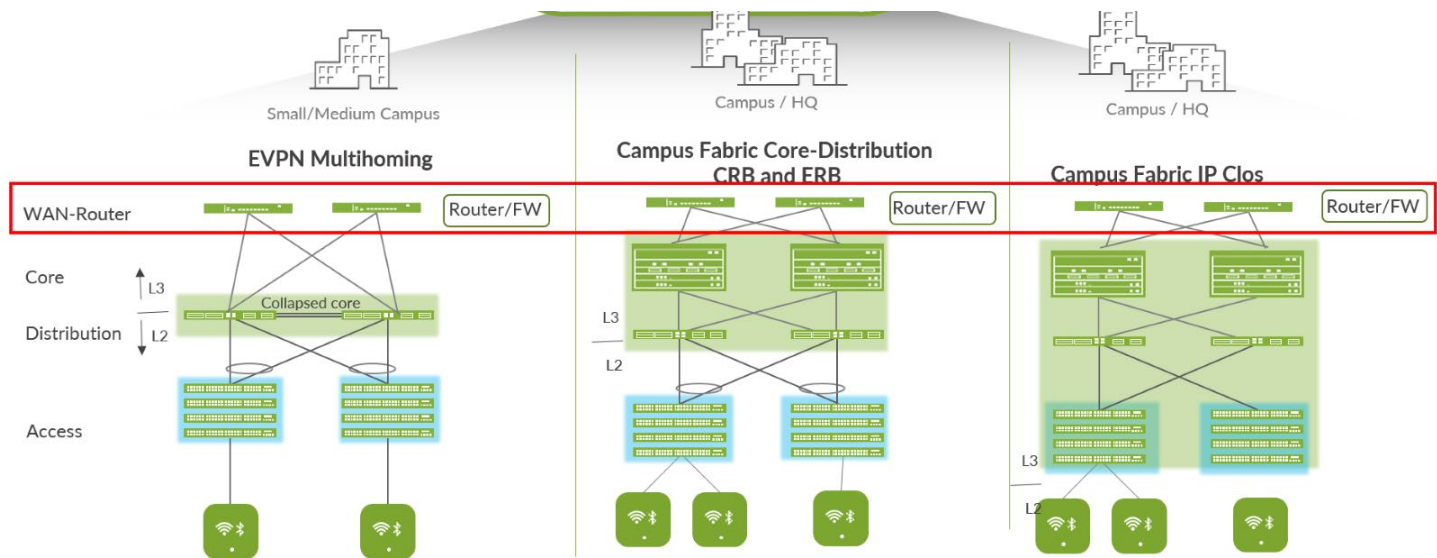


Juniper® Validated Design

JVD Solution Overview: Campus Fabric WAN Router Integration

Executive Summary

When you design any EVPN fabric, the integration of the WAN routers is a mandatory step. This does not change even when leveraging the speed and ease of Juniper Mist to build and manage the campus fabric. After building the campus fabric in the Mist GUI, you must still integrate the WAN routers that the fabric uses.



By design, the WAN router can be an MX Series router or an SRX Series Firewall from Juniper Networks, but it can also be a router or firewall from a third-party vendor. This Juniper Validated Design Extension (JVDE) describes the various methods of WAN router integration and the test cases that were performed to ensure proper integration. We also provide a list of required features that third-party WAN router vendors must support for integration. Furthermore, complete configuration examples showing the Mist GUI and the resulting configuration on a Juniper MX Series are provided in the appendix section for reference.

Solution Overview

In a campus fabric, the integration point for WAN routers is called a service-block function. A service-block function is located at the top of the fabric and is either:

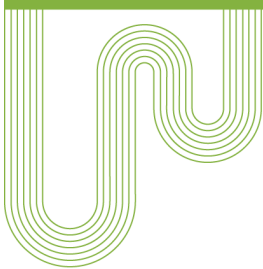
- A dedicated pair of physical switches (recommended).
- Co-located on the core switches of the fabric as a virtual function.

Using the service-block function, you can attach the WAN routers to the fabric which provides the ability to:

- Allow Internet traffic of any wired/wireless client of the fabric.
- Allow and control traffic between different virtual routing and forwarding (VRF) instances of the fabric since the VRFs are isolated inside the fabric itself.

There are various methods that you can leverage to forward traffic between the two:

- Layer 2 (L2) attachment between fabric and WAN router:
 - Bridged overlay—The entire fabric acts as a L2 switch and all gateway and L3 forwarding functions are located on the external WAN router.
 - Stretched VLAN—One access VLAN of each VRF is also used to attach the WAN router to the fabric and forward traffic to it.
 - Transport VLAN—None of the defined VLAN's in the access layer of the fabric is used towards WAN router. Each VRF gets its own unique transport VLAN for communication with the WAN router then configured at the service-block function.
- Layer 3 (L3) attachment between fabric and WAN router:
 - Establish an L3 point-to-point (P2P) link for each VRF to the WAN router and use OSPF to exchange routes.
 - Establish an L3 P2P link for each VRF to the WAN router and use external BGP (EBGP) to exchange routes (recommended).



Corporate and Sales Headquarters

Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or +1.408.745.2000
Fax: +1.408.745.2100
www.juniper.net

APAC and EMEA Headquarters

Juniper Networks International B.V.
Boeing Avenue 240
1119 PZ Schiphol-Rijk
Amsterdam, The Netherlands
Phone: +31.207.125.700
Fax: +31.207.125.701

Copyright 2024 Juniper Networks, Inc. All rights reserved. Juniper Networks, the Juniper Networks logo, Juniper, Junos, and other trademarks are registered trademarks of Juniper Networks, Inc. and/or its affiliates in the United States and other countries. Other names may be trademarks of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Send feedback to: design-center-comments@juniper.net V1.0/240410/sol-overview-campus-fabric-wan-router-integration