

Juniper® Validated Design

JVD Test Report Brief: Campus Fabric IP Clos Using Mist Wired Assurance

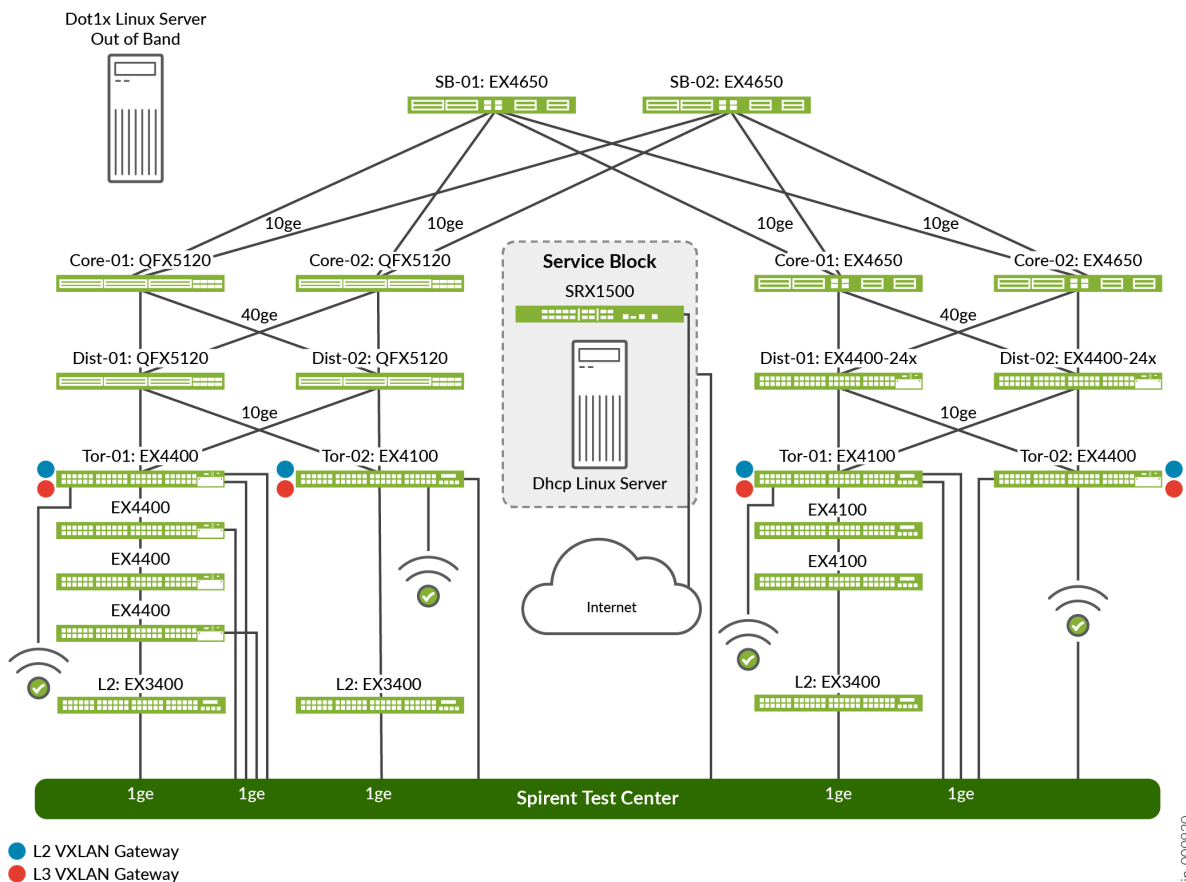
Introduction

This test report brief contains qualification test report data for the Campus Fabric IP Clos Using Mist Wired Assurance Juniper Validated Design (JVD). The Campus Fabric IP Clos JVD extends the EVPN fabric to connect VLANs across multiple buildings or floors of a single building. This is done by stretching the Layer 2 VXLAN network with routing occurring in the access device instead of the core (Centrally-Routed Bridging (CRB)) or distribution (Edge Routed Bridging (ERB)) layers.

If you have questions about this JVD, contact your Juniper Networks representative.

Test Topology

Figure 1: Tested Topology



Platforms Tested

Table 1: Tested Platforms

Role	Platform	OS
Core Switch-1	QFX5120-48YM	Junos OS 22.4R3
Core Switch-2	QFX5120-48YM	Junos OS 22.4R3
Core Switch-3	QFX4650-48Y	Junos OS 22.4R3
Core Switch-4	QFX4650-48Y	Junos OS 22.4R3
Distribution Switch-1	EX4650-48Y	Junos OS 22.4R3
Distribution Switch-2	EX4650-48Y	Junos OS 22.4R3
Distribution Switch-3	EX4400-24X	Junos OS 23.1R1
Distribution Switch-4	EX4400-24X	Junos OS 23.1R1
Access Switch-1 (4 member VC)	EX4400-48P	Junos OS 22.4R3
Access Switch-2 (standalone)	EX4400-48MP	Junos OS 22.4R3
Access Switch-3 (3 member VC)	EX4100-24P	Junos OS 22.4R3
Access Switch-4 (standalone)	EX4100-48P	Junos OS 22.4R3
RADIUS Server VM	Linux	Ubuntu 16.04.3 LTS
DHCP server	VM	Linux
WAN router	SRX1500	Junos OS 22.4R3

Version Qualification History

This JVD has been qualified in Junos OS Release 22.4R3.

Scale and Performance Data

Table 2: Scale Data

Services	Scale
EVPN-VXLAN	20
EVPN-VXLAN L3 VRF	5
VLANs	500
VRF	20
MAC Scale	16000
MAC IP	16000
IRB	20

Performance

Traffic rate: 20000 FPS per stream block.

High Level Features Tested

- The access layer switches have client VLANs, distributed across EVPN Type 5 VRFs. All the access layer switches act as L2 and L3 VXLAN gateways.
- Each client VLAN has ANYCAST IRBs, on each access switch, and has wired simulated clients as well as MIST APs on PoE-enabled interfaces.
- Stateless DHCP relay helps the MIST APs and the clients get IP addresses from DHCP Server across the IP fabric.
- The 802.1x authentication of clients connected behind the access switches takes place using a RADIUS server located across the IP fabric.
- The DHCP server and SRX WAN router are all multihomed into all the service layer switches, using ESI LAGs.
- Additional features tested on the access switches:
 - Storm control
 - MAC limit
 - QoS
 - PoE
 - DHCP snooping
 - Dynamic Address Resolution Protocol (ARP) inspection
 - Protect RE-filter
 - IP source guard
 - Dynamic Port Profile (DPC)

Event Testing

The following events are tested:

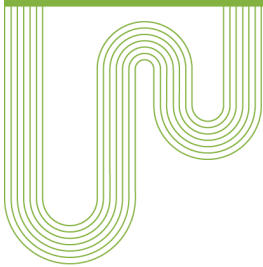
- Interface flap
 - Between Access and Distribution
 - Between Distribution and Core
 - Between Core and Service Block
 - Between Service Block and WAN Edge
 - Between Access and Access Point
- Node reboot
 - Access
 - Distribution
 - Core
- Image upgrade on access VC and standalone
- RE switch over on access VC
- Mist Dynamic Port Configuration (DPC)

- Delete/add VLAN and VRF through Mist Fabric
- Traffic recovery was validated after all scenarios were tested

Solution Non-Goals

Validation for the following items was not performed:

- Current focus is to validate scale-out fabric with PODs. 3-Stage IP Clos is not part of the current scope.
- Interleaved connections between four core switches towards distribution switches when having only two downlinks.
- Mist Edge integration for Wi-Fi scaling.
- Testing with two redundant WAN routers. See the Campus Fabric WAN-Router Integration JVD.
- Testing with VXLAN GBP. See the Microsegmentation with VXLAN Group-Based Policies in IP Clos Fabric JVD.



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Send feedback to: design-center-comments@juniper.net V2.0/240322/testreportbrief-campus-fabric-ip-clos-wired-assurance