JVD Test Report Brief: Juniper Mist™ Access Assurance

Introduction

This test report brief contains qualification test report data for the Mist Access Assurance Juniper Validated Design (JVD). Juniper Mist Access Assurance is a cloud-based service that ensures zero-trust, identity-based network access, and full-stack policy and segmentation assignments with end-to-end user experience visibility. The service delivers a suite of access control functionality with a flexible, yet simple, authorization policy framework for onboarding guests, IoT, BYOD, and corporate devices. Client connection is controlled based on user and device identities, regulating access for devices connecting to the network. Access Assurance also provides access control services for devices leveraging 802.1X authentication and MAC Address Bypass for non-802.1X allowlisted and wired IoT devices.

Test Topology

Figure 1: Juniper Mist Access Assurance Test Topology
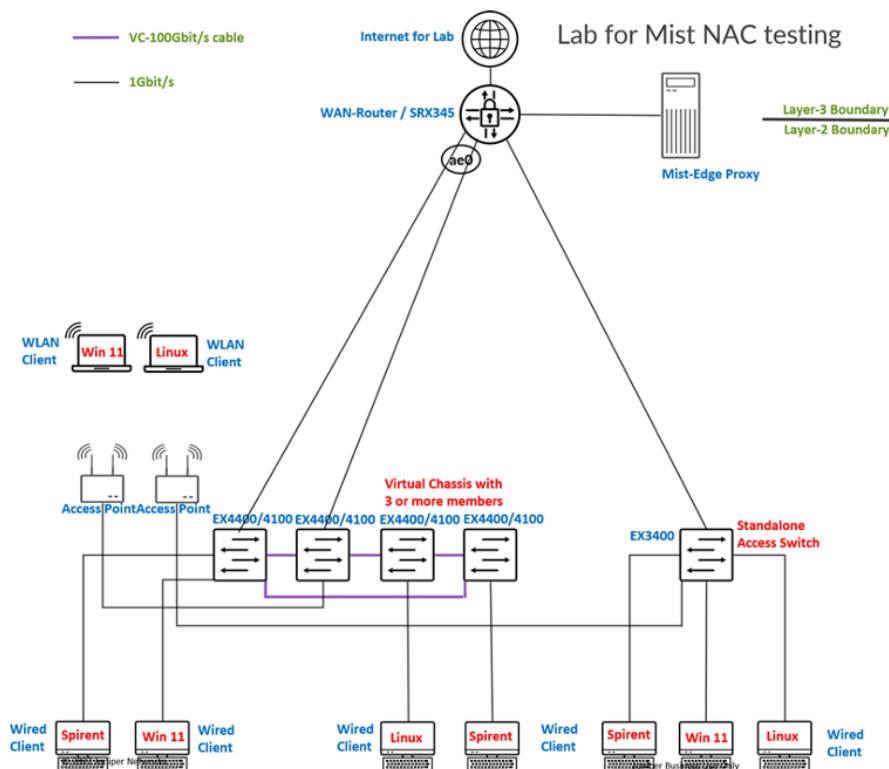
Platforms Tested

Table 1: Devices Under Test (DUT) for Juniper Mist Access Assurance

Devices Under Test						
Tag	Role	Model	OS Release	VC	Helper/DUT	Additional Info
R0	Access Switch-1	EX4100-48P	Junos OS 23.2R2	YES	DUT	
R1	Access Switch-2	EX4400-48P	Junos OS 23.2R2	YES	DUT	
R2	Access Switch-3	EX3400-48P	Junos OS 23.2R2	NO	DUT	
R2	WAN Edge	SRX345	Junos OS 23.2R2	NO	DUT	
AP	Juniper AP	AP	Mist OS	NO	Helper/DUT	WiFi Access Point
RT0	Traffic Generator	Spirent	SpirentOS	NO	Helper	Access hosts / DHCP Client
Win	Client	Windows	Win 11 pro	NA	Helper	Host
Lin	Client	Linux	Ubuntu 20.04	NA	Helper	Host
Juniper Mist Edge	Juniper Mist Edge proxy	X6	Mist Edge OS	NA	Helper	

SRX as DHCP server
Juniper Mist Access Assurance as RADIUS server for authentication
All the devices will be onboarded to Mist.

Version Qualification History

This JVD has been qualified in Junos OS Release 23.2R2.

High Level Features Tested

- IPv4
- LLDP
- LACP
- LAG
- VLAN (802.1q)
- ARP
- L2-Switching
- DNS
- Access Points
- Virtual Chassis
- Juniper Mist cloud-based fabric management
- RADIUS
- RadSec

- 802.1X
- EAP-MD5
- EAP-TLS
- EAP-TTLS
- EAP-TEAP
- IdP
- LDAP
- VXLAN Group-Based Policies
- MDM
- Microsoft Intune
- Juniper Mist Edge
- WPA 2 Enterprise
- WPA 3 Enterprise
- PSK
- MPSK
- MAB

Traffic Profile

- Traffic test between all clients on the same VLAN and on the same switch
- Traffic test between all clients on the same VLAN on different switches
- Traffic test between all clients on different VLANs on the same switch
- Traffic test between all clients on different VLANs on different switches
- Ping tests from Windows and Linux clients

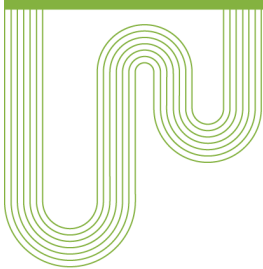## Event Testing

- Reboot
- GRES

Known Limitations

- Testing with third-party switches and APs was achieved using Juniper Switches and APs in unmanaged mode with Juniper Mist Edge as RadSec proxy.
- Working with customer PKIs. We use either the automatic Mist PKI for each organization or a homegrown PKI.
- Testing Eduroam forwarding due to lab limitations.

- Testing dynamic assignment for group-based policies (GBP) as:
    - This is extensively tested by the JVD extension for IP Clos.
    - Testing with RADIUS AVP Juniper-Switching-Filter was performed and only the content of the string changes for dynamic GBP assignment.
- Testing with campus fabric. All JVDs for campus fabric already undergo rigorous testing with a third-party RADIUS server and MAB + EAP method testing to ensure authentication and authorization (VLAN/filter) assignment. NAC solutions take care of the authentication and authorization when a new client accesses a network at the ingress access switch. They do not need to know how the transport is done after that point and are independent if you just forward via VLANs or VXLAN.
- Certificate expiration scenarios cannot be tested as we cannot change the clock setting on the Juniper Mist authentication cloud.
- Redundancy of the Juniper Mist Edge proxy device is not tested in this first phase. Keep in mind that the client does trigger the failover between RADIUS servers.
- Mobile Device Management (MDM) testing exclusions:
    - Jamf as an MDM option for Apple supplicants was excluded due to lab limitations.
    - Testing with Airwatch was excluded due to lab limitations.

Intellectual Property Rights

This document contains valuable trade secrets and confidential information of Juniper Networks Inc. and its suppliers, and shall not be disclosed to any person, organization, or entity unless such disclosure is subject to the provisions of a written non-disclosure and proprietary rights agreement or intellectual property license agreement approved by Juniper Networks Inc. The distribution of this document does not grant any license in or rights, in whole or in part, to the content, the product(s), technology, or intellectual property described herein.