

Diagnostic Tools

The Versa Networks lab environment consists of a fixed, pre-configured topology that will allow you to explore, configure, and manage Versa Networks CPEs by using Versa Director, the central management and orchestration platform for a Versa Secure SD-WAN solution. After completing this lab, you will be able to:

- Use the built-in diagnostic tools to test reachability between devices; and
- Configure and run the speedtest function between devices.

In this lab, you will be assigned a single CPE device (Branch device) for configuration and monitoring.

The lab environment is accessed through a remote desktop connection. The remote desktop connection opens a remote workstation, where you will use various tools to navigate and configure the lab environment. The main tool you will use in this lab is Versa Director. Versa Director can be accessed by opening the Google Chrome browser on the Remote Desktop. There is a bookmark to the Versa Director device in the Google Chrome bookmark bar.

This lab environment is a shared environment. There may be up to 5 other students in the environment. Each student has their own remote desktop, but the Versa Director is shared. Because of the shared environment, you may see configuration templates, device groups, workflows, and devices that other students have created, or that have been pre-provisioned within Versa Director. It is important that you only modify the configuration components that are assigned to you by your instructor.

During certain lab parts, the lab guide will present sample output from the GUI or the CLI. The sample outputs are SAMPLES and represent the information as it appeared during the lab guide creation. Your output may vary in some ways (some devices may or may not be present, some routes may or may not be the same, etc.) Do not be alarmed if your results vary slightly from the results shown in the lab guide. The important thing is that the lab functions in the desired manner.

Look for these hints to help you in the labs This lab guide will step you through some common tasks that are performed on Versa Director. After an introductory set of exercises, you will be asked to perform some basic tasks that will allow you to become more familiar with the environment. At the end of the lab guide you can find additional help on to how to complete the tasks, so if you have trouble with a task, please refer to the help section. If you still cannot accomplish the task, ask your instructor for assistance. In addition, you will see **hints** placed throughout the lab guide to help you along.

The goal of this and all lab exercises is to help you gain additional skills and knowledge. Because of this, the lab guide contains additional instruction to supplement the student guides.

Now that we've discussed what is expected, let's get started!

Lab Topology



Remember
this! You will
use it a lot!Branch OoB Login: versaBranch OoB Password: versa123

Testing Host Login: labuserXYZ (e.g. labuser110, labuser111, etc.) Testing Host Password: versa123

Interface Addresses

CPE	vni-0/0	vni-0/1	vni-0/2
Branch110	192.168.19.110/24	192.168.20.110/24	172.16.110.1/24
Branch111	192.168.19.111/24	192.168.20.111/24	172.16.111.1/24
Branch112	192.168.19.112/24	192.168.20.112/24	172.16.112.1/24
Branch113	192.168.19.113/24	192.168.20.113/24	172.16.113.1/24
Branch114	192.168.19.114/24	192.168.20.114/24	172.16.114.1/24
Branch115	192.168.19.115/24	192.168.20.115/24	172.16.115.1/24
MPLS Gateway	192.168.19.3		
INET Gateway		192.168.20.3	

Controller Addresses

MPLS	MPLS Gateway	INET	INET Gateway
192.168.17.3/24	192.168.17.1	192.168.18.3/24	192.168.18.1

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Exercise 1: Connect to the remote lab environment

The first lab exercise is to become familiar with how to connect to the remote lab environment. Your instructor should have reviewed the following information with you prior to starting:

- Branch/Node/CPE Assignment
- Remote Lab Access

If you have not yet been assigned a branch device, please contact the instructor as this is a shared environment, and each student will configure and monitor a specific branch node.

Question: What node is assigned to you in the lab topology?

Follow the instructions provided by your instructor to connect to the remote lab environment.

Once you have started your remote desktop session, you will be presented with the remote desktop:

Resulter Readme (instructions and login information) Remote Desktop to testing hosts Google Chrome Browser
Multi-tabbed Putty Readme (instructions and login information) Remote Desktop to testing hosts Google Chrome Browser
Readme (instructions and login information) Remote Desktop to testing hosts Google Chrome Browser
Readme (instructions and login information) Remote Desktop to testing hosts Google Chrome Browser
Reading (Instructions and login information) Remote Desktop to testing hosts Google Chrome Browser
READMLAN Remote Desktop to testing hosts Google Chrome Browser
Remote Desktop to testing hosts
Google Chrome Browser
Dektop Google Chrome Browser
Google Chrome Browser
Google Chrome Browser
Google Chrome Browser
Google Chrome Browser
Google Chrome Browser
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On the remote desktop, open the Google Chrome browser window. The Google Chrome browser window contains a bookmark to the Versa Director. Log into the Versa Director with the username associated with your assigned branch device:

СРЕ	Username	Password
Branch110	labuser110	Versa@123
Branch111	labuser111	Versa@123
Branch112	labuser112	Versa@123
Branch113	labuser113	Versa@123
Branch114	labuser114	Versa@123
Branch115	labuser115	Versa@123

Lab Exercise Overview

In this lab you will perform various tasks and is an open lab environment. You will be given minimal guidance on how to perform the tasks. In this lab you will:

Open the Versa Director Monitor dashboard

Open the Appliance Context mode of your device in order to gain access to the diagnostic tools

Initiate a PING to the WAN interface of the Hub device on the MPLS transport

Initiate a PING to the WAN interface of the Hub device on the INET transport

Initiate a PING to the LAN interface on the Hub device in the LAN routing instance

Initiate a speedtest from your node to the Hub device over the MPLS transport

Initiate a speedtest from your node to the Hub device over the LAN routing instance



STOP! Notify your instructor that you have completed this lab.

Exercise 1: Access the Diagnostic Tools

In this lab part you will navigate to the Appliance Context mode of your assigned node. All configuration and diagnostic tasks will be performed from the Appliance Context mode.

Navigate to the Appliance Context mode of your device. In the Device Context mode of your device, locate and open the Tools tab in the Monitor dashboard.

	Monitor Analytics Configuration Administration	Administrator 🗸 🧍
Home Branch-110		Build
Search	Summary Services System Tools	Shell Config Status - Upgrade Subscription
🗕 🛣 Tenant1 🛛 🕥	Branch-110 : 10.0.160.103 Location VISA	Reachable

Open the Ping utility and initiate an ICMP request to the LAN port of the Hub device (172.16.105.1). Ensure that you are sourcing the ICMP request from the Tenant LAN VR and the IP address of your local LAN port.

		🗐 📋 Administrator 🗸
Home Branch-110		Build
Search	Summary Services System Tools Shell Config Status - Up	pgrade Subscription
🔤 着 Tenant1 🥥	Branch-110 : 10.0.160.103 Location 🔮 USA	chable
	Host Name/Address: 172.16.105.1 Start Pring Traceroute Tenant1-LAN-VR Source Address: 172.16.110.1 Packet-size: 5 Count: 10	
	Results clear PING 172.16.105.1 (172.16.105.1) from 172.16.110.1: 5(33) bytes of data. 13 bytes from 172.16.105.1: icmp_seq=1 ttl=64 13 bytes from 172.16.105.1: icmp_seq=2 ttl=64 13 bytes from 172.16.105.1: icmp_seq=3 ttl=64 13 bytes from 172.16.105.1: icmp_seq=4 ttl=64 13 bytes from 172.16.105.1: icmp_seq=4 ttl=64 13 bytes from 172.16.105.1: icmp_seq=5 ttl=64 13 bytes from 172.16.105.1: icmp_seq=5 ttl=64 13 bytes from 172.16.105.1: icmp_seq=5 ttl=64 13 bytes from 172.16.105.1: icmp_seq=7 ttl=64 13 bytes from 172.16.105.1: icmp_seq=7 ttl=64 13 bytes from 172.16.105.1: icmp_seq=7 ttl=64 13 bytes from 172.16.105.1: icmp_seq=8 ttl=64 13 bytes from 172.16.105.1: icmp_seq=8 ttl=64 13 bytes from 172.16.105.1: icmp_seq=8 ttl=64 13 bytes from 172.16.105.1: icmp_seq=1 ttl=64 13 bytes from 172.16.105.1: icmp_seq=8 ttl=64 13 bytes from 172.16.105.1: icmp_seq=1 ttl=64 13 bytes from 172.16.105.1: icmp_seq=3 ttl=64 13 bytes from 172.16.105.1: icmp_seq=3 ttl=64 13 bytes from 172.16.105.1: icmp_seq=3 ttl=64	

From the Ping utility, initiate an ICMP request to the MPLS WAN port of the Hub device (192.168.19.105) to verify connectivity to the WAN interface of the hub. Be sure to source your ICMP request from the WAN IP address of your device and from the MPLS transport virtual router.

Home Branch-110	Monitor Analytics Configuration Administration		Build
Search	Summary Services System Tools		Shell Config Status Upgrade Subscription
Tenant1 🕝	Branch-110 :10.0.160.103 Location 🔮 USA		Reachable
	Pring Traceroute Tcpdump SpeedTest	Host Name/Address: Routing Instance: Source Address: Packet-size: Count:	192.168.19.105 Start MPLS-Transport-VR 192.168.19.110 5 10
	Results Clear PING 192.168.19.105 (192.168.19.105) from 192.168.19.110 : 5(33) bytes of data 13 bytes from 192.168.19.105: icmp_seq=1 ttl=64 13 bytes from 192.168.19.105: icmp_seq=3 ttl=64 13 bytes from 192.168.19.105: icmp_seq=3 ttl=64 13 bytes from 192.168.19.105: icmp_seq=4 ttl=64 13 bytes from 192.168.19.105: icmp_seq=5 ttl=64 13 bytes from 192.168.19.105: icmp_seq=5 ttl=64 13 bytes from 192.168.19.105: icmp_seq=5 ttl=64 13 bytes from 192.168.19.105: icmp_seq=8 ttl=64 13 bytes from 192.168.19.105: icmp_seq=7 ttl=64	a.	

Navigate to the Hub device configuration by selecting the Hub-105 device from the top-left dropdown menu.

VE		Monitor	Analytics	Configuration	Administration	
Home Search	Branch-110 Branch-110 Controller1 Hub-105	Branco-110	тоо! 1001	Loca	tion 9 USA	
		Ping Tracer	oute Tcpdump S	n DeedTest		Host Name Routing

From the Hub device Appliance Context, navigate to Configuration > Others > System > Configuration > Configuration and locate the Speed Test Server configuration section.

VERSA								<u></u>	I ()	A
W NETWORKS	Monitor	Analytics	Configuration	Admi	nistration					
Home Hub-105									ſ	
* 0 0 8					Driver Bulking	(e	QoS Frame Overhead Auto Adjust			Ĩ
S Organization	Services				Forwarding Queue	:-	QoS Frame Overhead Length	-		
System	SETTO		140404/	.0	Inter-thread pkt rings size	6 e	Continuous QoS Evaluation	: 🔲		
- system	SELF		AAAAAA		Large Packet Buffer Cache	2 -	Restart on Change	: 🗖		
Configuration V	220				Max Large Packet Buffer Size	6 H	Run Mode	(-)		
Configuration					Max Small Packet Buffer Size	z -	Small Packet Buffer Cache	-		
💭 Core Profile	Management			Ľ	Maximum Bandwidth	c -	Strip Input VLAN	: 🔳		
Oomain Name Servers					Max Idle Sleep Time(microseconds)	2 -	Same Thread Reassembly	: 🔲		
Security Package Up	SSH				Max Tenants	6 -	Thread Bulking	1 - :		
💍 Time & Date >					Maximum Allowed Sessions	5 -	Token Bucket	: 🔳		
Storage Configurations	Banger			Ľ						
Appliance User M >					Parameters					
Flasticity	CLI	1.4			App ID Max Packet Number	1 ×	Disable LEF Session Logging	:.		
Enourise Modes	SSH	1-			App ID On HTTP Header End	1 -	Max DPI Stream Depth	1.		
Service Nodes >	MOID				Cache Flush Threshold (days)	5 -	Panic On Assert	64		
Syslog Server	Console				DPI File Stream Buffer Size	1 -	Receive Checksum Computation	: 🔳		
Alarms				OP	Hard Disk Common Pool Size	5	Security Memory Limit	(- C		
High Availability	speed lest serve	er.			Hard Disk Max Size	: -	Stream TCP Checksum Validation	: 🔳		
UNFS >	Mode	: Enabled			Hard Disk Path	5 -	Stream Fastpath Normalize Packet	:		
	Pouting Instance				IPS SDB Purge Timeout (days)	1 -	Stream TCP Evasion Detection	: 🔳		
	Routing instance				IPS App ID Detection	: 🗰	Stream Ignore Asymmetric Traffic	:		
	INEI-Iransport-V	/R			IPS Javascript Extended Detection	: 📾	URLF Premium DB Min RAM Size	1.4		
	MPLS-Transport-	VR			IPS Javascript Deobfuscation	1 -	URLF Sample DB Min RAM Size	1.4		
	Tenant1-LAN-VR				IPS Async Signature Compilation	: 📾	URLF Other DB Min RAM Size	1.4		
					IPS Action During Signature Compile	ation: -	IPS SDB Memory Limit (MIB)	1.5		
					IPS Close On Memory Failure	: 📾	App User Count	1.5		

The speedtest server function can respond to and service speedtest request on the routing instances on which the server is enabled. On the hub device, the speedtest server function is enabled on the customer-facing LAN and both transport networks.

Return to the Appliance Context mode of your device by selecting your device from the device dropdown menu.

From your Appliance Context mode Tools dashboard, select the SpeedTest tool.

In the SpeedTest dashboard, initiate a speed test between your device and the Hub device MPLS WAN port (192.168.19.105). Ensure that the correct routing instance and interface for the traffic is selected. The results will be shown after the test is complete.

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Another way to start a speed test is from the Summary tab of the Appliance Context. Navigate to the Summary tab and locate the INET interface in the CPE Interfaces table (vni-0/1.0). On the right side of the table, click the Measure button to initiate a speed test on that link. Fill in the dialog box that appears and click Request.

Home Branch-110		~]							Build		
Search	Summary Services	System Tools						Shell Config Status - Upgrade	Subscription		
Tenant1 G	Branch-110 : 10.0.160.103 Location 🔮 USA										
	CPE Interfaces										
					Status	Live Data		Bandwidth (Mbps)			
	Interface 👻	Network Name	Service Provider	Operational	Admin		Configured	Measured			
	vni-0/0.0 💿	MPLS	-	1	1			↑ 968.36 🕹 987.96 C 💿 Measure			
	vni-0/1.0 💿	INET						Status : uplink-in-progress			
	vni-0/2.0 💿	Local-LAN	-	1	Ŷ	0		Not available for LAN interfaces.			
	SD-WAN Application Traffic & Hide Chart										
	Remote Branch*	Please Select 🗸	Application Rule	ePlease Sele	ect V		Latency	□ Jitter □ Packet Loss □ MO	S		

