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## Throughput Performance for Release 22.1.4

This article provides throughput performance numbers for Versa Operating System™ (VOS™) Release 22.1.4.

All throughput performance testing was done under the following conditions:

- SD-WAN and CGNAT services with default configuration were activated during performance testing.
- Testing was done with UDP traffic, as specified in RFC 2544, with a 0.1 percent acceptable loss rate, using 1024 sessions with application offloading and with CPU isolation enabled.
- When you test UDP traffic, start the test with less traffic, and then increase by 20 percent until the service load reaches 100 percent.
- For CSG350, CSG355, and CSG365 series appliances, and V110 and V120 appliances, QAT is disabled by default. This is based on a recommendation from Intel due to rare occurrences of traffic stalling when QAT is enabled.
- The session timeout was set to high value (3,600 seconds).
- Encryption with AES128-GCM, which is the default encryption method.
- A Spirent tester was used for testing SD-WAN traffic (refer to Layer 1 traffic statistics).
- Performance is the amount of traffic processed by the CPU; that is, it is an aggregate of WAN-to-LAN and LAN-to-WAN traffic.
- Performance numbers were captured at 100 percent of the service load under ideal test conditions, so all numbers should be considered as maximum values.
- The traffic test uses internet mix (IMIX) without fragmentation, so users may adjust the 1400 byte frame size in the tables below based on the traffic generator used for testing.
- For devices using 16 or more CPUs, issue the CLI command **set system service-options flow-balance-algorithm RR** for idle session distribution.
- Four or more physical interfaces were used, for optimal performance.
- CSG5000 series and Dell-7515 appliances were tested with four 100-Gigabit Ethernet ports with eight pollers for branch-to-branch tests and sixteen pollers for DIA tests.

For all testing, the following internet mix (IMIX) distribution was used:

Frame Size (Bytes)	Percentage
66	45
78	8
218	8
594	2
1354	16
1418	21

## Versa Cloud Services Gateways (CSGs)

For items in the table marked with a plus (+), values are limited because of the number of ports used.

Model	Packet Size	UDP Throughput	
		Direct Internet Access (DIA)	SD-WAN Branch to Branch
CSG150	1400	2 Gbps+	1.1 Gbps
	Internet mix	2 Gbps+	500 Mbps
	100	400 Mbps	100 Mbps
CSG350	1400	2 Gbps	510 Mbps
	Internet mix	1.1 Gbps	230 Mbps
	100	230 Mbps	50 Mbps
CSG355	1400	2.5 Gbps	510 Mbps
	Internet mix	1.2 Gbps	230 Mbps
	100	230 Mbps	50 Mbps
CSG365	1400	4 Gbps+	825 Mbps
	Internet mix	1.7 Gbps	375 Mbps
	100	350 Mbps	80 Mbps

Model	Packet Size	UDP Throughput	
		Direct Internet Access (DIA)	SD-WAN Branch to Branch
CSG730	1400	2.1 Gbps	675 Mbps
	Internet mix	950 Mbps	280 Mbps
	100	200 Mbps	55 Mbps
CSG750, CSG750R	1400	4 Gbps+	1.7 Gbps
	Internet mix	2.5 Gbps	700 Mbps
	100	525 Mbps	125 Mbps
CSG770, CSG770R	1400	4 Gbps+	3.5 Gbps
	Internet mix	3.5 Gbps	1.6 Gbps
	100	725 Mbps	340 Mbps
CSG780R	1400	4 Gbps+	3.4 Gbps
	Internet mix	4 Gbps+	2.2 Gbps
	100	1.1 Gbps	420 Mbps
CSG1300	1400	16.75 Gbps	7.25 Gbps
	Internet mix	6.85 Gbps	3.45 Gbps
	100	1.35 Gbps	740 Mbps
CSG1500	1400	40 Gbps+	25 Gbps
	Internet mix	19 Gbps	12 Gbps
	100	3.8 Gbps	2.2 Gbps
CSG2500	1400	40 Gbps+	37 Gbps
	Internet mix	37 Gbps+	23 Gbps
	100	8.35 Gbps	4.5 Gbps
CSG5000	1400	180 Gbps	95 Gbps

Model	Packet Size	UDP Throughput	
		Direct Internet Access (DIA)	SD-WAN Branch to Branch
	Internet mix	88 Gbps	57 Gbps
	100	17 Gbps	13 Gbps

## Versa White Boxes

For items in the table marked with a plus (+), values are limited because of the number of ports used.

Model	Packet Size	UDP Throughput	
		Direct Internet Access (DIA)	SD-WAN Branch to Branch
Versa 110/510	1400	4 Gbps	800 Mbps
	Internet mix	1.7 Gbps	350 Mbps
	100	325 Mbps	80 Mbps
Versa 120/520	1400	4 Gbps	2.4 Gbps
	Internet mix	2.9 Gbps	1.2 Gbps
	100	575 Mbps	270 Mbps
Versa 200	1400	2.1 Gbps	650 Mbps
	Internet mix	950 Mbps	280 Mbps
	100	200 Mbps	55 Mbps
Versa 210	1400	4 Gbps+	1.7 Gbps
	Internet mix	2.5 Gbps	725 Mbps
	100	525 Mbps	140 Mbps
Versa 220	1400	12.5 Gbps	4.2 Gbps
	Internet mix	6.7 Gbps	2.15 Gbps

[https://docs.versa-networks.com/Getting\\_Started/Deployment\\_and\\_Initial\\_Configuration/Scalability\\_and\\_Performance/Throug...](https://docs.versa-networks.com/Getting_Started/Deployment_and_Initial_Configuration/Scalability_and_Performance/Throug...)

Updated: Wed, 23 Oct 2024 07:30:58 GMT

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Model	Packet Size	UDP Throughput	
		Direct Internet Access (DIA)	SD-WAN Branch to Branch
	100	1.2 Gbps	365 Mbps
Versa 240	1400	16.75 Gbps	7.25 Gbps
	Internet mix	6.85 Gbps	3.45 Gbps
	100	1.35 Gbps	740 Mbps
Versa 810	1400	33 Gbps	11 Gbps
	Internet mix	13.65 Gbps	4.85 Gbps
	100	2.75 Gbps	1.05 Gbps
Versa 850	1400	40 Gbps	16 Gbps
	Internet mix	18 Gbps	8 Gbps
	100	4 Gbps	1.65 Gbps
Versa 1000	1400	40 Gbps+	21 Gbps
	Internet mix	30 Gbps	11 Gbps
	100	5.5 Gbps	2.2 Gbps
Versa 1800	1400	60 Gbps	37 Gbps
	Internet mix	40 Gbps	22 Gbps
	100	9 Gbps	5 Gbps

## Versa Dell Appliances

For items in the table marked with a plus (+), values are limited because of the number of ports used.

Model	Packet Size	UDP Throughput	
		Direct Internet Access (DIA)	SD-WAN Branch to Branch
VEP-1420N	1400	2.5 Gbps	950 Mbps
	Internet mix	1.8 Gbps	400 Mbps
	100	250 Mbps	85 Mbps
VEP-1425	1400	4 Gbps+	1.7 Gbps
	Internet mix	2.5 Gbps	750 Mbps
	100	525 Mbps	145 Mbps
VEP-1445	1400	12.5 Gbps	4.2 Gbps
	Internet mix	6.7 Gbps	2.15 Gbps
	100	1 Gbps	365 Mbps
VEP-1485	1400	16.75 Gbps	7.25 Gbps
	Internet mix	6.85 Gbps	3.45 Gbps
	100	1.35 Gbps	740 Mbps
VEP-4600-V910	1400	34 Gbps	11.3 Gbps
	Internet mix	14.8 Gbps	4.5 Gbps
	100	3 Gbps	1.15 Gbps
VEP-4600-V930	1400	40 Gbps+	26.5 Gbps
	Internet mix	20 Gbps	13 Gbps
	100	4.2 Gbps	2.3 Gbps
R7515-V2800	1400	180 Gbps	95 Gbps
	Internet mix	88 Gbps	57 Gbps
	100	17 Gbps	13 Gbps

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## Additional Information

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