

Rate vs Range Test

Thu Jul 21 03:13:01 PDT 2022



Test Setup Information		
Device Under Test	Name	ASUS_GT_AXE11000
	SSIDs	ASUS_2.4G ASUS_5G ASUS_6G
	Passwords	Password@123 Password@123 Password@123
	BSSIDs	
	Notes	[BLANK]

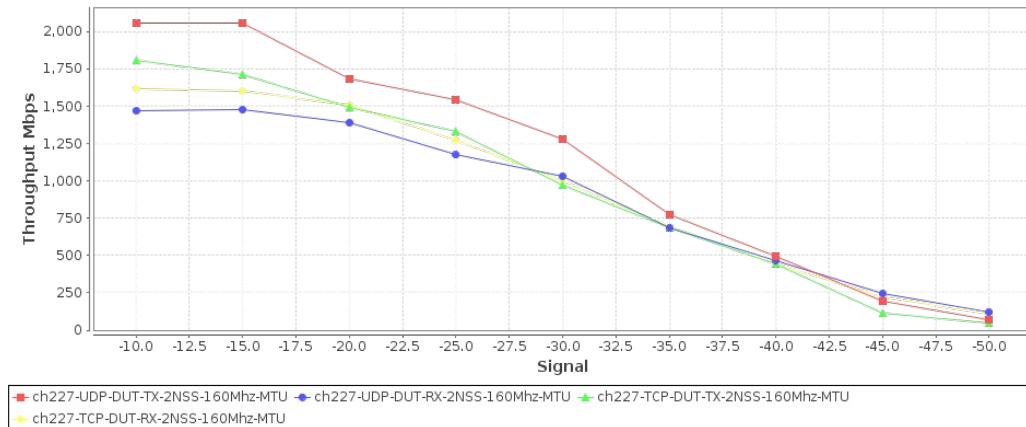
Objective

This test measures the performance over distance of the Device Under Test. Distance is emulated using programmable attenuation and a throughput test is run at each distance/RSSI step and plotted on a chart. The test allows the user to plot RSSI curves both upstream and downstream for different types of traffic and different station types.

Throughput vs calculated RF Signal for each different traffic type. The signal is calculated based on the configured path-loss, transmit power, and attenuation.

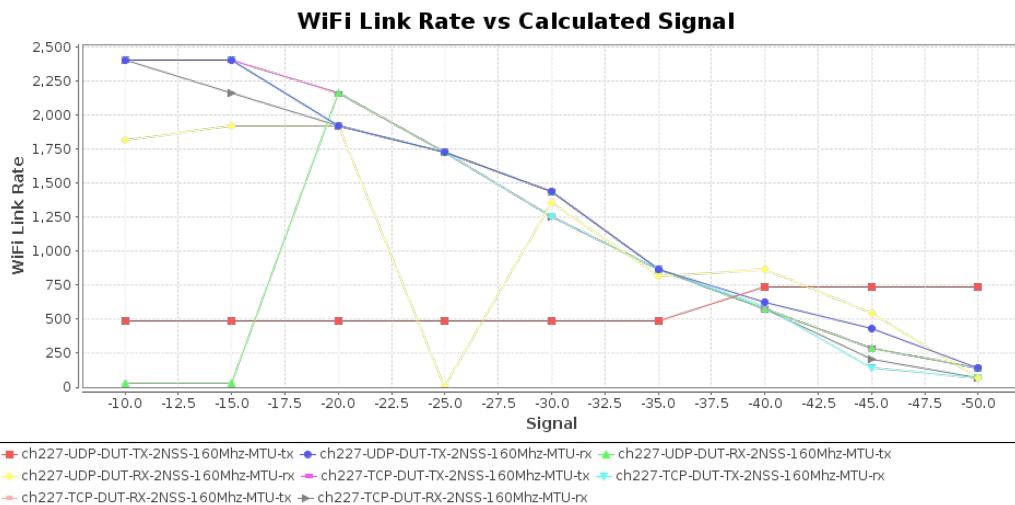
[CSV Data for Throughput vs Calculated Signal](#)

Throughput vs Calculated Signal



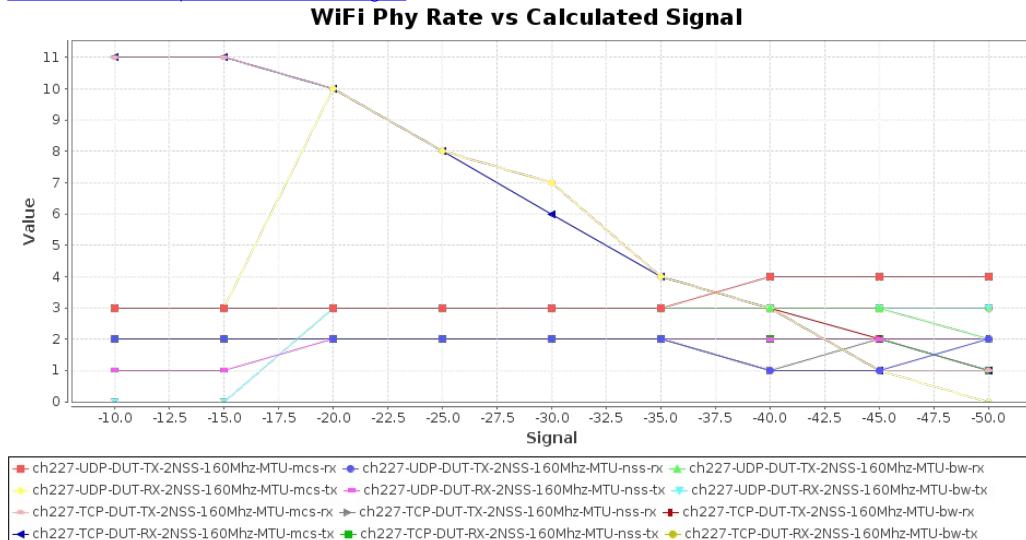
WiFi Link Rate (Phy Rate) vs calculated RF Signal for each different traffic type. The signal is calculated based on the configured path-loss, transmit power, and attenuation.

[CSV Data for WiFi Link Rate vs Calculated Signal](#)



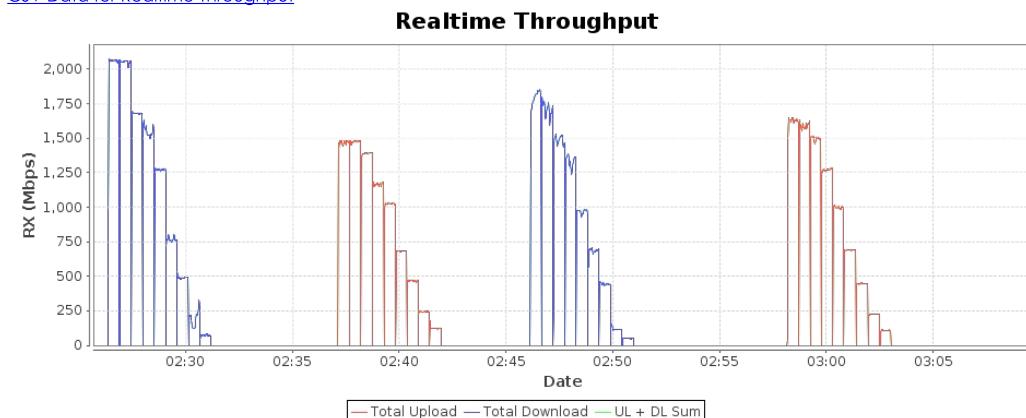
WiFi Phy Rate information vs reported calculated RF Signal for each different traffic type. To allow this to scale nicely on one graph, the Bandwidth values are converted from Mhz to an index:
 20Mhz: 0 40Mhz: 1 80Mhz: 2 160Mhz: 3 The signal is calculated based on the configured path-loss, transmit power, and attenuation.

[CSV Data for WiFi Phy Rate vs Calculated Signal](#)



Realtime Graph shows summary download and upload RX Goodput rate of connections created by this test. Goodput does not include Ethernet, IP, UDP/TCP header overhead.

[CSV Data for Realtime Throughput](#)



Test Information

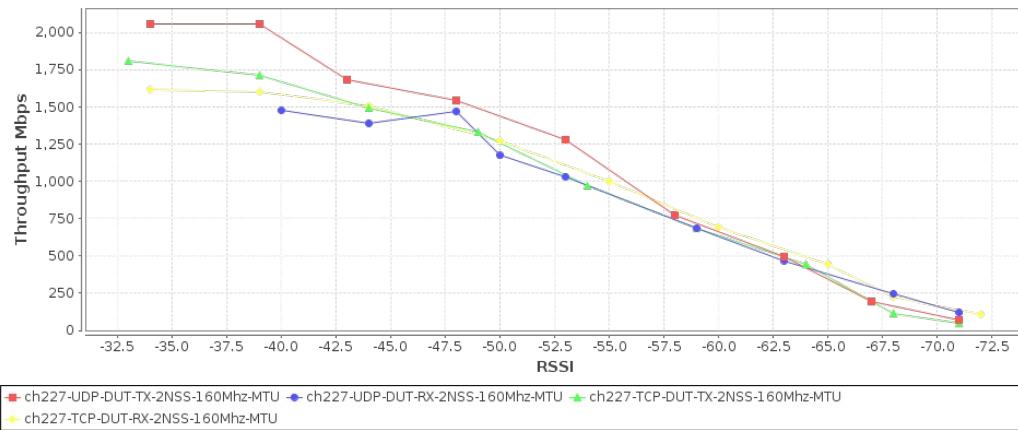
Message

Starting Rate vs Range test with: 68 iterations.

Throughput vs reported RSSI for each different traffic type. Please note that the LANforge RSSI may be similar to the remote Device Under Test RSSI but there is no guarantee of this. Differences in tx-power and RF splitter/combiners can cause different RSSI as reported by LANforge and the remote peer device.

[CSV Data for Throughput vs LANforge RSSI](#)

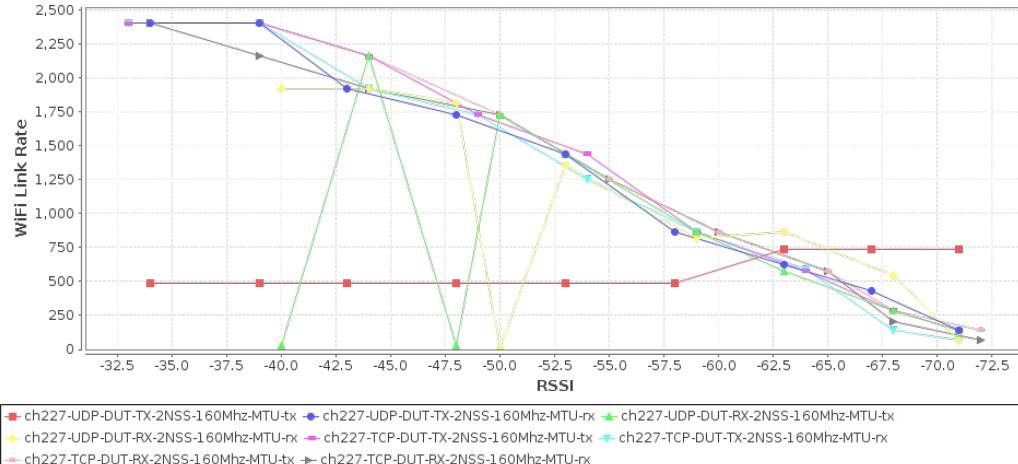
Throughput vs LANforge RSSI



WiFi Link Rate (Phy Rate) vs reported RSSI for each different traffic type. Please note that the LANforge RSSI may be similar to the remote Device Under Test RSSI but there is no guarantee of this. Differences in tx-power and RF splitter/combiners can cause different RSSI as reported by LANforge and the remote peer device.

[CSV Data for WiFi Link Rate vs LANforge RSSI](#)

WiFi Link Rate vs LANforge RSSI

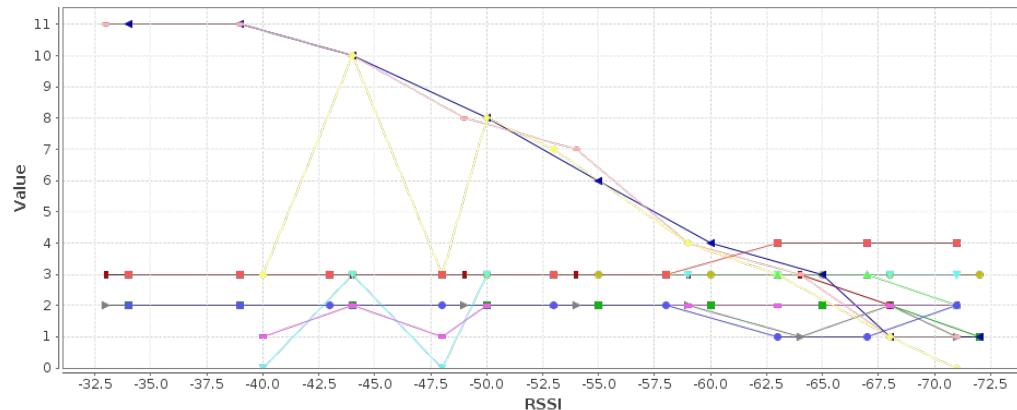


WiFi Phy Rate information vs reported RSSI for each different traffic type. To allow this to scale nicely on one graph, the Bandwidth values are converted from Mhz to an index:

20Mhz: 0 40Mhz: 1 80Mhz: 2 160Mhz: 3 Please note that the LANforge RSSI may be similar to the remote Device Under Test RSSI but there is no guarantee of this. Differences in tx-power and RF splitter/combiners can cause different RSSI as reported by LANforge and the remote peer device.

[CSV Data for WiFi Phy Rate vs LANforge RSSI](#)

WiFi Phy Rate vs LANforge RSSI



Constant values related to the table below.

Iteration-Duration	30s
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CSV data focussed on throughput. The values reported are gathered at the end of the test iteration before traffic is stopped. The test iterations consider 'Received' traffic to be received in the dominant direction. So, if the iteration is DUT-TX, then Received traffic is traffic received on the Station from the AP. If the iteration is DUT-RX, then Received traffic is received on Ethernet port from DUT and sent by the station. Columns starting with RSSI are from the perspective of the Station, so Tx-Rate is the Station transmit Phy Rate, and Rx-Rate is the Phy Rate received by the station. Rpt-Mode is negotiated mode, not necessarily Phy Rate mode.

Channel	Frequency	Security	NSS	Cfg-Mode	Bandwidth	Pkt	Traffic-Type	Direction	Atten	Rotation	Offered-1m	Rx-Bps	Rx-Bps-1m	Rx-Bps-LL	Rx-Bps-3s	RSSI	Tx-Failed	Tx-Failed%	Tx-Rate	Rx-Rate	Rpt-Mode	Rpt-Mode-Brief
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	0	NA	2.393 Gbps	2.057 Gbps	2.059 Gbps	2.118 Gbps	2.063 Gbps	-34	0 / 6203562	0	490 Mbps	2,402 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	5.0	NA	2.407 Gbps	2.047 Gbps	2.059 Gbps	2.118 Gbps	2.049 Gbps	-39	0 / 6527333	0	490 Mbps	2,402 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	10.0	NA	2.404 Gbps	1.676 Gbps	1.684 Gbps	1.732 Gbps	1.682 Gbps	-43	0 / 6337496	0	490 Mbps	1,921 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	15.0	NA	2.397 Gbps	1.543 Gbps	1.545 Gbps	1.589 Gbps	1.529 Gbps	-48	0 / 6309718	0	490 Mbps	1.73 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	20.0	NA	2.409 Gbps	1.27 Gbps	1.279 Gbps	1.315 Gbps	1.273 Gbps	-53	0 / 6359934	0	490 Mbps	1,441 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	25.0	NA	2.408 Gbps	767.953 Mbps	772.433 Mbps	794.472 Mbps	758.178 Mbps	-58	0 / 6295299	0	490 Mbps	864.6 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	30.0	NA	2.406 Gbps	488.551 Mbps	491.204 Mbps	505.219 Mbps	488.179 Mbps	-63	0 / 6340334	0	734.9 Mbps	626.9 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	35.0	NA	2.406 Gbps	196.137 Mbps	197.11 Mbps	202.734 Mbps	284.394 Mbps	-67	0 / 6281516	0	734.9 Mbps	432.3 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	40.0	NA	2.397 Gbps	71.338 Mbps	71.461 Mbps	73.5 Mbps	73.798 Mbps	-71	0 / 6339958	0	734.9 Mbps	144.1 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	45.0	NA	2.401 Gbps	0 bps	0 bps	0 bps	0 bps	0	0 / 538582	0	0 Mbps	0 bps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	50.0	NA	2.419 Gbps	0 bps	0 bps	0 bps	0 bps	0	0 / 375928	0	0 Mbps	0 bps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	55.0	NA	2.403 Gbps	0 bps	0 bps	0 bps	0 bps	0	0 / 292	0	0 Mbps	0 bps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	0	NA	1.469 Gbps	1.466 Gbps	1.469 Gbps	1.511 Gbps	1.465 Gbps	-48	0 / 1883787	0	29.2 Mbps	1,815 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	5.0	NA	1.476 Gbps	1.474 Gbps	1.476 Gbps	1.518 Gbps	1.479 Gbps	-40	0 / 1873599	0	29.2 Mbps	1,921 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	10.0	NA	1.39 Gbps	1.389 Gbps	1.39 Gbps	1.429 Gbps	1.393 Gbps	-44	0 / 1788508	0	2161.3 Mbps	1,921 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	15.0	NA	1.173 Gbps	1.164 Gbps	1.173 Gbps	1.206 Gbps	1.161 Gbps	-50	0 / 1492803	0	1729.6 Mbps	6 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	20.0	NA	1.031 Gbps	1.025 Gbps	1.031 Gbps	1.061 Gbps	1.022 Gbps	-53	0 / 1300487	0	1441.3 Mbps	1,361 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	25.0	NA	685.701 Mbps	681.161 Mbps	685.712 Mbps	705.277 Mbps	681.492 Mbps	-59	0 / 874645	0	864.6 Mbps	816.6 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	30.0	NA	467.794 Mbps	464.986 Mbps	468.128 Mbps	481.485 Mbps	465.735 Mbps	-63	0 / 594028	0	576.4 Mbps	864.6 Mbps	802.11a-AX	802.11ax

227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	35.0	NA	245.14 Mbps	244.067 Mbps	245.128 Mbps	252.122 Mbps	244.685 Mbps	-68	0 / 311946	0	288.2 Mbps	544.3 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	40.0	NA	119.587 Mbps	119.306 Mbps	119.641 Mbps	123.054 Mbps	119.513 Mbps	-71	0 / 170101	0	144.1 Mbps	68 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	45.0	NA	2.195 Gbps	0 bps	0 bps	0 bps	0 bps	0	0 / 795	0	0 Mbps	0 bps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	50.0	NA	2.419 Gbps	0 bps	0 bps	0 bps	0 bps	0	0 / 0	FAILED	0 Mbps	0 bps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	55.0	NA	2.401 Gbps	0 bps	0 bps	0 bps	0 bps	0	2 / 0	FAILED	0 Mbps	0 bps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	0	NA	1.806 Gbps	1.798 Gbps	1.806 Gbps	1.876 Gbps	1.761 Gbps	-33	0 / 4650269	0	2401.9 Mbps	2.402 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	5.0	NA	1.714 Gbps	1.702 Gbps	1.709 Gbps	1.775 Gbps	1.731 Gbps	-39	0 / 4452204	0	2401.9 Mbps	2.402 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	10.0	NA	1.496 Gbps	1.486 Gbps	1.49 Gbps	1.547 Gbps	1.455 Gbps	-44	0 / 3696980	0	2161.3 Mbps	1.921 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	15.0	NA	1.339 Gbps	1.332 Gbps	1.334 Gbps	1.386 Gbps	1.366 Gbps	-49	0 / 3467669	0	1729.6 Mbps	1.73 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	20.0	NA	975.642 Mbps	967.408 Mbps	968.231 Mbps	1.006 Gbps	984.037 Mbps	-54	0 / 2408364	0	1441.3 Mbps	1.254 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	25.0	NA	682.505 Mbps	682.032 Mbps	682.27 Mbps	708.662 Mbps	695.814 Mbps	-59	0 / 1824789	0	864.6 Mbps	864.6 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	30.0	NA	442.385 Mbps	442.208 Mbps	442.4 Mbps	459.529 Mbps	440.165 Mbps	-64	0 / 1185214	0	576.4 Mbps	592.1 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	35.0	NA	116.189 Mbps	116.183 Mbps	116.202 Mbps	120.686 Mbps	114.6 Mbps	-68	0 / 317232	0	288.2 Mbps	144.1 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	40.0	NA	57.392 Mbps	49.47 Mbps	49.86 Mbps	51.778 Mbps	48.824 Mbps	-71	0 / 131177	0	144.1 Mbps	72 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	45.0	NA	0 bps	0	0 / 258	0	0 Mbps	0 bps	802.11a-AX	802.11ax				
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	50.0	NA	0 bps	0	0 / 295	0	0 Mbps	0 bps	802.11a-AX	802.11ax				
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	55.0	NA	0 bps	0	0 / 255	0	0 Mbps	0 bps	802.11a-AX	802.11ax				
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	0	NA	1.627 Gbps	1.617 Gbps	1.619 Gbps	1.681 Gbps	1.617 Gbps	-34	0 / 93466	0	2401.9 Mbps	2.402 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	5.0	NA	1.609 Gbps	1.59 Gbps	1.602 Gbps	1.663 Gbps	1.619 Gbps	-39	0 / 92123	0	2401.9 Mbps	2.161 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	10.0	NA	1.513 Gbps	1.494 Gbps	1.505 Gbps	1.563 Gbps	1.487 Gbps	-44	0 / 86314	0	2161.3 Mbps	1.921 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	15.0	NA	1.274 Gbps	1.268 Gbps	1.274 Gbps	1.323 Gbps	1.269 Gbps	-50	0 / 73194	0	1729.6 Mbps	1.73 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	20.0	NA	1.009 Gbps	997.441 Mbps	1.001 Gbps	1.039 Gbps	1.004 Gbps	-55	0 / 57586	0	1253.9 Mbps	1.254 Gbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	25.0	NA	691.756 Mbps	689.652 Mbps	691.535 Mbps	717.743 Mbps	692.413 Mbps	-60	0 / 42447	0	864.6 Mbps	864.6 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	30.0	NA	454.701 Mbps	445.702 Mbps	446.77 Mbps	463.706 Mbps	448.725 Mbps	-65	0 / 27467	0	576.4 Mbps	576.4 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	35.0	NA	232.216 Mbps	223.86 Mbps	224.163 Mbps	232.63 Mbps	223.414 Mbps	-68	0 / 12975	0	288.2 Mbps	204.1 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	40.0	NA	114.601 Mbps	107.953 Mbps	108.667 Mbps	112.74 Mbps	109.074 Mbps	-72	0 / 6317	0	144.1 Mbps	68 Mbps	802.11a-AX	802.11ax
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	45.0	NA	0 bps	0	0 / 0	FAILED	0 Mbps	0 bps	802.11a-AX	802.11ax				
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	50.0	NA	0 bps	0	3 / 4	75	0 Mbps	0 bps	802.11a-AX	802.11ax				
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	55.0	NA	0 bps	0	1 / 0	FAILED	0 Mbps	0 bps	802.11a-AX	802.11ax				

CSV data focussed on TX and RX Link Rate and RSSI reports. The values reported are gathered at the end of the test iteration before traffic is stopped. The Phy Rate and RSSI are from the perspective of the Station, so Tx-MCS is MCS at which station is sending to the AP, and Rx-MCS is MCS at which the AP is sending to the station.

Channel	Frequency	Security	NSS	Cfg-Mode	Bandwidth	Pkt	Traffic-Type	Direction	Atten	Tx-Mode-Rpt	Tx-NSS-Rpt	Tx-MCS	Tx-BW-Rpt	Rx-Mode-Rpt	Rx-NSS-Rpt	Rx-MCS	Rx-BW-Rpt	RSSI-dBm	Tx-Phy-Rate	Rx-Phy-Rate
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	0	HE	2	3	160	2	HE	3	160	-34 [-35,-38]	490.0 Mbit/s 160MHz HE-MCS 3 HE-NSS 2 HE-GI 2 HE-DCM 0	2401.9 Mbit/s 160MHz HE-MCS 11 HE-NSS 2 HE-GI 0 HE-DCM 0
																		-39	490.0 Mbit/s 160MHz HE-	2401.9 Mbit/s 160MHz HE-

227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	5.0	HE	2	3	160	2	HE	3	160	I[-40,-43]	MCS 3 HE-NSS 2 HE-GI 2 HE-DCM 0	MCS 11 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	10.0	HE	2	3	160	2	HE	3	160	I[-43,-44,-48]	490.0 MBit/s 160MHz HE- MCS 3 HE-NSS 2 HE-GI 2 HE-DCM 0	1921.5 MBit/s 160MHz HE- MCS 9 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	15.0	HE	2	3	160	2	HE	3	160	I[-48,-50,-52]	490.0 MBit/s 160MHz HE- MCS 3 HE-NSS 2 HE-GI 2 HE-DCM 0	1729.6 MBit/s 160MHz HE- MCS 8 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	20.0	HE	2	3	160	2	HE	3	160	I[-53,-55,-57]	490.0 MBit/s 160MHz HE- MCS 3 HE-NSS 2 HE-GI 2 HE-DCM 0	1441.3 MBit/s 160MHz HE- MCS 7 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	25.0	HE	2	3	160	2	HE	3	160	I[-59,-60,-63]	490.0 MBit/s 160MHz HE- MCS 3 HE-NSS 2 HE-GI 2 HE-DCM 0	864.6 MBit/s 160MHz HE- MCS 4 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	30.0	HE	2	4	160	1	HE	4	160	I[-64,-65,-68]	734.9 MBit/s 160MHz HE- MCS 4 HE-NSS 2 HE-GI 2 HE-DCM 0	408.3 MBit/s 160MHz HE- MCS 4 HE-NSS 1 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	35.0	HE	2	4	160	1	HE	4	160	I[-68,-70,-72]	734.9 MBit/s 160MHz HE- MCS 4 HE-NSS 2 HE-GI 2 HE-DCM 0	432.3 MBit/s 160MHz HE- MCS 4 HE-NSS 1 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	40.0	HE	2	4	160	2	HE	4	80	I[-71,-73,-75]	734.9 MBit/s 160MHz HE- MCS 4 HE-NSS 2 HE-GI 2 HE-DCM 0	68.0 MBit/s 80MHz HE- MCS 0 HE-NSS 2 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-TX	45.0	HE	1	3	20	2	HE	3	160	I[-34,-35,-38]	29.2 MBit/s HE- MCS 3 HE-NSS 1 HE-GI 2 HE-DCM 0	1814.8 MBit/s 160MHz HE- MCS 9 HE-NSS 2 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	5.0	HE	1	3	20	2	HE	3	160	I[-39,-40,-43]	29.2 MBit/s HE- MCS 3 HE-NSS 1 HE-GI 2 HE-DCM 0	1921.5 MBit/s 160MHz HE- MCS 9 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	10.0	HE	2	10	160	2	HE	10	160	I[-44,-45,-48]	2161.3 MBit/s 160MHz HE- MCS 10 HE-NSS 2 HE-GI 0 HE-DCM 0	1921.5 MBit/s 160MHz HE- MCS 9 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	15.0	HE	2	8	160	1	OFDM	8	20	I[-57,-58,-63]	1729.6 MBit/s 160MHz HE- MCS 8 HE-NSS 2 HE-GI 0 HE-DCM 0	6.0 MBit/s
																		I[-44,-45,-48]	1441.3 MBit/s 160MHz	1361.2 MBit/s 160MHz

227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	20.0	HE	2	7	160	2	HE	7	160	-54 [-55,-58]	HE-MCS 7 HE-NSS 2 HE-GI 0 HE-DCM 0	HE-MCS 7 HE-NSS 2 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	25.0	HE	2	4	160	2	HE	4	160	-59 [-61,-63]	864.6 MBit/s 160MHz HE-MCS 4 HE-NSS 2 HE-GI 0 HE-DCM 0	816.6 MBit/s 160MHz HE-MCS 4 HE-NSS 2 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	30.0	HE	2	3	160	2	HE	3	160	-64 [-66,-68]	576.4 MBit/s 160MHz HE-MCS 3 HE-NSS 2 HE-GI 0 HE-DCM 0	864.6 MBit/s 160MHz HE-MCS 4 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	35.0	HE	2	1	160	1	HE	1	160	-68 [-70,-72]	288.2 MBit/s 160MHz HE-MCS 1 HE-NSS 2 HE-GI 0 HE-DCM 0	544.3 MBit/s 160MHz HE-MCS 5 HE-NSS 1 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	UDP	DUT-RX	40.0	HE	2	0	160	1	HE	0	80	-72 [-73,-76]	144.1 MBit/s 160MHz HE-MCS 0 HE-NSS 2 HE-GI 0 HE-DCM 0	68.0 MBit/s 80MHz HE-MCS 1 HE-NSS 1 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	0	HE	2	11	160	2	HE	11	160	-34 [-35,-38]	2401.9 MBit/s 160MHz HE-MCS 11 HE-NSS 2 HE-GI 0 HE-DCM 0	2401.9 MBit/s 160MHz HE-MCS 11 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	5.0	HE	2	11	160	2	HE	11	160	-39 [-40,-43]	2401.9 MBit/s 160MHz HE-MCS 11 HE-NSS 2 HE-GI 0 HE-DCM 0	2401.9 MBit/s 160MHz HE-MCS 11 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	10.0	HE	2	10	160	2	HE	10	160	-44 [-46,-48]	2161.3 MBit/s 160MHz HE-MCS 10 HE-NSS 2 HE-GI 0 HE-DCM 0	2401.9 MBit/s 160MHz HE-MCS 9 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	15.0	HE	2	8	160	2	HE	8	160	-50 [-52,-53]	1729.6 MBit/s 160MHz HE-MCS 8 HE-NSS 2 HE-GI 0 HE-DCM 0	1729.6 MBit/s 160MHz HE-MCS 8 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	20.0	HE	2	7	160	2	HE	7	160	-55 [-57,-58]	1441.3 MBit/s 160MHz HE-MCS 7 HE-NSS 2 HE-GI 0 HE-DCM 0	816.6 MBit/s 160MHz HE-MCS 4 HE-NSS 2 HE-GI 1 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	25.0	HE	2	4	160	2	HE	4	160	-60 [-63,-63]	864.6 MBit/s 160MHz HE-MCS 4 HE-NSS 2 HE-GI 0 HE-DCM 0	864.6 MBit/s 160MHz HE-MCS 4 HE-NSS 2 HE-GI 0 HE-DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	30.0	HE	2	3	160	1	HE	3	160	-64 [-67,-67]	576.4 MBit/s 160MHz HE-MCS 3 HE-NSS 2 HE-GI 0 HE-DCM 0	576.4 MBit/s 160MHz HE-MCS 6 HE-NSS 1 HE-GI 0 HE-DCM 0
																		288.2	144.1	

227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	35.0	HE	2	1	160	2	HE	1	80	-69 [-72, -72]	MBit/s 160MHz HE- MCS 1 HE-NSS 2 HE-GI 0 HE- DCM 0	MBit/s 80MHz HE- MCS 1 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-TX	40.0	HE	1	1	160	1	HE	1	80	-71 [-74, -74]	144.1 MBit/s 160MHz HE- MCS 1 HE-NSS 1 HE-GI 0 HE- DCM 0	72.0 MBit/s 80MHz HE- MCS 1 HE-NSS 1 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	0	HE	2	11	160	2	HE	11	160	-35 [-37, -39]	2401.9 MBit/s 160MHz HE- MCS 11 HE-NSS 2 HE-GI 0 HE- DCM 0	2401.9 MBit/s 160MHz HE- MCS 11 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	5.0	HE	2	11	160	2	HE	11	160	-40 [-42, -44]	2401.9 MBit/s 160MHz HE- MCS 11 HE-NSS 2 HE-GI 0 HE- DCM 0	2161.3 MBit/s 160MHz HE- MCS 10 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	10.0	HE	2	10	160	2	HE	10	160	-45 [-47, -48]	2161.3 MBit/s 160MHz HE- MCS 10 HE-NSS 2 HE-GI 0 HE- DCM 0	1921.5 MBit/s 160MHz HE- MCS 9 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	15.0	HE	2	8	160	2	HE	8	160	-50 [-53, -53]	1729.6 MBit/s 160MHz HE- MCS 8 HE-NSS 2 HE-GI 0 HE- DCM 0	1729.6 MBit/s 160MHz HE- MCS 8 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	20.0	HE	2	6	160	2	HE	6	160	-56 [-58, -59]	1253.9 MBit/s 160MHz HE- MCS 6 HE-NSS 2 HE-GI 0 HE- DCM 0	1253.9 MBit/s 160MHz HE- MCS 6 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	25.0	HE	2	4	160	2	HE	4	160	-61 [-63, -64]	864.6 MBit/s 160MHz HE- MCS 4 HE-NSS 2 HE-GI 0 HE- DCM 0	864.6 MBit/s 160MHz HE- MCS 4 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	30.0	HE	2	3	160	1	HE	3	160	-65 [-67, -68]	576.4 MBit/s 160MHz HE- MCS 3 HE-NSS 2 HE-GI 0 HE- DCM 0	576.4 MBit/s 160MHz HE- MCS 3 HE-NSS 2 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	35.0	HE	2	1	160	1	HE	1	160	-69 [-72, -72]	288.2 MBit/s 160MHz HE- MCS 1 HE-NSS 2 HE-GI 0 HE- DCM 0	432.3 MBit/s 160MHz HE- MCS 4 HE-NSS 1 HE-GI 0 HE- DCM 0
227	6135	WPA3	2	AUTO	160	MTU	TCP	DUT-RX	40.0	HE	1	1	160	1	HE	1	80	-72 [-75, -74]	144.1 MBit/s 160MHz HE- MCS 1 HE-NSS 1 HE-GI 0 HE- DCM 0	72.0 MBit/s 80MHz HE- MCS 1 HE-NSS 1 HE-GI 0 HE- DCM 0

Brief csv report, may be imported into third-party tools.

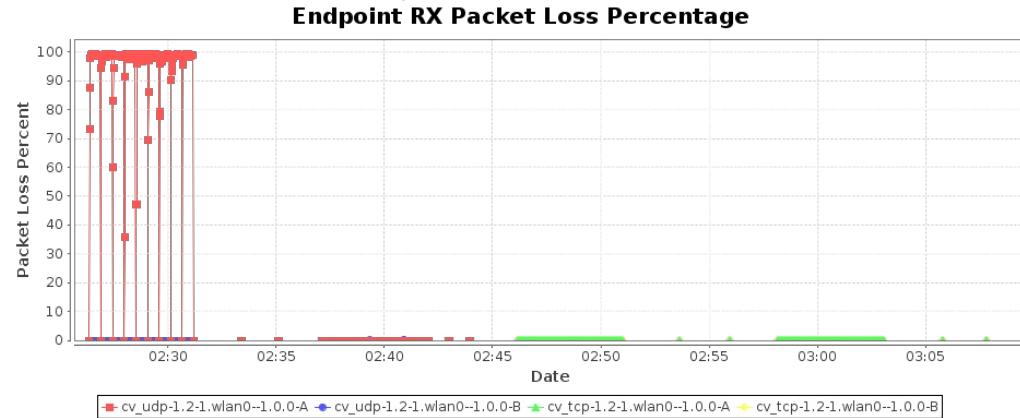
Step Index	Position [Deg]	Attenuation [dB]	Throughput [Mbps]	Beacon RSSI [dBm]	Data RSSI [dBm]
0	NA	0	2,057.35	-42	-34

1	NA	5.00	2,047.04	-47	-39
2	NA	10.00	1,676.21	-52	-43
3	NA	15.00	1,542.70	-57	-48
4	NA	20.00	1,270.44	-62	-53
5	NA	25.00	767.95	-66	-58
6	NA	30.00	488.55	-70	-63
7	NA	35.00	196.14	-72	-67
8	NA	40.00	71.34	-72	-71
9	NA	45.00	0	0	0
10	NA	50.00	0	0	0
11	NA	55.00	0	0	0
12	NA	0	1,465.51	-41	-48
13	NA	5.00	1,474.33	-47	-40
14	NA	10.00	1,389.16	-51	-44
15	NA	15.00	1,163.87	-57	-50
16	NA	20.00	1,024.69	-62	-53
17	NA	25.00	681.16	-67	-59
18	NA	30.00	464.99	-70	-63
19	NA	35.00	244.07	-72	-68
20	NA	40.00	119.31	-73	-71
21	NA	45.00	0	0	0
22	NA	50.00	0	0	0
23	NA	55.00	0	0	0
24	NA	0	1,797.67	-42	-33
25	NA	5.00	1,702.33	-48	-39
26	NA	10.00	1,486.44	-53	-44
27	NA	15.00	1,331.98	-58	-49
28	NA	20.00	967.41	-63	-54
29	NA	25.00	682.03	-67	-59
30	NA	30.00	442.21	-70	-64
31	NA	35.00	116.18	-72	-68
32	NA	40.00	49.47	-72	-71
33	NA	45.00	0	0	0
34	NA	50.00	0	0	0
35	NA	55.00	0	0	0
36	NA	0	1,617.46	-43	-34
37	NA	5.00	1,590.37	-49	-39
38	NA	10.00	1,494.45	-53	-44
39	NA	15.00	1,268.27	-58	-50
40	NA	20.00	997.44	-63	-55
41	NA	25.00	689.65	-68	-60

42	NA	30.00	445.70	-71	-65
43	NA	35.00	223.86	-73	-68
44	NA	40.00	107.95	-73	-72
45	NA	45.00	0	0	0
46	NA	50.00	0	0	0
47	NA	55.00	0	0	0

Packet Loss Percentage graph shows the percentage of lost packets as detected by the receiving endpoint due to packet gaps. If there is full packet loss, then this will not report any loss since there will be no gap to detect. TCP protocol tests will never show drops since the TCP protocol will retransmit any lost frames.

[CSV Data for Endpoint RX Packet Loss Percentage](#)



Test configuration and LANforge software version	
AP Tx Power:	0
Path Loss	10
Requested Speed	100%
Requested Opposite Speed	0Kbps
Multi-Conn	1
Armageddon Multi-Pkt	1000
ToS	0
Station Bringup Wait:	1 min (1 m)
First Byte Wait:	30 sec (30 s)
Duration:	30 sec (30 s)
Settle Time:	1 sec (1 s)
Send Buffer Size:	OS Default
Receive Buffer Size:	OS Default
RvR Helper Script:	
Channels	AUTO
Spatial Streams	AUTO
Bandwidth	AUTO
Attenuator-1	1.1.1031
Attenuation-1	0..+50..800
Attenuator-2	0
Attenuation-2	0..+50..950

Turntable Chamber	0
Turntable Angles	0..+45..359
Modes	Auto
Packet Size	MTU
Security	AUTO
Traffic Type	UDP, TCP
Direction	DUT Transmit, DUT Receive
Upstream Port	1.1.2 eth2 Firmware: 0x80000aef, 1.1876.0 Resource: ct523c-c3d8
WiFi Port	1.1.16 wlan0 Resource: ct523c-c3d8
Continuous Traffic	false
Outer Loop is Attenuation	false
Show Events	true
Auto Save Report	false
Pass-Fail Tput Criteria	
Build Date	Fri 20 May 2022 09:36:36 PM PDT
Build Version	5.4.5
Git Version	b98d1c2ca17aea46b035480e1fafaf9ec0f1fed1d

[Key Performance Indicators CSV](#)

[META Information for Rate vs Range Test](#)

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