Dual-Band Throughput Test

AP Automated Test Plan

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Test Setup Information	
Device Under Test	Ap-Auto-Test netgear5g Ap-Auto-Test netgear2g
Estimated Run Time	4 m
Actual Run Time	3.151 m

Summary Results

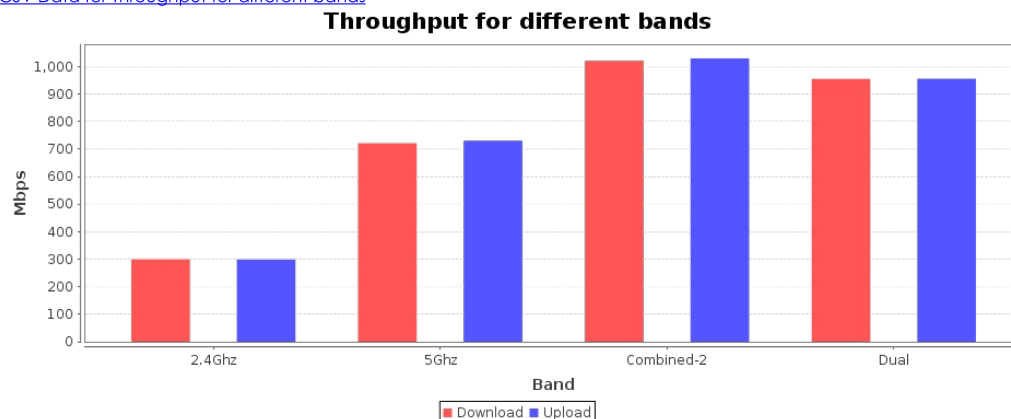| Test	Result	Candela Score	Elapsed	Info
Multi Band Performance	2.4Ghz PASS 5Ghz PASS Dual-Band PASS	103	2.728 m	Dual-Concurrent vs 90% of Sum: 955.67 Mbps / 919.33 Mbps Dual-Concurrent vs 90% of Sum: 956.33 Mbps / 927.24 Mbps

Multi Band Performance

Summary

The Multi Band Performance test intends to verify that the Wi-Fi AP throughput with multiple bands active with a single station on each band. The configured speed will be 20% higher than the passing value for MTU sized frames in the throughpu test. If the throughput test was skipped, then fixed values will be used.

A test is considered passed if the multi-band concurrent throughput is at least 90% of the sum of the individual single-band throughput tests. The score is the percentage of the throughput vs that 90% cut-off.

Throughput for different bands.

CSV Data for Throughput for different bands

Throughput for different bands

Multi Band Performance Results

Type	Result	Notes
2.4Ghz Download	PASS	299.71 Mbps PER: 0
5Ghz Download	PASS	721.77 Mbps PER: 11.13
Dual Download	PASS	955.67 Mbps PER: 0 Dual-Concurrent vs 90% of Sum: 955.67 Mbps / 919.33 Mbps
2.4Ghz Upload	PASS	299.35 Mbps PER: 0
5Ghz Upload	PASS	730.92 Mbps PER: 0
Dual Upload	PASS	956.33 Mbps PER: 0 Dual-Concurrent vs 90% of Sum: 956.33 Mbps / 927.24 Mbps

Throughput Test, 2.4Ghz: Snapshot Download

Port	Tx-Bps 1m	Rx-Bps 1m	Tx-Fail %	Tx Link-Rate	Rx Link-Rate	Mode	Channel	Last CX-Time (ms)	RSSI (dBm)	AP	IP	MAC
1.1.6 wlan0	25.282 Kbps	154.676 Mbps	0	360 Mbps	400 Mbps	802.11bgn-AC 40 2x2	6	53	-35	78:D2:94:4F:21:10	192.168.1.9	04:f0:21:3e:d8:3e

Port	Tx-Bps 1m	Rx-Bps 1m	Link-Rate	IP	MAC
1.1.1 eth1	96.631 Mbps	15.223 Kbps	1 Gbps	192.168.1.2	00:03:2d:3f:7d:01

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Latency (ms)	Round-Trip Latency (ms)	Jitter	Rx Packet Loss %	Rx OOO %
cv_udp-1.1-1.wlan0--1.0.0-A	19.961 Kbps	302.069 Mbps	34	514511	4	10	0	0	0
cv_udp-1.1-1.wlan0--1.0.0-B	300.826 Mbps	20.218 Kbps	505876	34	6	10	4	0	0

Throughput Test, 5Ghz: Snapshot Download

Port	Tx-Bps 1m	Rx-Bps 1m	Tx-Fail %	Tx Link-Rate	Rx Link-Rate	Mode	Channel	Last CX-Time (ms)	RSSI (dBm)	AP	IP	MAC
1.1.7 wlan2	6.553 Kbps	226.856 Mbps	0	780 Mbps	866.7 Mbps	802.11an-AC 80 2x2	36	69	-43	78:D2:94:4F:21:12	192.168.1.15	04:f0:21:3a:5a:b6

Port	Tx-Bps 1m	Rx-Bps 1m	Link-Rate	IP	MAC
1.1.1 eth1	278.474 Mbps	18.427 Kbps	1 Gbps	192.168.1.2	00:03:2d:3f:7d:01

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Latency (ms)	Round-Trip Latency (ms)	Jitter	Rx Packet Loss %	Rx OOO %
cv_udp-1.1-1.wlan2--1.0.0-A	19.959 Kbps	727.524 Mbps	34	1239268	95	100	0	21.856	0
cv_udp-1.1-1.wlan2--1.0.0-B	967.166 Mbps	20.125 Kbps	1585870	33	5	100	3	0	0

Throughput Test, Dual: Snapshot Download

Port	Tx-Bps 1m	Rx-Bps 1m	Tx-Fail %	Tx Link-Rate	Rx Link-Rate	Mode	Channel	Last CX-Time (ms)	RSSI (dBm)	AP	IP	MAC
1.1.6 wlan0	19.887 Kbps	160.955 Mbps	0	360 Mbps	400 Mbps	802.11bgn-AC 40 2x2	6	53	-37	78:D2:94:4F:21:10	192.168.1.9	04:f0:21:3e:d8:3e
1.1.7 wlan2	17.789 Kbps	348.17 Mbps	0	866.7 Mbps	866.7 Mbps	802.11an-AC 80 2x2	36	69	-42	78:D2:94:4F:21:12	192.168.1.15	04:f0:21:3a:5a:b6

Port	Tx-Bps 1m	Rx-Bps 1m	Link-Rate	IP	MAC
1.1.1 eth1	719.976 Mbps	44.302 Kbps	1 Gbps	192.168.1.2	00:03:2d:3f:7d:01

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Latency	Round-Trip Latency	Jitter	Rx Packet Loss	Rx OOO

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Latency (ms)	Round-Trip Latency (ms)	Jitter	Rx Packet Loss %	Rx OOO %
cv_udp-1.1-1.wlan0--1.0.0-A	19.782 Kbps	299.824 Mbps	34	515293	3	7	0	0	0
cv_udp-1.1-1.wlan0--1.0.0-B	301.665 Mbps	20.248 Kbps	491636	33	4	7	2	0	0
cv_udp-1.1-1.wlan2--1.0.0-A	19.758 Kbps	655.896 Mbps	34	1128697	34	37	0	0	0
cv_udp-1.1-1.wlan2--1.0.0-B	667.206 Mbps	19.526 Kbps	1093400	32	3	37	1	0	0

Throughput Test, 2.4Ghz: Snapshot Upload

Port	Tx-Bps 1m	Rx-Bps 1m	Tx-Fail %	Tx Link-Rate	Rx Link-Rate	Mode	Channel	Last CX-Time (ms)	RSSI (dBm)	AP	IP	MAC
1.1.6 wlan0	58.78 Mbps	131.249 Mbps	0.003	360 Mbps	400 Mbps	802.11bgn-AC 40 2x2	6	53	-23	78:D2:94:4F:21:10	192.168.1.9	04:f0:21:3e:d8:3e

Port	Tx-Bps 1m	Rx-Bps 1m	Link-Rate	IP	MAC
1.1.1 eth1	548.343 Mbps	72.612 Mbps	1 Gbps	192.168.1.2	00:03:2d:3f:7d:01

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Latency (ms)	Round-Trip Latency (ms)	Jitter	Rx Packet Loss %	Rx OOO %
cv_udp-1.1-1.wlan0--1.0.0-A	301.334 Mbps	0 bps	515277	0	0	3	0	0	0
cv_udp-1.1-1.wlan0--1.0.0-B	0 bps	300.798 Mbps	0	505085	3	3	0	0	0.002

Throughput Test, 5Ghz: Snapshot Upload

Port	Tx-Bps 1m	Rx-Bps 1m	Tx-Fail %	Tx Link-Rate	Rx Link-Rate	Mode	Channel	Last CX-Time (ms)	RSSI (dBm)	AP	IP	MAC
1.1.7 wlan2	217.297 Mbps	266.105 Mbps	0	866.7 Mbps	866.7 Mbps	802.11an-AC 80 2x2	36	69	-37	78:D2:94:4F:21:12	192.168.1.15	04:f0:21:3a:5a:b6

Port	Tx-Bps 1m	Rx-Bps 1m	Link-Rate	IP	MAC
1.1.1 eth1	443.382 Mbps	200.171 Mbps	1 Gbps	192.168.1.2	00:03:2d:3f:7d:01

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Latency (ms)	Round-Trip Latency (ms)	Jitter	Rx Packet Loss %	Rx OOO %
cv_udp-1.1-1.wlan2--1.0.0-A	731.938 Mbps	0 bps	1253340	0	0	29	0	0	0
cv_udp-1.1-1.wlan2--1.0.0-B	0 bps	732.994 Mbps	0	1216726	29	29	0	0	0.962

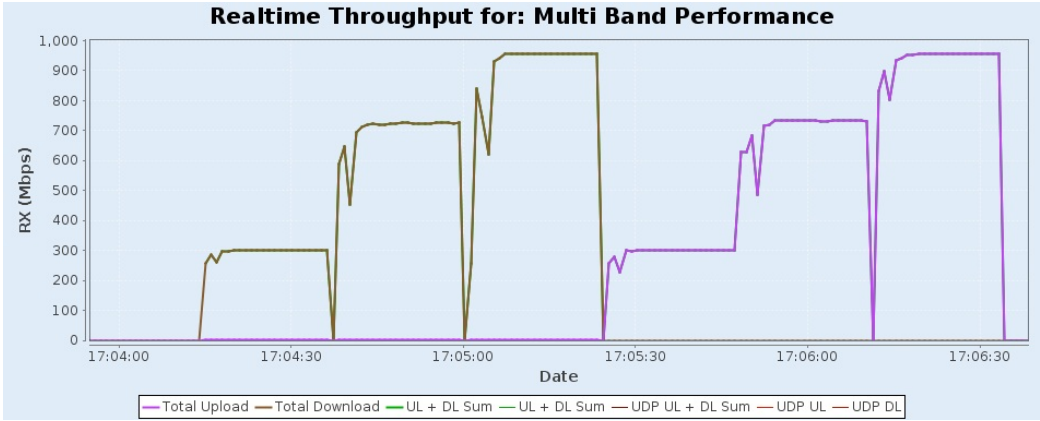## Throughput Test, Dual: Snapshot Upload

Port	Tx-Bps 1m	Rx-Bps 1m	Tx-Fail %	Tx Link-Rate	Rx Link-Rate	Mode	Channel	Last CX-Time (ms)	RSSI (dBm)	AP	IP	MAC
1.1.6 wlan0	145.302 Mbps	80.417 Mbps	0.006	360 Mbps	400 Mbps	802.11bgn-AC 40 2x2	6	53	-24	78:D2:94:4F:21:10	192.168.1.9	04:f0:21:3e:d8:3e
1.1.7 wlan2	341.21 Mbps	204.766 Mbps	0.001	866.7 Mbps	866.7 Mbps	802.11an-AC 80 2x2	36	69	-37	78:D2:94:4F:21:12	192.168.1.15	04:f0:21:3a:5a:b6

Port	Tx-Bps 1m	Rx-Bps 1m	Link-Rate	IP	MAC
1.1.1 eth1	160.767 Mbps	561.212 Mbps	1 Gbps	192.168.1.2	00:03:2d:3f:7d:01

Endpoint	Tx-Bps 1m	Rx-Bps 1m	TxPkts	RxPkts	RX Latency (ms)	Round-Trip Latency (ms)	Jitter	Rx Packet Loss %	Rx OOO %
cv_udp-1.1-1.wlan0--1.0.0-A	300.123 Mbps	0 bps	514615	0	0	16	0	0	0
cv_udp-1.1-1.wlan0--1.0.0-B	0 bps	279.599 Mbps	0	475240	16	16	0	7.032	0.004
cv_udp-1.1-1.wlan2--1.0.0-A	730.204 Mbps	0 bps	1254660	0	0	41	0	0	0
cv_udp-1.1-1.wlan2--1.0.0-B	0 bps	680.196 Mbps	0	1129524	41	41	0	6.476	0.838

Realtime Throughput for: Multi Band Performance

[Key Performance Indicators CSV](#)

Test configuration and LANforge software version	
Auto-Helper	true
Skip 2.4Ghz Tests	false
Skip 5Ghz Tests	false
Skip 5Gzh-B Tests	true
Skip Dual-Band Tests	false
Skip Tri-Band Tests	true
Use BSSID	true
Set Radio TxPower to Default	false
Loop Iterations:	1
2.4Ghz Station Count:	64
5Ghz Station Count:	64
Dual-Band Station Count:	64
5Ghz-B Station Count:	64
Tri-Band Station Count:	64
Duration-20	20
Hunt Retries:	1
Maximum Hunt Iterations:	100
Multi-Conn	1
ToS	0
Upstream Port	1.1.1 eth1 Firmware: 0. 0-0 Resource: LF-Lecturehall
Stability Duration:	1 h
Concurrent Ports to Reset:	1
Minimum Time between Resets:	10000
Maximum Time between Resets:	60000
Long-Term Station Count:	2
VOIP Call Count:	20

Percent:	1000000
Open:	25
PSK:	60
Enterprise:	120
Stability stall threshold UDP Upload:	100000
Stability stall threshold UDP Download:	100000
Stability stall threshold TCP Upload:	100000
Stability stall threshold TCP Download:	100000
Stability stall threshold Video:	100000
Stability stall threshold VOIP:	20000
Stability Helper Script:	
Stability Multicast Min Download Rate:	100000
Stability Multicast Max Download Rate:	0
Stability UDP Min Download Rate:	500000
Stability UDP Max Download Rate:	0
Stability UDP Min Upload Rate:	500000
Stability UDP Max Upload Rate:	0
Stability TCP Min Download Rate:	500000
Stability TCP Max Download Rate:	0
Stability TCP Min Upload Rate:	500000
Stability TCP Max Upload Rate:	0
2.4Ghz Legacy%	0
2.4Ghz N%	0
2.4Ghz AC%	0
2.4Ghz AX/AUTO%	100
5Ghz Legacy%	0
5Ghz N%	0
5Ghz AC%	0
5Ghz AX/AUTO%	100
Long-Term Duration:	1 h
Long-Term Graph Interval:	30
Long-Term Download Rate:	85%
Video Emulation Rate:	700000
Video Buffer Size:	1000000
Long-Term Upload Rate:	85%
Use Packet Sizes	false

Reset Radios	false
Use Packet Sizes	false
Always expect 5g	false
Spatial Streams	AUTO
Bandwidth	AUTO
Modes	Auto
WiFi Radio 0	1.1.2 wiphy0 Firmware: 10.1-ct-8x-__xtH-023-1d83261a Resource: LF-Lecturehall
WiFi Radio 0	1.1.3 wiphy2 Firmware: 10.4b-ct-9984-xtH-13-b1b524c8e5 Resource: LF-Lecturehall
Pass-Fail Tput Criteria	
Show Events	true
Build Date	Thu 07 Jul 2022 08:57:05 AM PDT
Build Version	5.4.5
Git Version	69186323529a921fdcb254a9168f9e613a5a4350

CSV Data

META Information for Dual-Band Throughput Test

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