

Dataplane Test



Wed Jun 05 10:30:07 PDT 2019

Test Setup Information		
Device Under Test	Name	jw3
	Hardware Version	compex 3x3, 2x2, wave1
	SSIDs	jw3-0 jw3-1
	BSSIDs	04:f0:21:7b:37:2a 04:f0:21:f2:ea:bd
	Notes	[BLANK]
Operator	Ben Greear @ Candela Technologies	

Objective

The Candela WiFi data plane test is designed to conduct an automatic testing of all combinations of station types, MIMO types, Channel Bandwidths, Traffic types, Traffic direction, Frame sizes etc... It will run a quick throughput test at every combination of these test variables and plot all the results in a set of charts to compare performance. The user is allowed to define an intended load as a percentage of the max theoretical PHY rate for every test combination. The expected behavior is that for every test combination the achieved throughput should be at least 70% of the theoretical max PHY rate under ideal test conditions. This test provides a way to go through hundreds of combinations in a fully automated fashion and very easily find patterns and problem areas which can be further debugged using more specific testing.

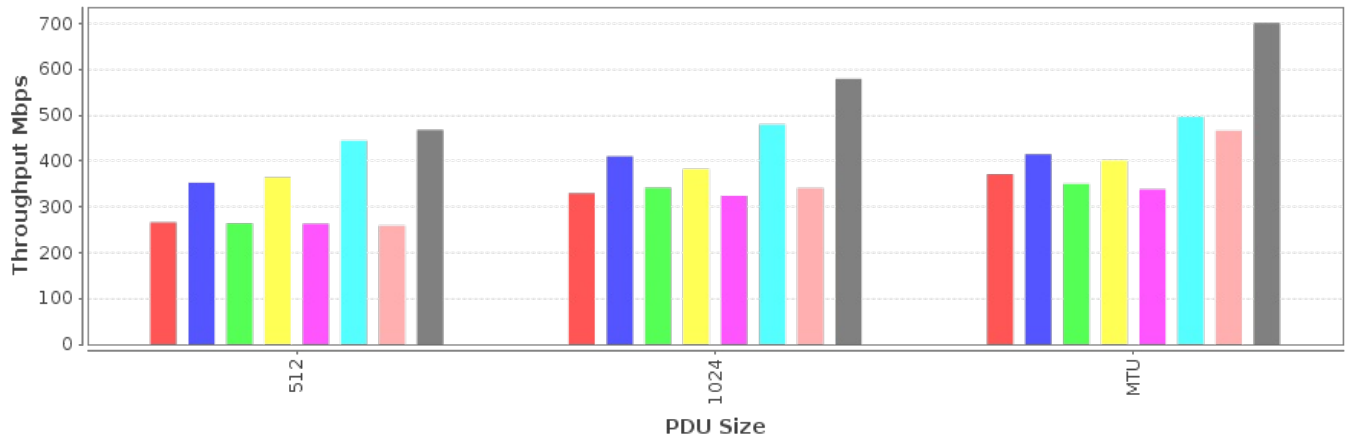
Add your notes below:

OTA test, APs open-auth, bridge mode, about 10 feet from LANforge test device, modestly busy RF environment, channel 36.
LANforge Station is 4x4 9984 radio.

Run 1: AP is 3x3 wave-1 9880 vendor C
Run 2: AP is 2x2 wave-1 9882 vendor C
Run 3: AP is 3x3 wave-1 9880 vendor X
Run 4: AP is 4x4 wave-2 9984 vendor C

Throughput by MTU, for each different traffic type.

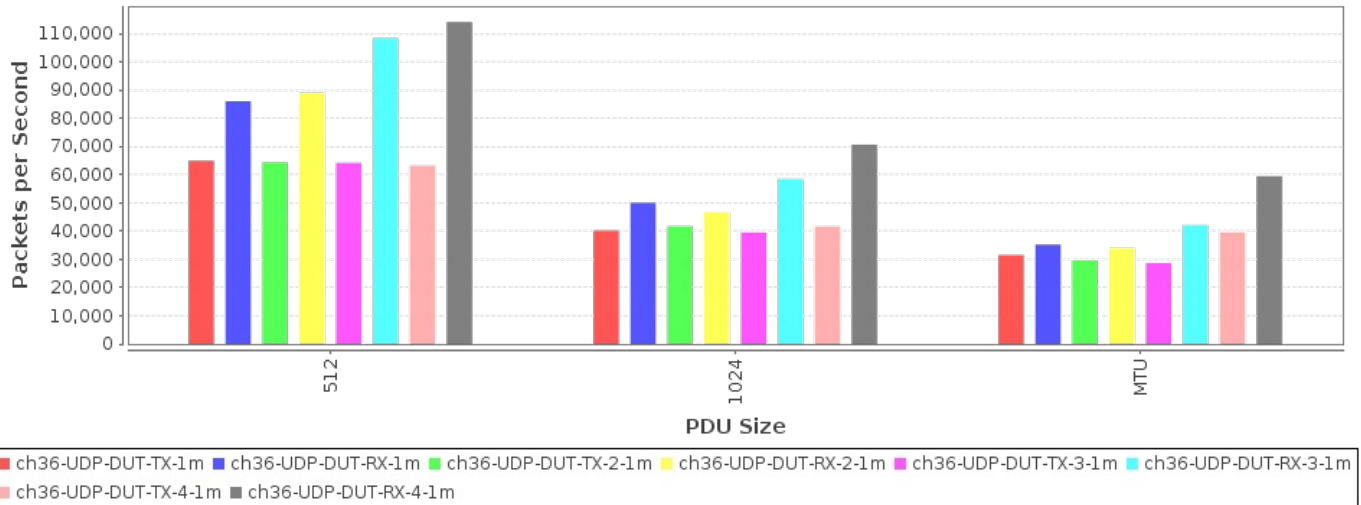
Throughput vs PDU Size



■ ch36-UDP-DUT-TX-1m
 ■ ch36-UDP-DUT-RX-1m
 ■ ch36-UDP-DUT-TX-2-1m
 ■ ch36-UDP-DUT-RX-2-1m
 ■ ch36-UDP-DUT-TX-3-1m
 ■ ch36-UDP-DUT-RX-3-1m
 ■ ch36-UDP-DUT-TX-4-1m
 ■ ch36-UDP-DUT-RX-4-1m

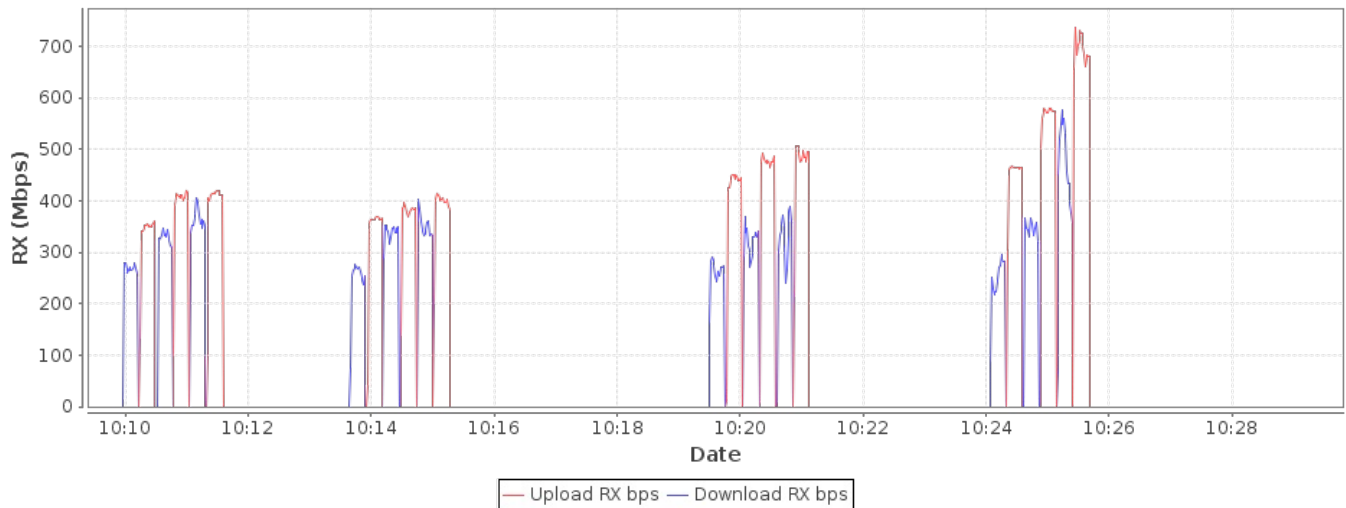
Pps throughput by MTU, for each different traffic type. The values are estimated packets-per-second over the DUT, but some protocols such as TCP make this difficult to know for certain, so the value is extrapolated.

RX Pps vs PDU Size



Realtime Graph shows summary download and upload RX bps of connections created by this test.

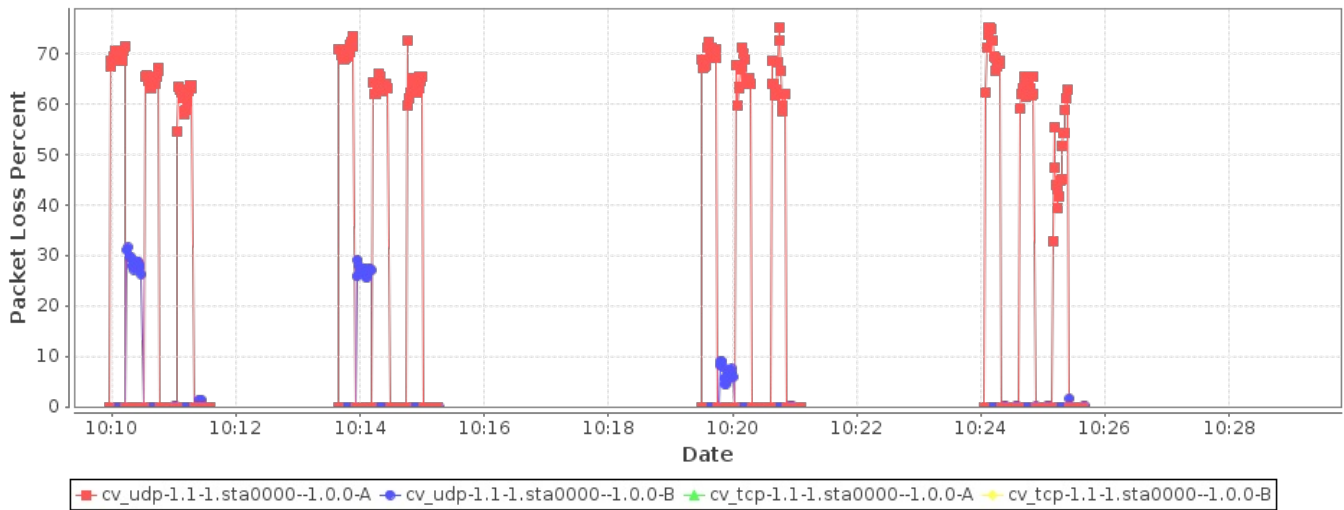
Realtime Throughput



Channel	Security	NSS	Mode	Bandwidth	PDU	Traffic-Type	Direction	Atten	Duration	Offered-1m	Rx-Bps	Rx-Bps-1m	Rx-Bps-3s	Theoretical	RSSI	Tx-Failed	Tx-Failed%	Tx-Rate	Rx-Rate	Mode
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-TX	NA	15	885626350	265801780	266050093	254716384	1733200000	-49	0 / 5	0	585 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-RX	NA	15	490665556	351046342	352438474	359566250	1733200000	-40	0 / 1755356	0	405 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-TX	NA	15	943212241	327326988	329651027	311457808	1733200000	-47	0 / 0	FAILED	650 Mbps	526.5 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-RX	NA	15	408471202	409027528	410044172	400786272	1733200000	-41	60 / 752482	0.008	780 Mbps	526.5 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-TX	NA	15	967775407	368112631	371049337	362952157	1733200000	-49	0 / 0	FAILED	780 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-RX	NA	15	416081613	414591234	414598144	411142997	1733200000	-41	0 / 531851	0	650 Mbps	351 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-TX	NA	15	888360777	262913679	263854761	268817488	1733200000	-52	0 / 6	0	390 Mbps	526.6 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-RX	NA	15	499146893	364448096	364472393	363214786	1733200000	-40	0 / 1779076	0	650 Mbps	351 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-TX	NA	15	945386274	340269648	341916415	345842256	1733200000	-51	0 / 1	0	650 Mbps	526.6 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-RX	NA	15	383848789	381641308	382424193	385046021	1733200000	-40	0 / 675040	0	650 Mbps	526.6 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-TX	NA	15	962268106	348550032	349961543	332658157	1733200000	-50	0 / 1	0	650 Mbps	468 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-RX	NA	15	403034759	400057539	401191123	382328781	1733200000	-40	0 / 501490	0	650 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-TX	NA	15	893620315	262294259	263081407	249541552	1733200000	-45	0 / 6	0	585 Mbps	364.5 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-RX	NA	15	474954401	441065386	444279004	433022370	1733200000	-41	0 / 1727439	0	450 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-TX	NA	15	949205111	323568681	323979054	354227130	1733200000	-48	0 / 1	0	975 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-RX	NA	15	478826272	479146138	479774208	487846112	1733200000	-39	0 / 864321	0	450 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-TX	NA	15	966058140	335952039	338098602	340158170	1733200000	-48	0 / 1	0	975 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-RX	NA	15	496983214	493252588	496471377	501157485	1733200000	-40	42 / 639651	0.007	540 Mbps	702 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-TX	NA	15	890641329	257519774	258887308	277032917	1733200000	-50	0 / 3	0	780 Mbps	585.1 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	512	UDP	DUT-RX	NA	15	467518253	464827589	467546847	465111829	1733200000	-44	114 / 1629584	0.007	1170.2 Mbps	585.1 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-TX	NA	15	942983900	340473151	341098498	314200434	1733200000	-50	0 / 1	0	1300 Mbps	520 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	1024	UDP	DUT-RX	NA	15	580171777	575741588	579211355	573725128	1733200000	-44	174 / 1001826	0.017	1170.2 Mbps	585 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-TX	NA	15	965363329	463133437	466022779	360631101	1733200000	-51	0 / 0	FAILED	1170.2 Mbps	520 Mbps	802.11an-AC
36	AUTO	AUTO	AUTO	AUTO	MTU	UDP	DUT-RX	NA	15	703039757	696712985	700910899	681496429	1733200000	-44	42 / 872711	0.005	1040 Mbps	526.6 Mbps	802.11an-AC

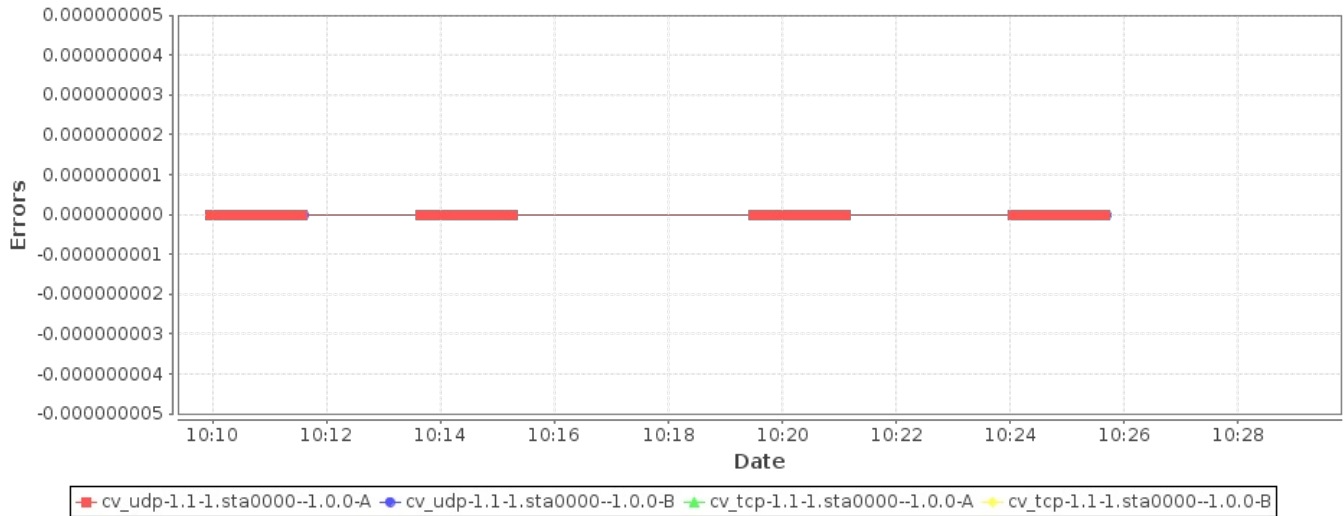
Packet Loss Percentage graph shows the percentage of lost packets as detected by the receiving endpoint due to packet gaps. If there is full packet loss, then this will not report any loss since there will be no gap to detect.

Endpoint RX Packet Loss Percentage



Error Graph shows occurrences of packet errors.

Rx Errors



Test configuration and LANforge software version	
Path Loss	10
Requested Speed	85%
Multi-Conn	10
ToS	64
Duration:	15 sec (15 s)
Upstream Port	1.1.1 eth1 Firmware: 1.63, 0x800009fb Resource: lf0313-6477
WiFi Port	1.1.6 sta0000 Firmware: 10.4b-ct-9984-xtH-012-f6434814c Resource: lf0313-6477
Show Events	true
Build Date	Wed Jun 5 08:41:34 PDT 2019
Build Version	5.3.9