

## Testing AP Throughput with the AP-Auto Automated Test Suite

**Goal**: Run an AP-Auto test for an AP using theLANforge CT523c or similar system in order to test how well the AP can provide throughput in various scenarios. The AP-Auto test is similar to the TR-398 test, but is designed to be functional with a minimum amount of test equipment. A 2-radio LANforge system and DUT is all that is required to run these tests.

In this test scenario, the LANforge CT523 is used to create stations and run a series of Throughput tests. This example assumes you have some experience with Chamber View, and that you have a LANforge system and a DUT AP. The AP and LANforge may be in chambers, but that is not required. This feature requires LANforge version 5.4.2 or higher.



- 1. If you haven't setup or performed AP-Auto tests on your LANforge system, please refer to the AP-Auto Test Suite Setup guide for quick setup.
- 2. Running the AP-Auto Throughput Tests:
  - A. Open the AP-Auto Test window.

Settings Advanced Configuration	Stabi	ility Configuration Mode/NSS/BW Configuration Pass/Fa	ail Co	nfiguration Report Configuration				
		Open DUT		PSK DUT		Enterprise DUT		
Selected DUT 2G:		TR-398_DUT asus-ax11000-2 f0:2f:74:57:db:b0 (1)	•	NA	-	NA	-	
Selected DUT 5G:		TR-398_DUT asus-ax11000-5 f0:2f:74:57:db:b4 (2)	-	NA	-	NA	-	
Selected DUT 5G-B:		NA	-	NA	-	NA	-	
Upstream Port:	~	1.1.3 eth3	-					
2.4Ghz Radios	2	5Ghz Radios		5Ghz-B Radios		Dual-Band Radios		
1.1.4 wiphy0	-	1.1.6 wiphy2	•		-		-	
	-		-		-		-	
	-		-		-		-	
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	-		-		-		-	
	-		-		-		-	
	-		-		-			
Tests to run:		Estimated Test Duration: 20.667 m		1	_			
Basic Client Connectivity		Throughput vs Pkt Size						
Multi Band Performance	_	Capacity						
Stability	3	Band-Steering						
Multi-Station Throughput vs F	Pkt Size	Long-Term						
Test is complete.				<u>S</u> tart	Sk	ip 🔲 Another Iteration 🗌 Pause	<u>C</u> ance	el

- B. In the AP-Auto Settings Tab:
  - A. Select the **DUT 2G** and **DUT 5G** SSIDs. This test requires that Open or PSK SSIDS are filled out.
  - B. Select the LANforge radios to be used in this test. You need at least one 2.4Ghz radio and one 5Ghz radio for full functionality.
  - C. At the bottom, select the Multi Band Performance, Multi-Station Throughput vs Pkt Size, and Throughput vs Pkt Size test checkboxes.
- C. Your Advanced Configuration tab should look similar to the following:

		AP Automated Test (cv-inst-0)								
Settings	Advanced Configuration	Stability Configuration	lity Configuration Mode/NS		Pass/Fail Configuration	Report C	Report Configuration		×	
	L									
	Show Config	Import Cor	nfig							
	Save	DEFAULT								
	Load	DEFAULT	-							
	Delete	DEFAULT	DEFAULT		Auto-Helper					
	IP ToS:	Best Effort (0	)) 🔽	Multi-Conn:	One (1)	-				
	Skip 2.4Ghz Tests	Skip 5Ghz Test	s	Skip Dual-Band T	ests 🛛 Skip 5Gzh-B Te	sts	Skip Tri-B	and Tests		
	✓ Use BSSID	🖌 Set Radio TxPo	✓ Set Radio TxPower to Default							
	Loop Iterations:	Single (1)	-							
	2.4Ghz Station Count:	Small (32)	-	5Ghz Station Count:	Small (32)	-				
	Dual-Band Station Count:	10 (10)	-	5Ghz-B Station Cour	t: Default (64)	-				
	Tri-Band Station Count:	Default (64)	-							
	Duration:	Default (20 sec)	-							
	Long-Term Download Rate:	85%	-	Long-Term Upload R	ate: 85%	-				
	Long-Term Duration:	3600 (1 hr)	-	Long-Term Graph Int	erval: 30 (30 sec)	-				
	Long-Term Station Count:	Two (Default) (2)	-							
	Hunt Retries:	Default (1)	-	Maximum Hunt Itera	tions: 100	-				
	Packet Loss Threshold:	1% (1%)	-					,		
	Frame Sizes:	64, 128, 256, 512	, 1024, MT	U						
E.	Capacity Amounts (stations):	ions): 1, 5, 10, 20, 32								
	Multi-Station Throughput Opt	ions: 🔲 UDP 🗹 TCP 🔽	Download	Upload						
Test is co	omplete.			<u>S</u> tart S	Skip 🗌 Another	Iteration	Pause	e <u>C</u> a	ncel	

- D. You can specify the frame sizes to be evaluated in the throughput hunt tests by changing the **Frame Sizes** field.
- E. You can also change the number of stations that are brought up in the *Multi-Station Throughput vs Pkt Size* test by changing **Capacity Amounts (stations)**. Note that no station amount value may exceed the station count of any enabled test band.

F. When the configuration is complete, click the **Start** button (which will change to **Stop** once start is clicked) to start the test. An interactive report tab will be created and will be updated as the test runs.



- G. You can change the test result verbosity level by adjusting the **Verbosity** slider. Maximizing it will show all generated figures and data. The verbosity also affects the length of the saved report.
- H. At the end of the test, click the **Save HTML** button to save an HTML report and generate the PDF. The PDF file will be linked from the HTML page. You can also click **Save PDF** and the browser will be directed to open the pdf file directly. Please see this example AP-Auto Throughput Report.

Candela Technologies, Inc., 2417 Main Street, Suite 201, Ferndale, WA 98248, USA www.candelatech.com | sales@candelatech.com | +1.360.380.1618