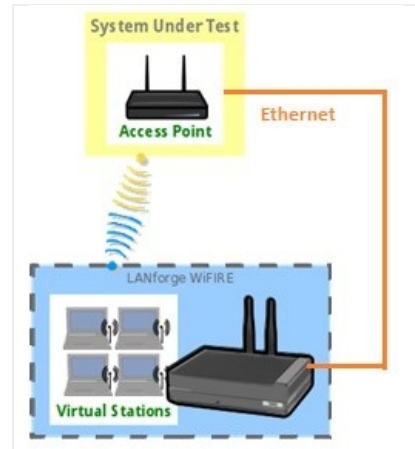


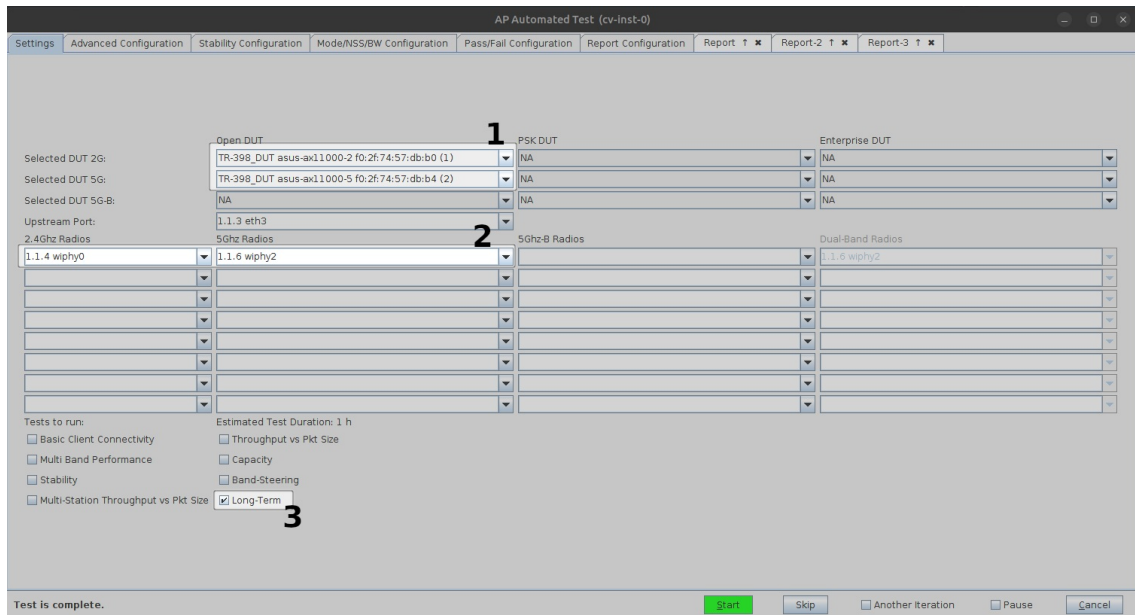
Testing AP Long-Term Performance with the AP-Auto Automated Test Suite

Goal: Run an AP-Auto test for an AP using the LANforge CT523c or similar system in order to test how well the AP can long-term traffic. 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 the Long-Term test. 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 Long-Term Test:
 - A. Open the AP-Auto Test window.



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 **Long-Term** test checkbox.

C. Your Advanced Configuration tab should look similar to the following:

The screenshot shows the 'AP Automated Test (cv-inst-0)' window with the 'Advanced Configuration' tab selected. The interface includes several tabs at the top: Settings, Advanced Configuration, Stability Configuration, Mode/NSS/BW Configuration, Pass/Fail Configuration, and Report Configuration. Below the tabs are buttons for 'Show Config', 'Import Config', 'Save', 'Load', and 'Delete'. The main configuration area contains various settings:

- IP ToS: Best Effort (0)
- Multi-Conn: One (1)
- Checkboxes: Auto-Helper, Skip 2.4Ghz Tests, Skip 5Ghz Tests, Skip Dual-Band Tests, Skip 5Ghz-B Tests, Skip Tri-Band Tests
- Use BSSID, Set Radio TxPower to Default
- Loop Iterations: Single (1)
- 2.4Ghz Station Count: 16, 5Ghz Station Count: 16
- Dual-Band Station Count: 4, 5Ghz-B Station Count: 16
- Tri-Band Station Count: Default (64)
- Duration: Default (20 sec)
- Long-Term Download Rate: 85%**, **Long-Term Upload Rate: 85%**
- Long-Term Duration: 6h**, **Long-Term Graph Interval: 30 (30 sec)**
- Long-Term Station Count: Small (32)**
- Hunt Retries: Default (1), Maximum Hunt Iterations: 100
- Packet Loss Threshold: 1% (1%)
- Frame Sizes: 64, 128, 256, 512, 1024, MTU
- Capacity Amounts (stations): 1, 5, 10, 20, 32
- Multi-Station Throughput Options: UDP, TCP, Download, Upload

At the bottom, there is a status bar that says 'Test is complete.' and buttons for 'Start', 'Skip', 'Another Iteration', 'Pause', and 'Cancel'.

D. Highlighted are the Long-Term test settings. Note, stations are brought up on multiple bands concurrently in this test and so the **Long-Term Station Count** value will determine the sum total of stations across all bands.

- E. 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.

The screenshot shows the 'AP Automated Test (cv-inst-0)' interface. At the top, there are several tabs: Settings, Advanced Configuration, Stability Configuration, Mode/NSS/BW Configuration, Pass/Fail Configuration, Report Configuration, and Report. Below the tabs, there is a log of updates:

Mon Oct 10 14:23:54 PDT 2022	Update	STA-RSSI Data/Beacon: -28/-28 Rx-Rate: 1.089G Tx-Rate: 2.041G
Mon Oct 10 14:28:24 PDT 2022	Update	STA-RSSI Data/Beacon: -43/-34 Rx-Rate: 346.7M Tx-Rate: 208M
Mon Oct 10 14:28:24 PDT 2022	Update	STA-RSSI Data/Beacon: -28/-27 Rx-Rate: 144.1M Tx-Rate: 2.268G

Below the log is a 'Long-Term: Snapshot' table:

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
1.1.12 sta00500	4.357 Mbps	5.144 Mbps	1.042	208 Mbps	346.7 Mbps	802.11bgn-AC 20 4x4	2,422	53	-43	F0:2F:74:57:DB:80	192.168.50.33	04:f0:21:66:a2:c9
1.1.13 sta00501	4.341 Mbps	5.144 Mbps	1.007	156 Mbps	346.7 Mbps	802.11bgn-AC 20 4x4	2,422	76	-43	F0:2F:74:57:DB:80	192.168.50.68	04:f0:21:66:ad:c9
1.1.14 sta00502	4.317 Mbps	5.142 Mbps	1.162	208 Mbps	346.7 Mbps	802.11bgn-AC 20 4x4	2,422	62	-42	F0:2F:74:57:DB:80	192.168.50.15	04:f0:21:66:b1:c9
1.1.15 sta00503	4.337 Mbps	5.141 Mbps	0.923	115.6 Mbps	346.7 Mbps	802.11bgn-AC 20 4x4	2,422	43	-42	F0:2F:74:57:DB:80	192.168.50.56	04:f0:21:66:b7:c9

Below the table is a line graph titled 'Realtime Throughput for: Long-Term'. The y-axis is 'RX (Mbps)' ranging from 0 to 150. The x-axis is 'Date' ranging from 14:23:00 to 14:28:00. The graph shows several data series: Total Upload (purple), Total Download (brown), UL + DL Sum (green), UL + DL Sum (light green), UDP UL + DL Sum (grey), UDP UL (orange), and UDP DL (red). The green lines show high throughput, peaking around 150 Mbps, while the other lines show lower throughput, generally between 25 and 75 Mbps.

At the bottom of the interface, there is a 'Key Performance Indicators' section with a 'Verbosity' slider set to 10. Below the slider are buttons for 'Start', 'Skip', 'Another Iteration', 'Pause', 'Close', 'Save HTML', and 'Save PDF'. A message at the bottom left says 'Test is complete. Consider saving HTML or PDF reports.'

- F. You can change the test result verbosity level by adjusting the **Verbosity** slider. Maximizing it will show all generated figures and data. The verbosity level also affects the length of the saved report.
- G. 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 Long-Term Report](#).