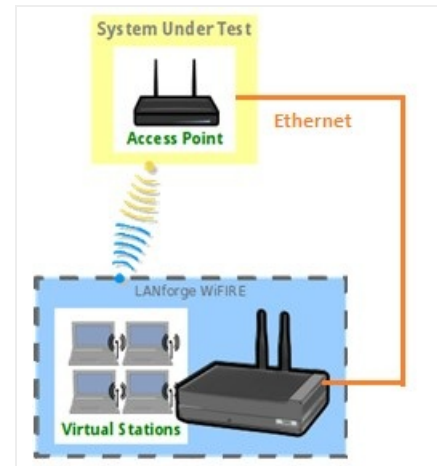


Testing AP performance and stability with the AP-Auto Stability test.

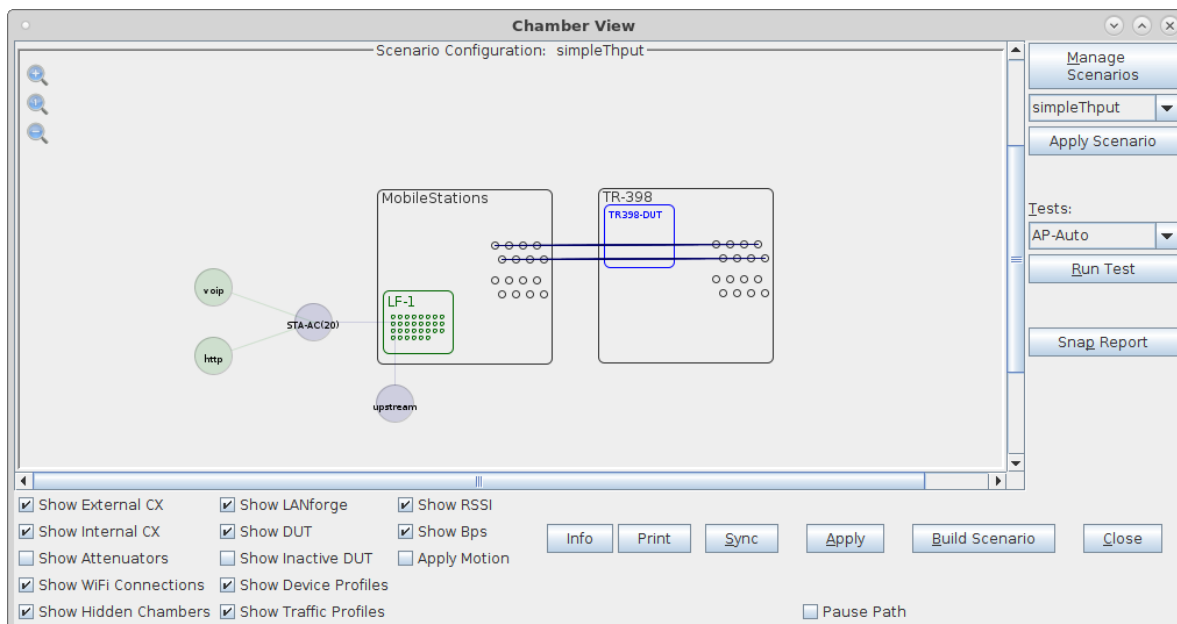
Goal: Setup and run a AP-Auto test for an AP using the TR-398 test bed in order to test how well the AP can handle station load, performance, and stability while Stations are being reset. This test can run on stand-alone LANforge systems without the TR-398 components: A 2-radio LANforge system and DUT is all that is required to run these tests.

In this test scenario, a 6-radio LANforge CT523 is used to create stations and run the AP-Auto Stability 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. Configure Chamber View for AP-Auto and Similar Tests.

- A. Open Chamber View by clicking on the 'Chamber View' button in the LANforge-GUI. If you have an appropriate scenario and DUT already created, then skip to the next section, otherwise you will need to build a scenario that matches your system. You can right-click in Chamber View to create various objects. When complete, your configuration should look something like this.



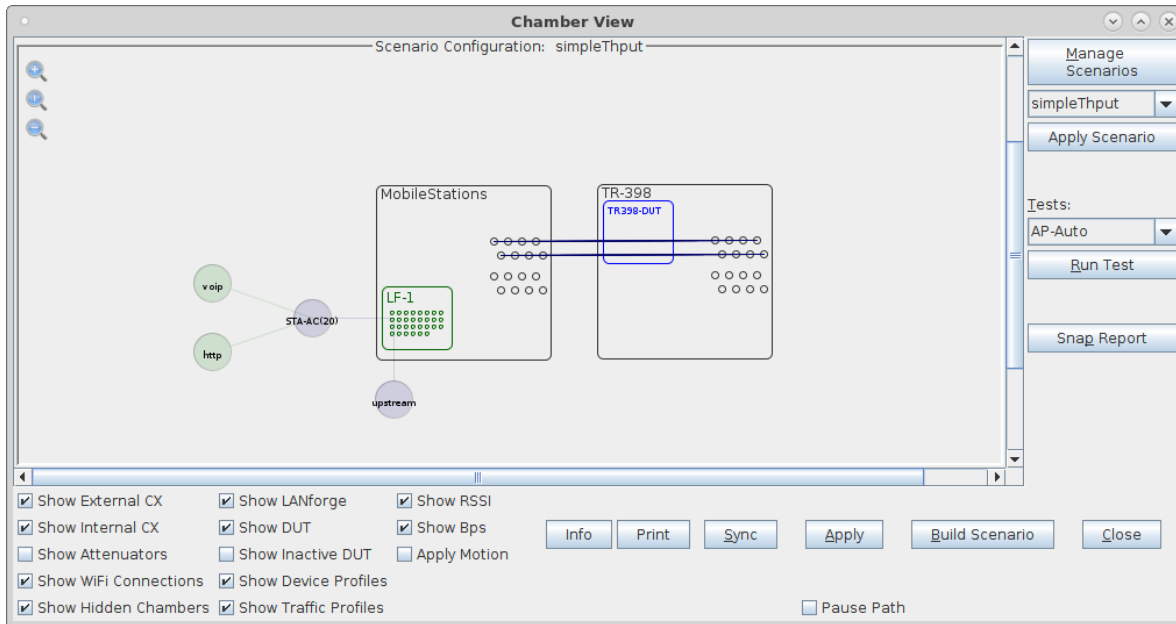
- B. Create a Device Under Test (DUT) Profile that matches your AP. The BSSID is important to configured so that LANforge knows when it is connected to the correct AP.

- C. Configure a Chamber View Scenario and add the STA profile (mapped to desired wiphyX radio and DUT). Add an upstream profile mapped to DUT LAN side (or possibly WAN side if that is more appropriate for your DUT). The traffic flow in the scenario is not required for the AP-Auto test, but it will not cause any trouble if you have traffic configured in the scenario.

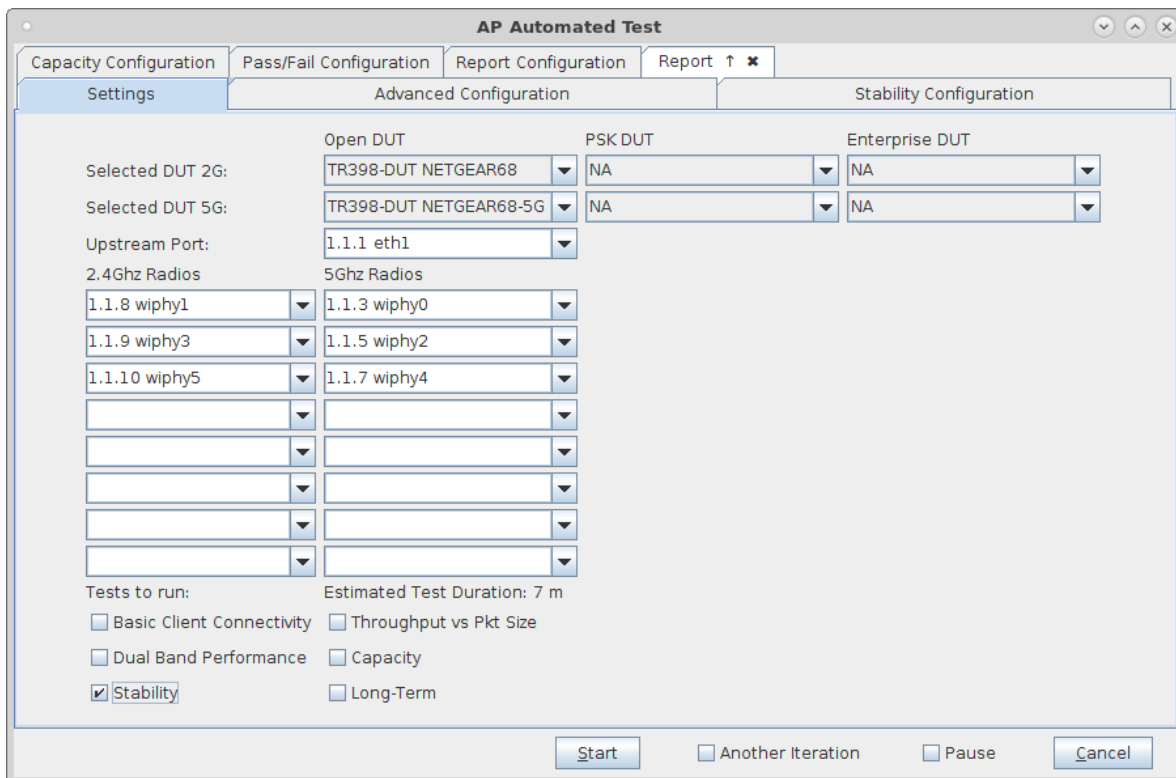
Del	Resource Profile	Amount	Uses-1	Uses-2	Frequency	Maps To	Traffic-1
X	1.1 STA: STA-AC	20 (20)	wiphy0	AUTO	AUTO (-1 Mhz)	DUT: TR398-DUT Radio-1	voip
X	1.1 Upstream: upstream	1 (1)	eth1	AUTO	AUTO (-1 Mhz)	DUT: TR398-DUT LAN	NA

2. Use Chamber View for the AP-Auto Mix-Stability test.

- A. Open Chamber View by clicking on the 'Chamber View' button in the LANforge-GUI. Load appropriate scenario. Apply the Scenario, then Build the scenario.



- B. Select the **AP-Auto** test and click **Run Test**. You should see the AP-Auto Test configuration window pop up. It will remember the last configuration for most fields, and you can also save and load configurations on the 'Advanced Configuration' tab.. Select the DUT 2G and DUT 5G SSIDs. This test requires that Open or PSK is filled out. The enterprise SSID is optional. Use 'NA' for SSIDs that are not enabled. Select the LANforge radios to be used in this test. You need at least one 2.4Ghz radion and one 5Ghz radio for full functionality. At the bottom, select the test cases to be run.:



- C. The Advanced Configuration tab lets you save and restore test configurations and also tune the behaviour of the automated tests. Station counts and skipping the single-band tests are the main options that affect this test.

The screenshot shows the 'AP Automated Test' window with the 'Advanced Configuration' tab selected. The window has a title bar with standard OS controls. Below the title bar are tabs for 'Capacity Configuration', 'Pass/Fail Configuration', 'Report Configuration', and 'Report ↑ ×'. Underneath are sub-tabs for 'Settings', 'Advanced Configuration', and 'Stability Configuration'. The 'Advanced Configuration' sub-tab is active, showing various configuration options:

- Buttons: Save, Load, Delete (all set to DEFAULT).
- IP ToS: Best Effort (0)
- Multi-Conn: One (1)
- Checkboxes: Skip 2.4Ghz Tests, Skip 5Ghz Tests, Skip Dual-Band Tests, Auto-Helper.
- Loop Iterations: Single (1)
- 2.4Ghz Station Count: Small (32)
- 5Ghz Station Count: Default (64)
- Dual-Band Station Count: Default (64)
- Duration: Default (20 sec)
- Long-Term Download Rate: 85%
- Long-Term Upload Rate: 85%
- Long-Term Duration: 300 (5 min)
- Long-Term Graph Interval: 30 (30 sec)
- Long-Term Station Count: Two (Default) (2)
- Hunt Retries: Default (1)
- Frame Sizes: 200, 512, 1024, MTU
- Capacity Amounts (stations): 1, 10, 32, 64, 128
- Packet Loss Threshold: 1% (1%)

At the bottom, there are buttons for 'Start', 'Another Iteration', 'Pause', and 'Cancel'.

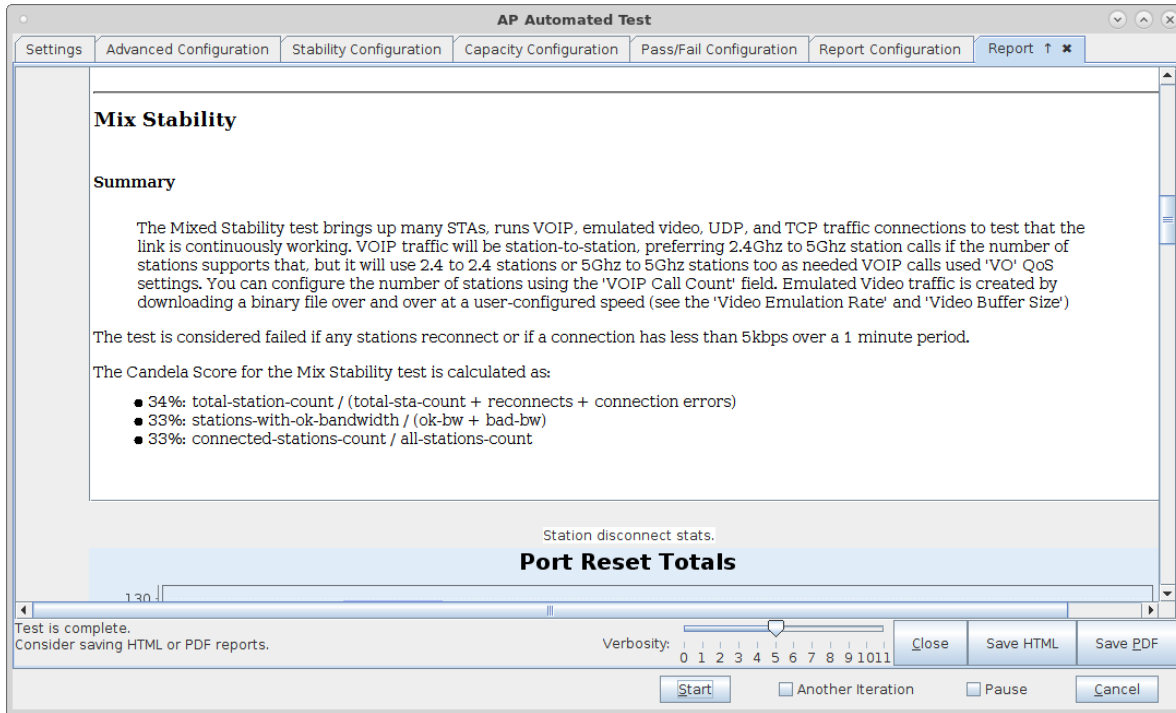
- D. The Stability Configuration tab lets specify the mix of traffic for this test. Select the traffic types, pass/fail thresholds, and port reset behaviour.

The screenshot shows the 'AP Automated Test' window with the 'Stability Configuration' tab selected. The window has the same title bar and tabs as the previous screenshot. The 'Stability Configuration' sub-tab is active, showing various configuration options:

- Stability Duration: 300 (5 min)
- Reset Radios:
- Concurrent Ports to Reset: Single (1)
- Minimum Time between Resets: 20 seconds (20 s)
- Maximum Time between Resets: 30 seconds (30 s)
- VOIP Call Count: Ten (10)
- Video Emulation Rate: SD 360p (700 Kbps)
- Video Buffer Size: 500k (488.28125 KB)
- Stability UDP Min Download Rate: 500000 (500 Kbps)
- Stability UDP Max Download Rate: T1 (1.544 Mbps)
- Stability UDP Min Upload Rate: 500000 (500 Kbps)
- Stability UDP Max Upload Rate: T1 (1.544 Mbps)
- Stability TCP Min Download Rate: 500000 (500 Kbps)
- Stability TCP Max Download Rate: T1 (1.544 Mbps)
- Stability TCP Min Upload Rate: 500000 (500 Kbps)
- Stability TCP Max Upload Rate: T1 (1.544 Mbps)
- Stability stall threshold UDP Upload: 100000 (100 Kbps)
- Stability stall threshold UDP Download: 100000 (100 Kbps)
- Stability stall threshold TCP Upload: 100000 (100 Kbps)
- Stability stall threshold TCP Download: 100000 (100 Kbps)
- Stability stall threshold Video: 100000 (100 Kbps)
- Stability stall threshold VOIP: Zero (0 bps)

At the bottom, there are buttons for 'Start', 'Another Iteration', 'Pause', and 'Cancel'.

- 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.



- F. When the test is complete, 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 Stability Report](#).