Throughput Test

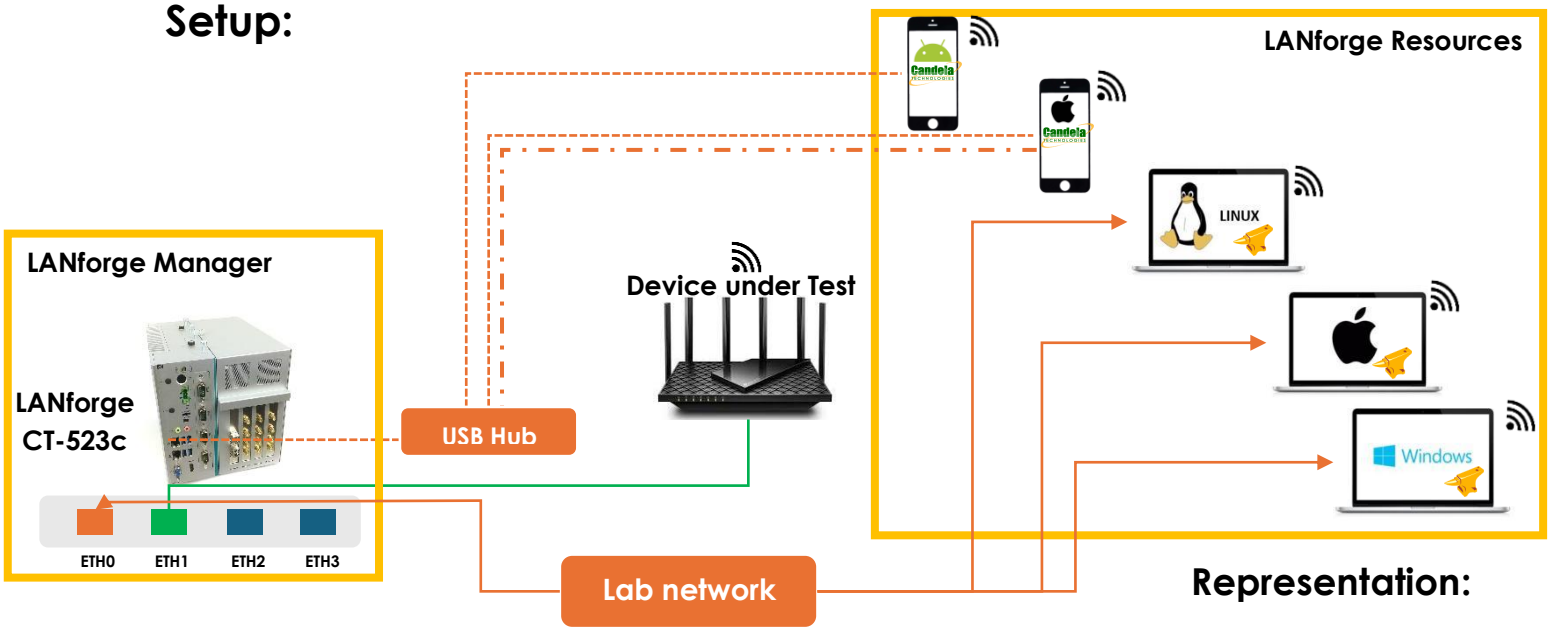
Goal:

Setup and run a Throughput Test for an Access Point using LANforge CT523c or similar system and real devices clustered to Candela Box, in order to test how well the AP can handle different OS Platforms. This is a good test of the AP's performance across real devices.

Purpose:

In this test scenario, the LANforge CT523c generates packets on the Ethernet port toward the wired side of the Access Point. The AP then transmits these frames to the real devices connected to the AP via Wi-Fi. LANforge will run a throughput test, cycle through the next set of stations, and continue this process until all tests are completed. Chambers and attenuators are not required for this test; however, running it inside isolation chambers typically provides more stable and reliable results. This feature is supported in LANforge version 5.4.9 and later.

Setup:



Representation:

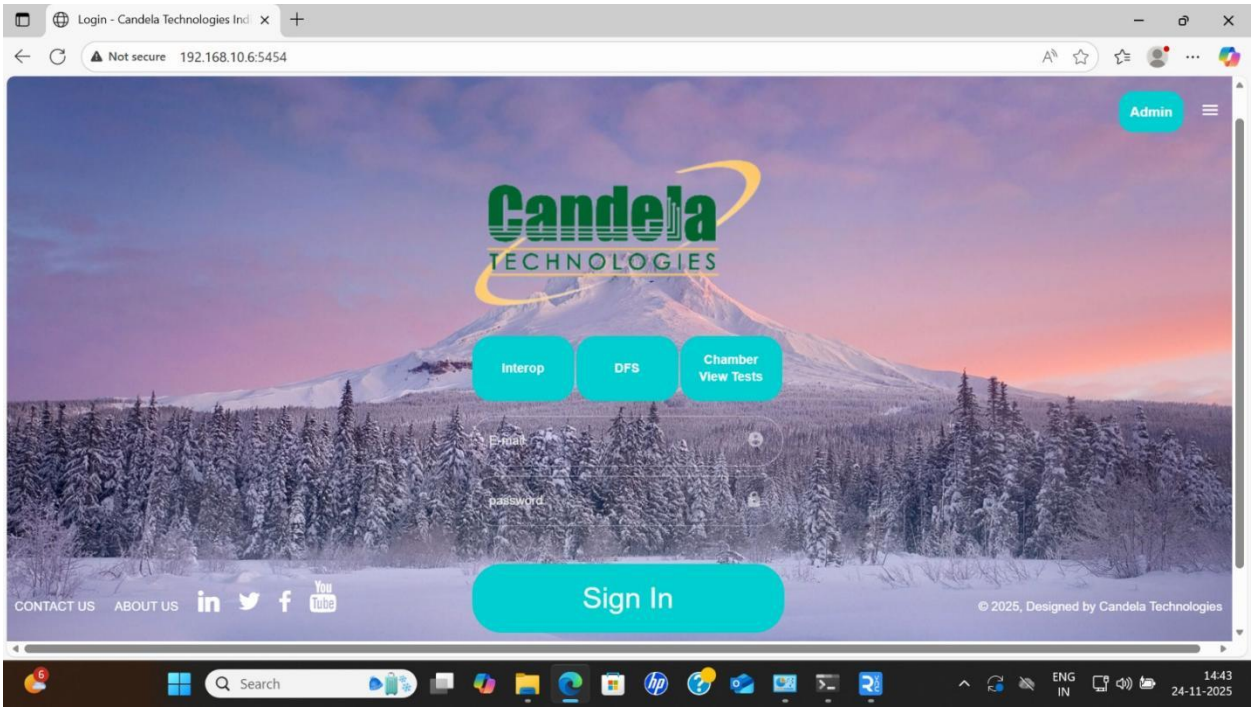
- Ethernet cable
- USB cable
- Bluetooth connection
- Wi-Fi Connection
- LANforge Interop
- LANforge

Pre-requisites:

1. Interop and Web GUI license.
2. Web GUI software installation.

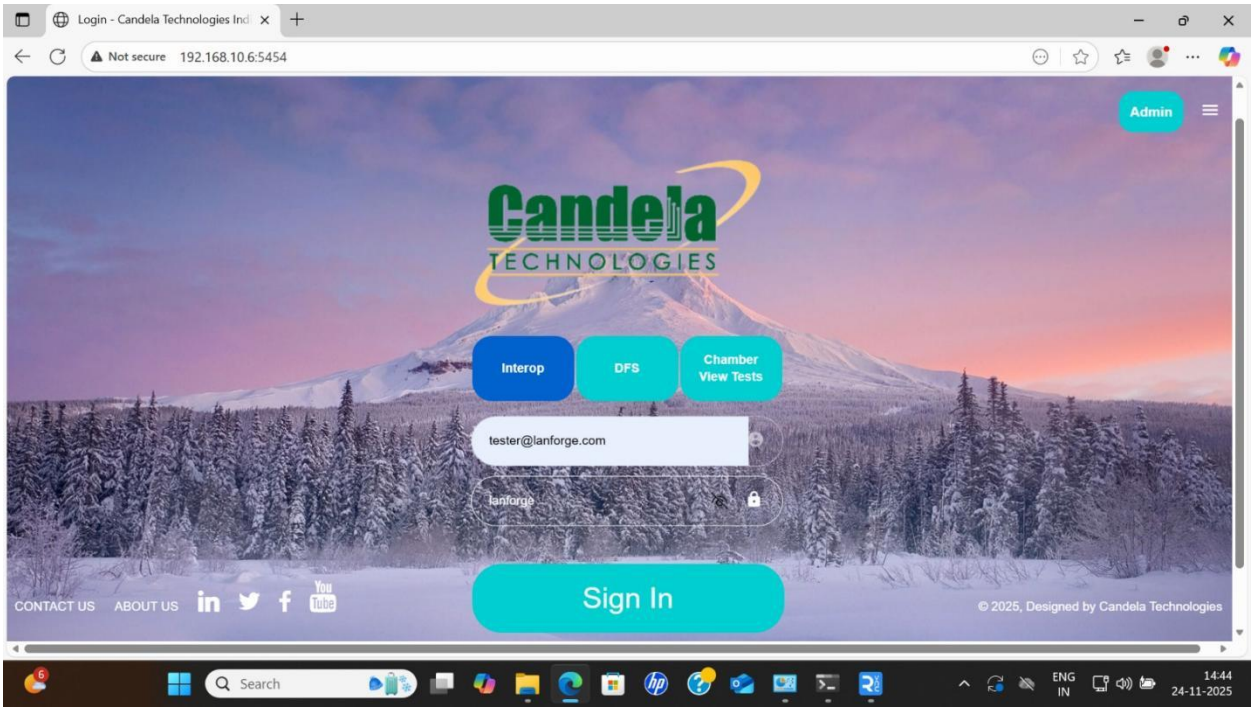
Testcase:

Step 1: Open Chrome and enter the LANforge Manager's IP address followed by port 5454 in the address bar. This will open the Web GUI Login Page as shown below.



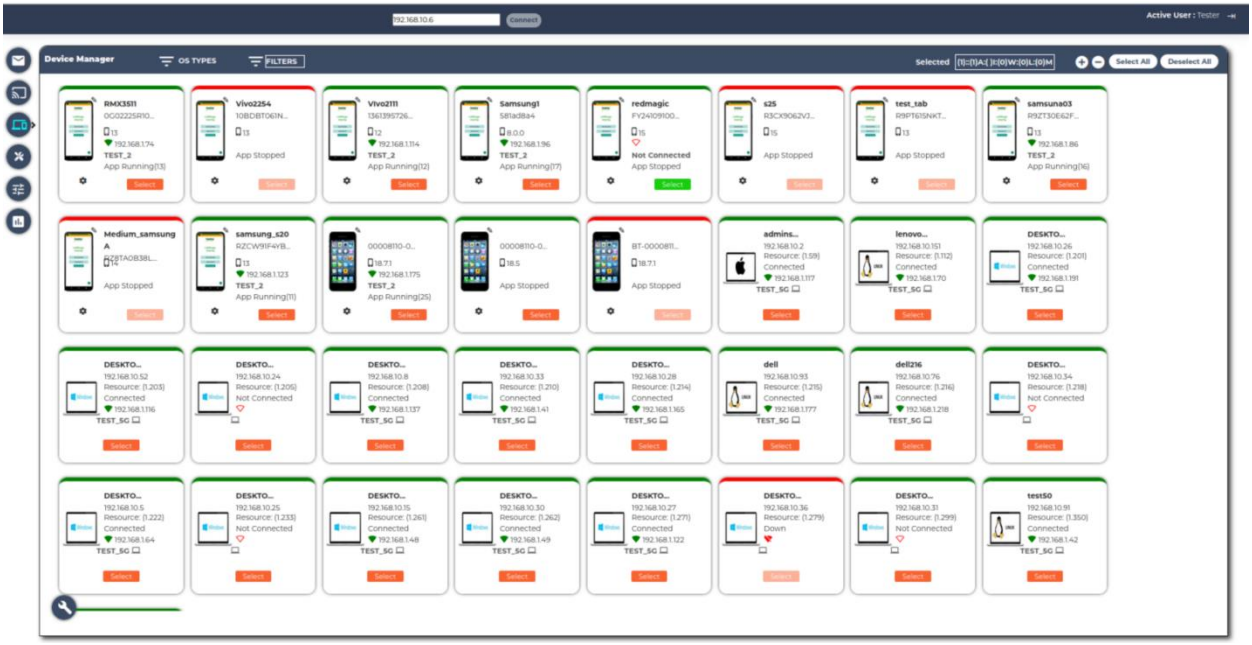
Step 2: Select Interop and enter login credentials to sign in.

- Username: tester@lanforge.com
- Password: lanforge



Step 3: After logging into the WebGUI, the user should enter the LANforge Manager's IP address and select *Connect*. The Device Manager page will then be displayed, showing all real devices connected to the Candela Box. This view includes devices across multiple operating systems, such as Android, iOS, Windows, Linux and MacOS

Note: Real Devices must be clustered using Interop Cookbooks and have a unique hostname to appear in Device Manager.



Step 4: After reviewing the connected devices, the user should navigate to the *Testing* page. In Testing Page, select the required devices in the *Available Devices* pane, choose *Throughput Test* from the *Tests* pane, enter the necessary test parameters, and then click *Run Test* to begin the throughput Test.

Throughput Test Parameters

a. **Instance name* -** Specifies the custom name for the test. The instance name must begin with an alphabet.
Example: **Throughput_Test1**
Special characters and numbers cannot be used at the beginning of the instance name. Each test must have a unique instance name.

b. **Duration* -** Defines the total time for which the throughput test will run.
Ex: 5 [in min]
Time is measured in minutes.

c. **Incremental capacity** -** Determines the batch-wise increase in the number of clients during the test.
Ex: 1,2,5
This runs the test with total 5 clients, in the batch of 1 client, then 2 clients, and finally 5 clients.
Client Resource# - Automatically populated with the Resource IDs of the selected devices.
Ex: 203, 208

d. **Upstream port* -** Indicates the AP's wired connection to the LANforge Ethernet interface used to generate and run traffic.
Ex: eth2-192.168.1.229

e. **Traffic type* -** Specifies the type of traffic to be used in the test.
Ex: TCP/ UDP

f. **Traffic direction* -** Defines the direction of traffic flow for the test.
Ex: Download/ Upload/ Bi-Directional.

g. **Rate* -** Represents the total requested download or upload rate, measured in Mbps.
Ex: 100 [in Mbps]
This reflects the effective transmit rate of the AP/Stations.

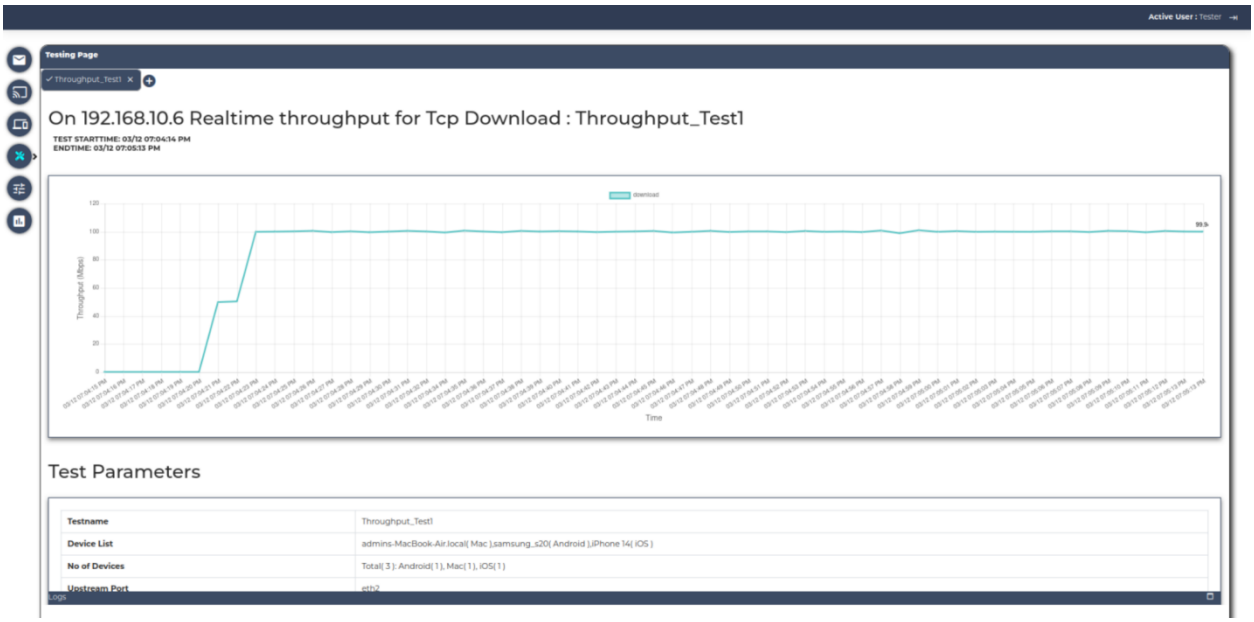
h. **Packet size**** - Specifies the size of each data packet.
Ex: 1000 [in Bytes]
This can be set to any desired value; if unspecified, the default packet size is **1500 Bytes**.

i. **Load type* -** Defines how the load is distributed to clients.
Ex: Per client load/Intended load.
Per-Client Load: The specified rate is applied individually to each client.
Intended Load: The specified rate is distributed across all clients collectively.

* - Compulsory, ** - Optional, # - Automatically filled

Step 5: After clicking *Run Test*, an instance will be created using the specified test name. During the test execution, the user can monitor the real-time throughput graph, review logs in the Log Viewer, and observe the configured test parameters. Once the test has completed, the user should generate the PDF report from the *Testing* page and save it to the desired directory.

Note: When the test is initiated, the L3 endpoints are created in LANforge Manager and generate throughput. After the Test completion detailed PDF report, along with CSV data captured at each timestamp, is saved in the *webgui_reports* folder located under the *home/lanforge* directory on the LANforge Manager.



Sample PDF Report: Throughput Test