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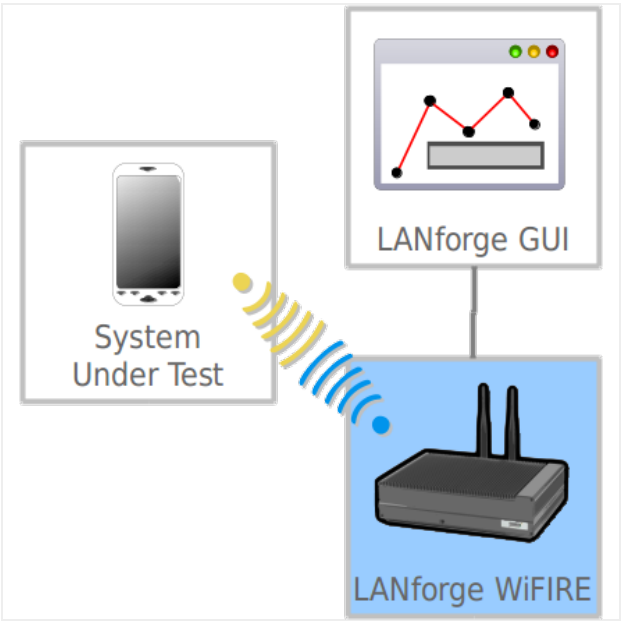
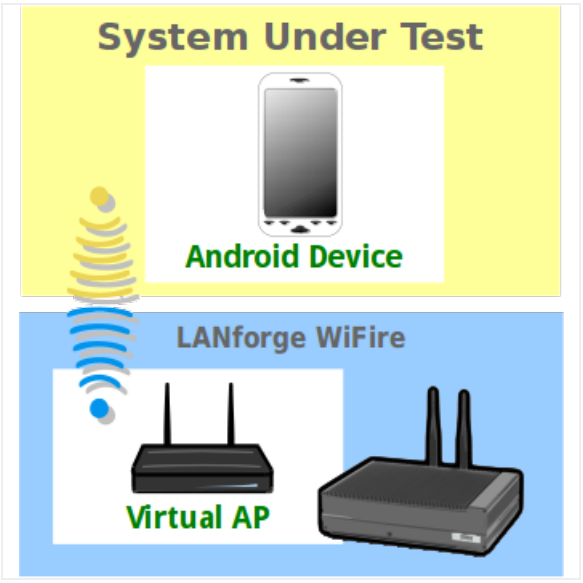
Verifying Android QoS

Goal: Set up Video and Best Effort QoS connections and verify results.

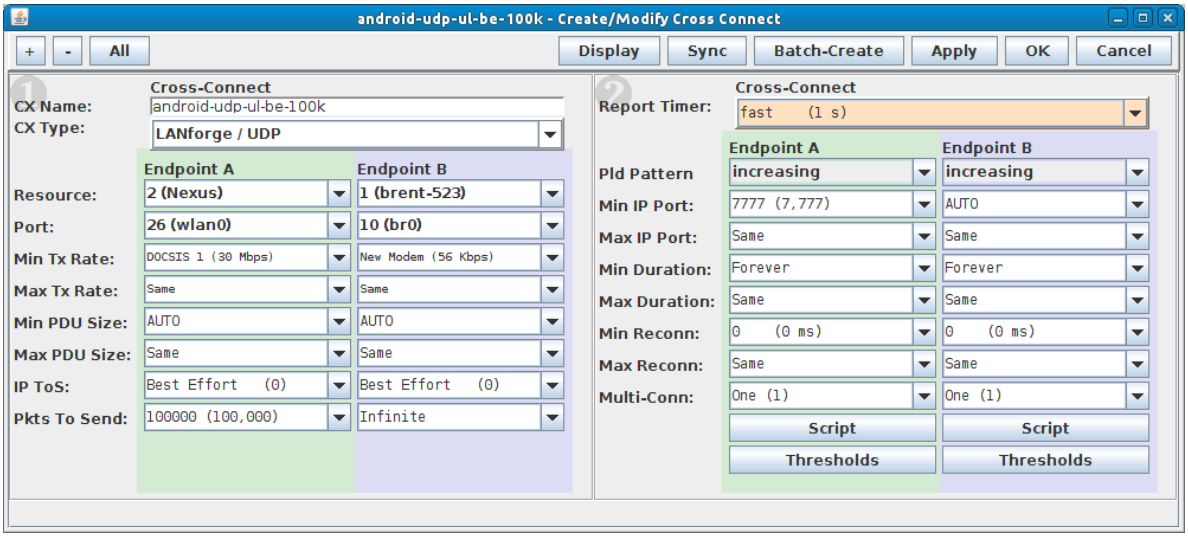
In this example, LANforge-FIRE is used to set up two connections, one running video QoS traffic, the other with Best Effort QoS traffic. The latency and drops will be compared and wireshark will be used to verify QoS information.





1. Connect the Android device to a LANforge system. You can use the cookbook here for tips: Running UDP Traffic with Android
2. Create two connections between the Android device and a LANforge port. One for **Best Effort** QoS traffic, one for **Video** QoS traffic.

A. Creating a Best Effort UDP connection.



A. Set a **name** for the connection (android-udp-ul-be-100k) in this case.

B. Select your **ports**. In this case the connection is between the Android (wlan0) and a bridge (br0).

C. Set **Min Tx Rate** on **Endpoint A** to **DOCSIS 1 (30 Mbps)**.

D. Set **Min Tx Rate** on **Endpoint B** to **New Modem (56 Kbps)**.

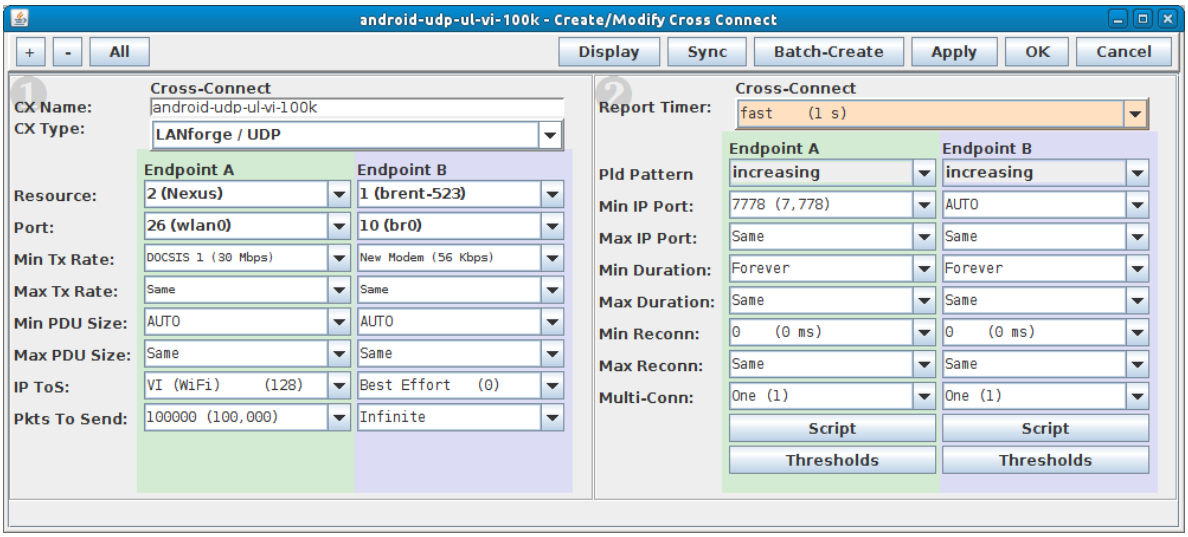
E. Make sure **IP ToS** on **both endpoints** is set to **Best Effort**.

F. Set **Pkts to Send** to **100000** on **Endpoint A**. **Note:** Because Android is being managed in-band, this limit should prevent losing management frames that could contain reporting data.

G. Set **Min IP Port** to **7777** on **Endpoint A**. A custom port is used to help identify the connection type in wireshark.

H. Set **Multi-Conn** to 1 for **both endpoints**. This is so each endpoint is running on its own process.

B. Creating a UDP connection with video QoS traffic.



A. Set a **name** for the connection (android-udp-ul-vi-100k) in this case.

B. Select your **ports**. In this case the connection is between the Android (wlan0) and a bridge (br0).

C. Set **Min Tx Rate** on **Endpoint A** to **DOCSIS 1 (30 Mbps)**.

D. Set **Min Tx Rate** on **Endpoint B** to **New Modem (56 Kbps)**.

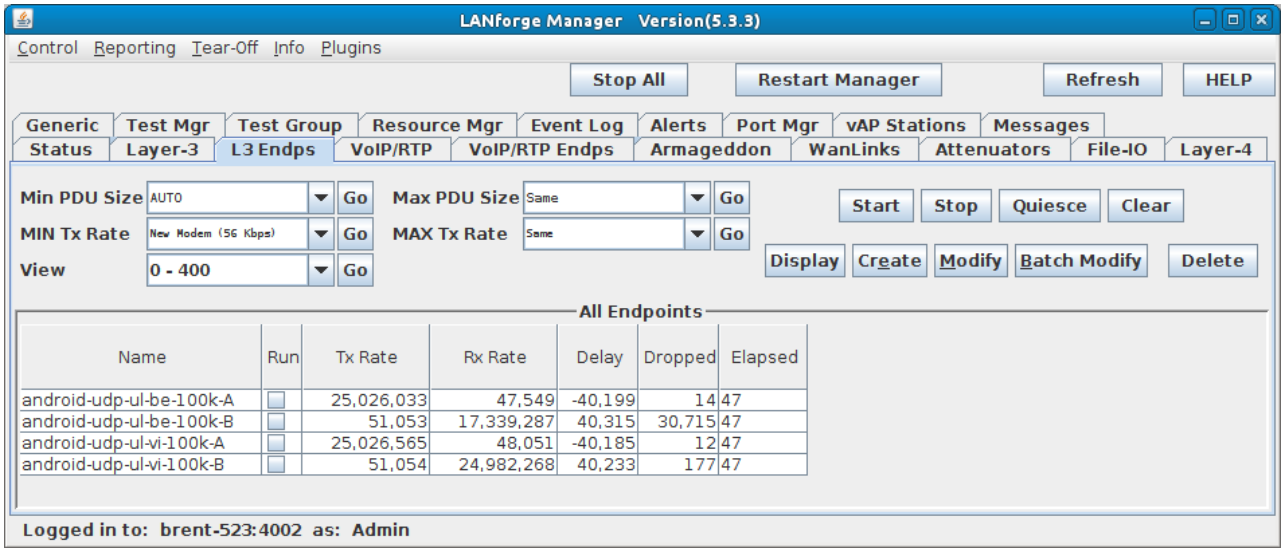
E. Set **IP ToS** on **Endpoint A** to **VI (WiFi)**.

F. Set **Pkts to Send** to **100000** on **Endpoint A**. **Note:** Because Android is being managed in-band, this limit should prevent losing management frames that could contain reporting data.

G. Set **Min IP Port** to **7778** on **Endpoint A**. A custom port is used to help identify the connection type in wireshark.

H. Set **Multi-Conn** to 1 for **both endpoints**. This is so each endpoint is running on its own process.

3. Compare latency and drops.

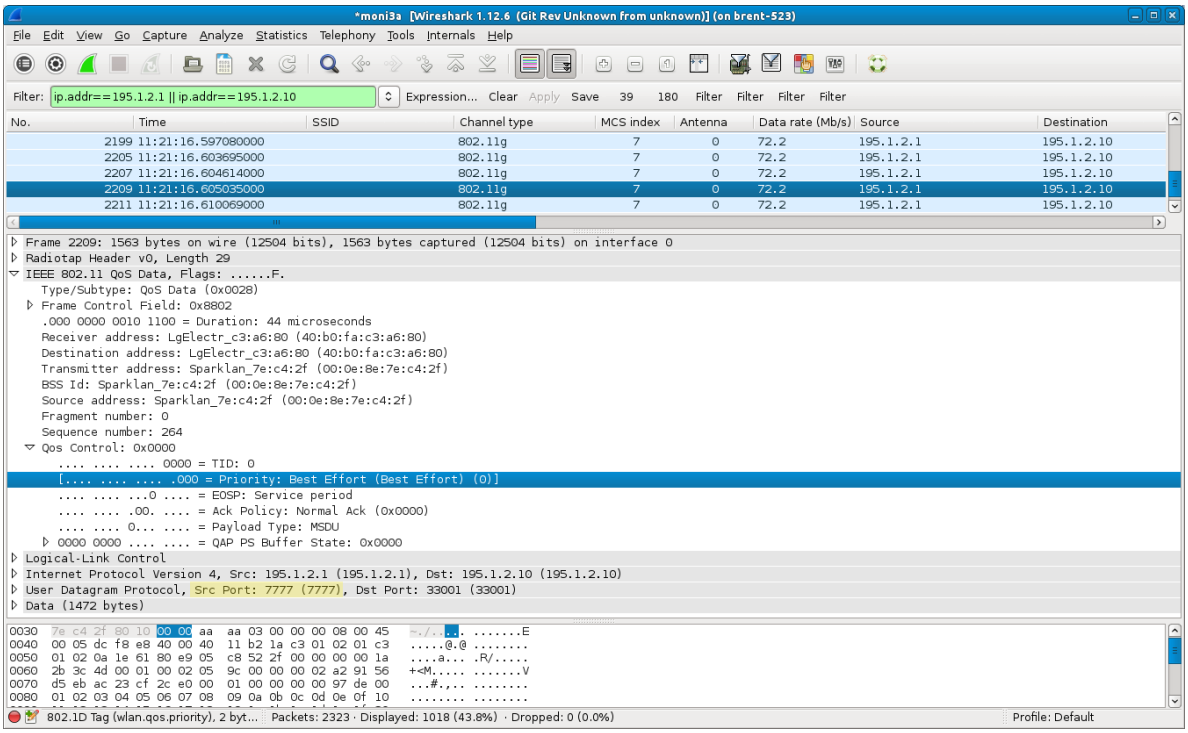


A. The latency can be found under the **Delay** column.

B. The drops can be found under **Dropped** column.

C. If QoS is working properly, you should see **less delay (latency)** and **less drops** for connections using **VI (WiFi) IP ToS**. The delay can be more easily compared if you add endpoint A and B of each connection. As should be expected, the results above show that the particular device is dropping significantly less packets for the connection with video QoS traffic. Because there is a small amount of latency, a major difference isn't shown here.

4. Verify QoS type with wireshark. This is where our custom port setting is helpful.
   A. The packets on port **7777** should show **Best Effort**.



B. The packets on port **7778** should show **Video**.