Dota 2 Low Latency DOCSIS Trial Instructions

Purpose

Dota 2, a free to play game, provides network statics and the ability to enable/disable Low Latency DOCSIS from within the game client. For this trial, we would like to collect measurable network statistics for different scenarios while LLD is enabled and disabled.

Setup

1. Install the Steam application: https://store.steampowered.com/
2. Install Dota 2 from within the Steam app.
3. Once installed, in your Steam library list, right click on Dota 2 and select "Properties…"
   - Under "Launch Options", type the following: `-console -sw`
     i. `-console` allows opening of the console window to enter game commands
     ii. `-sw` allows the game to be run in a window instead of full screen. It also allows moving the mouse cursor outside of the game window to use other apps like Notepad and the iPerf traffic tool.
4. Download the iPerf traffic tool that will generate upstream traffic: https://www.dropbox.com/scl/fi/auerbv51wq6dbl8wxcut2/iPerf3-tool-v2.zip?dl=0&rlkey=e8kj06zg3pjwzqsq4selh48nr

   Note: Currently only the Windows version of Dota 2 supports LLD

Test Scenarios

The three scenarios we would like to gather stats for are:

☐ Test 1: LLD is disabled with no background traffic.
☐ Test 2: LLD is disabled with traffic filling the upstream bandwidth.
☐ Test 3: LLD is enabled with traffic filling the upstream bandwidth.

The iPerf traffic generation tool will be used in the background for #2 and #3.

Connecting to Dota2 servers

1) In the Steam app, select Dota 2 in the game list and click Play.
2) In Dota 2, click Play DOTA in the lower right of the game window.
3) Press \ to open the console window.
4) Depending on the scenario being tested, enable or disable LLD by typing one of the below commands in the console:
   a) `net_option ecn -1`
      - This will disable LLD. It is the default when starting the game.
   b) `net_option ecn 1`
      - This will enable LLD until you change the setting manually or quit the game.

5) Under Custom Lobbies, click +CREATE.
6) To the right of Lobby Settings, click EDIT.
7) Configure the settings as shown below:
   a) Server location: Pick US West or US East based on your location. It would be valuable to run the three test scenarios on the further away region as well.
   b) Set lobby visibility to "unlisted" and set a lobby password to make sure other players don't bother you.
8) If you want to play the match, select a bot difficulty of your choosing. Otherwise, select Easy.
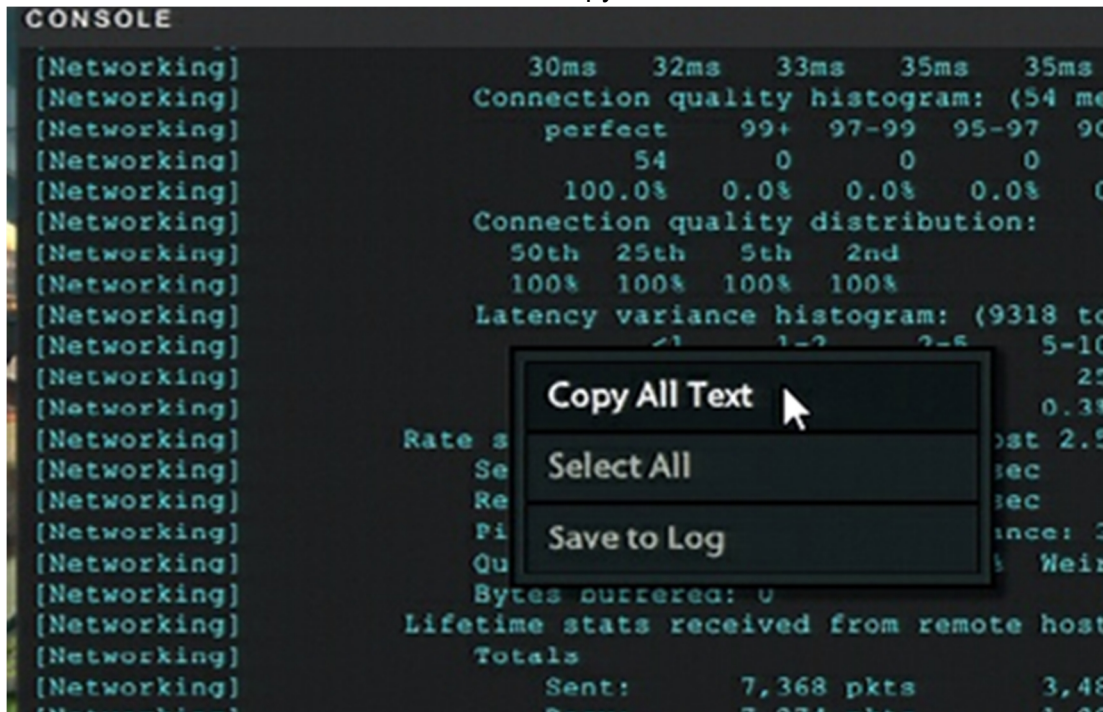

9) Click OK.
10) If running test scenario 2 or 3 with background traffic, start the iPerf traffic tool now. It will run for 5 minutes and then stop.
11) Click Start Game.
12) Click Skip Ahead to enter the match immediately.
   a) You can play the match or leave your character near the fountain. You do not need to press any keys for the scope of the testing.

Collecting the Game Stats
1. Press \ to open the console window.
2. If you're testing scenario 1, complete step 3 after about 5 minutes. If you are testing scenarios 2 or 3, complete step 3 before the traffic tool's 5 minute timer ends.
3. View your connection stats by entering these commands on separate lines:
   a) clear : clear the console window first.

b) net_option ecn : record low latency setting for the record
c) net_connections_stats : outputs the game session's network stats
4. Right click in the console window and select "Copy All Text"

5. Open Notepad and Paste the copied text.
6. Save the Notepad file with a unique name to help keep track of which of the tests the data is for.

Additionally, running the test scenarios using the Dota 2 server location furthest away, i.e., selecting US West if you are in Pennsylvania, will provide additional data points because of added latency.

Send In Your Results
If you want to run the tests more than once each, we welcome the extra data!

Please use this form to upload your notepad files with collected game statistics:
https://app.smartsheet.com/b/form/b1b7c10f57fa4750b1d140452b74f3f6

Thank you!