FRAGNETICS

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Lag Reporting Guide

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Introduction

This document gives an overview of lag reporting and the steps that should be taken so that the problem can be properly analyzed.

What is Lag?

"Lag" itself is a vague word when it comes to gaming. It can be caused by a variety of factors, including but not limited to:

> ➤ Network Latency
> ➤ Server Overload
> ➤ Internet Service Providers
> ➤ Network Overload
> ➤ Game Software Problems
> ➤ Outdated Gaming Hardware

Fragnetics has control over some of the factors that affect a gamer's experience. Specifically, we do not overload our servers by sharing them across too many games. This ensures that the server hardware itself is not overly taxed when hosting game servers during peak periods. In addition, while we do not have control over the hardware apart from our switches and servers at the data centre, we can assist our upstream provider in identifying problems such as network latency and overload.

Other factors that we have no control over are game software problems, especially in cases where new games are released with poor network code – a good example of this would be a game like Battlefield 2142 in its initial release. If gamers across the world face identical lag symptoms, the problem lies with the game and not with Fragnetics servers.

Another factor would be outdated gaming hardware. Anything barely meeting the minimum requirements of a game would most certainly produce lag in-game. This has little to do with our game servers but more to do with the gamer's PC and the graphics subsystem. Symptoms of this include lots of hard disk activity and extremely slow loading times.

Identifying Types of Lag

There are two types of lag that can we can resolve:

Server Overload

This is usually identified by "teleporting", especially in Counter-Strike, where the gamer moves in a certain direction but is continually shifted backwards every few moments. Importantly, the gamer experiences low latency (pings averaging about 50ms) but continues to suffer from teleporting. Everybody else in the game server is similarly affected during a server overload, and neighbouring game servers running on the same machine would experience the same problem.

Another symptom of server overload is a consistently high ping of 300ms or more for every single player in-game. This should not be confused with network latency, which normally only affects a group of gamers on the server. Gamers should report this to us on our forums at http://www.fragnetics.com/forums or contact us via e-mail or MSN. We will check this against our CPU utilization graphs to verify the problem and then make the necessary adjustments.

Sometimes, the presence of unofficial modifications to the game server will also introduce such problems. An example would be overloading a Counter-Strike server with too many AMX plug-ins. In such a scenario, we recommend that plug-ins are removed in the reverse order that they were introduced to the server, so that a problematic plug-in or group of plug-ins might be identified and removed.

Network Latency

The trouble with network latency is that in many cases, only a segment of the gamers on the server are affected by lag. Network latency problems are evident when gamers experience pings of 100ms and above on a sustained basis. This is most clearly seen with international gamers joining a game server, since geographical distance would prevent them from playing at reasonable pings.

Within Singapore however, gaming throughout the country on broadband and cable connections should not have pings that exceed 100ms. Sustained high latencies would result in a good deal of teleporting, and warrant further investigation. If a gamer or a group of gamers experiences consistently high latencies, they should lodge a lag report via our website.

Lag Reporting

The Fragnetics Lag Reporting Tool is available from within your subscriber Control Panel. Follow the instructions on-screen and click on the "Begin Trace" button to start a trace. This program generates a report based on a trace **from the server to your computer** over a 5-minute period. Data from this report helps Fragnetics administrators to resolve network issues in a timely manner. Traces are most useful when done **at the time when players experience lag**. Traces done when the lag has cleared are not particularly useful to our administrators.

Collecting Additional Traceroute Information

In addition to this tool, more proficient gamers may also opt to perform a traceroute **from their computers to our servers**. This is different from the original lag reporting tool, which can only gather information from our **server to your computer**. A graph such as the one on the following page, produced by Ping Plotter (http://www.pingplotter.com), would assist us in our investigations.

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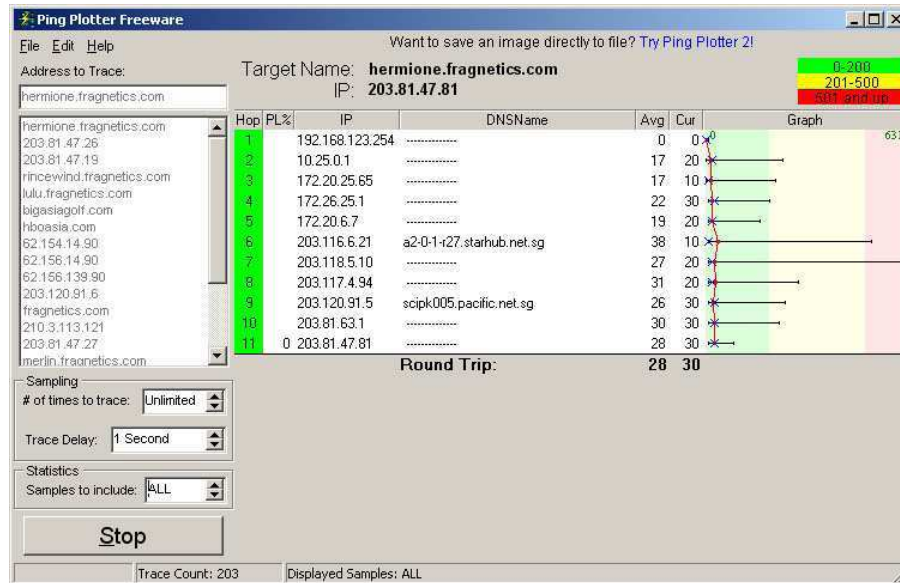
To collect such information, download the freeware version of Ping Plotter from http://www.pingplotter.com/download.html . Upon running the software, enter the server IP or name under the "Address to Trace" section. Use a "Trace Delay" of 1 Second, and under "Samples to include" enter ALL.

Wait for about 3 minutes as ping and traceroute samples are recorded. Afterwhich, click on "Edit" > "Copy to Image". Use a program such as MS Paint or Photoshop to paste the image captured from Ping Plotter. Save the image as a JPG or another compressed format, and attach it to your e-mail.

Conclusion

Although the information provided in this document is not exhaustive, it provides an overview of the steps required to produce a meaningful lag report. In many cases, we have noticed that complaints of lag have not been substantiated, leaving us no means of taking action. Instances of lag occur every now and then, but sustained periods lasting more than half an hour should be reported.

Hopefully, with the information provided in this document, gamers can better understand the issues surrounding lag and identify genuine cases affecting their gaming experience. By providing lag reports, our administrators will be better equipped to handle your problem and solve it swiftly.

This brings us to the end of the Lag Reporting Guide. Thank you for gaming with Fragnetics!

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