

GETTING RID OF LAGGGG

By Bart Suichies (/en_US/home/blog/interviews.html?author=Bart Suichies) on Jan 15, 2014 9:00:00 PM

One of the most annoying things you can experience when playing online is the occurrence of latency or lag. We sat down with lead game tech Jorrit Rouwe to walk you through the most likely causes of lag and what can be done to prevent them as much as possible.

Lag is a simple word with often many complex causes, so let's start by defining it.

Basically, we recognize two types of lag. One is where you have a bad connection to the server, which results in everyone skating around & taking a lot of shots to die. And the second one is where other players in your game might have a bad connection to the server in which case only these people exhibit those issues.

What are the main issues that are likely to cause lag?

Looking at player setups, we see about 60% of the players using WiFi . On average these players have a ping that is 5ms higher than wired users and some issues that typically can be related to interference of the signal. We generally see quite a bit of improvement in the connection quality when players switch to a wired connection.

That's looking at the player setup. What about Killzone Shadow Fall's servers?

Well, server wise you might encounter lag due to the fact that you are physically far away from the server you might be playing on. We currently have servers in North America (both on the east and west coast), the UK, Australia and Singapore and based on our lag analysis we have expanded our coverage with servers in Brazil and Japan and are seeing the first positive results (see the image below). Also, we are investigating if it's possible to add servers in the Middle East, to further enhance our coverage.





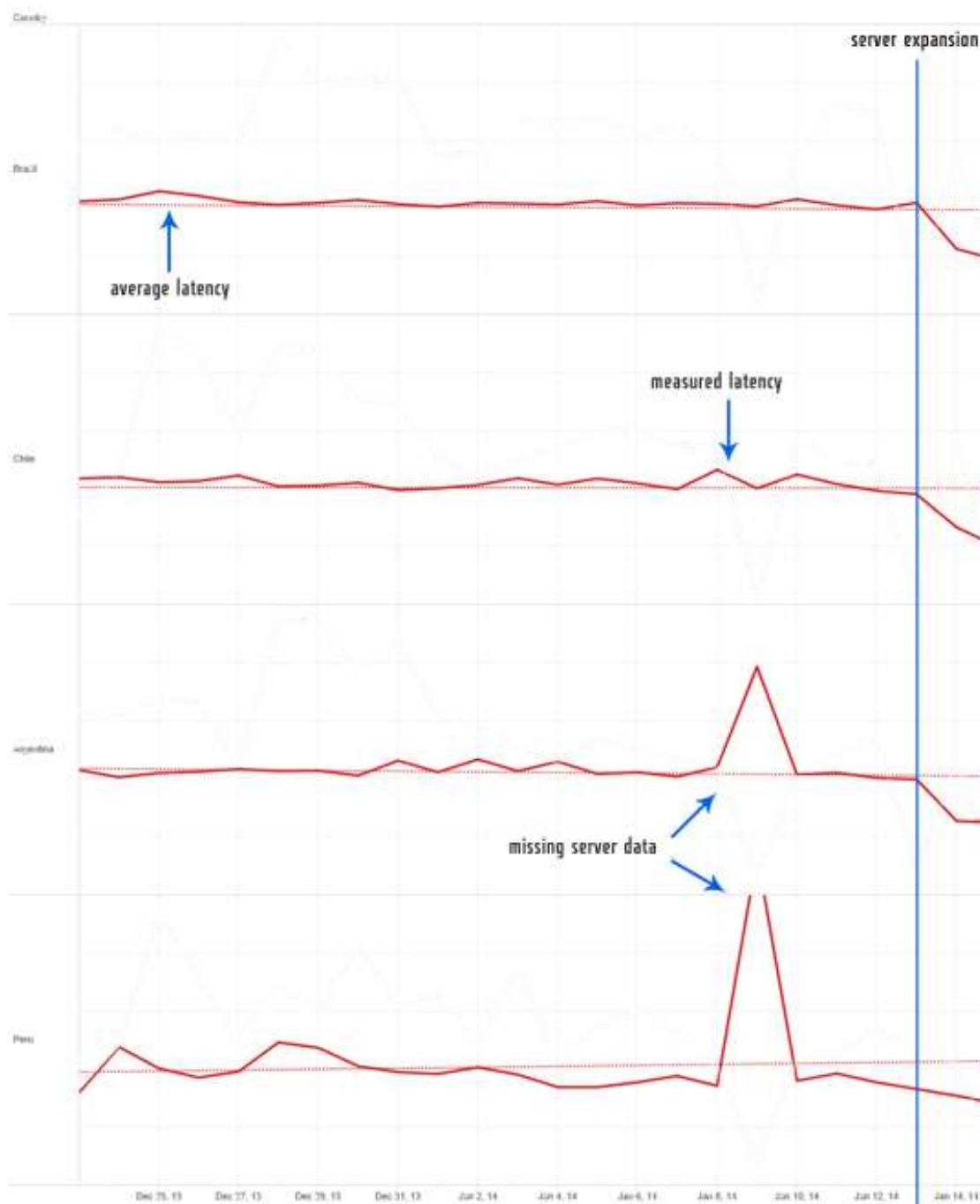
[above: average latency in South America before and after the server expansion. Green indicates a better connection. Before the expansion, players from South America were playing on the US West-Coast server.]

Could you elaborate and explain a little bit about the matchmaking process? Why do players end up in the server they do?

The way matchmaking currently works is that you are usually being matched up with players on the closest server. To give you an indication, this happens more than 96% of the time for players in Europe and the US. If this is somehow not possible, we're matching you to the 2nd closest server (e.g. if you live on the East coast in the US, the West coast would be the 2nd closest server). Most of the time when you're playing outside your own region this will be because there are not enough players in your region, most likely due to the fact that you're playing outside of peak ours (noon to midnight, peaking at 8pm) or you're playing a smaller warzone (if this is the case: try switching to a more heavily populated warzone). Right now it's not possible to see whether you are playing in your own region or not. One of the improvements we'll be bringing in a forthcoming patch (likely somewhere in February) is the addition of connection information in the warzone browsing screen. That way, players will know what type of quality game to expect in terms of connection-speed.

How are you dealing with players from outside my region?

First and foremost, we're trying to prevent that from happening as much as possible. Looking at our lag analysis, we're seeing that the smaller regions are more likely to be redirected to larger servers. Though this makes sense as they are smaller regions, we're actively trying to combat this, as this affects the experience for everyone. So one thing we're going to change next week is an increase in the time before we start looking for games outside your region to get people in smaller regions to stay in their region (this is currently the case for more than 70% of the players, but we are aiming to get this just as high as the big regions). Also, we are investigating ways to move people back to their own region on round rollovers if a game has become available in that region. In the meantime we are also investigating if we can show the connection quality for all players on the scoreboard so you can see if it's you who is lagging or other players.



[Above, an overview of the daily average latency in Brazil, Chile, Argentina and Peru. The blue line represents the moment we added a server in South America.]

So you will not be region locking the game?

Not right now, we're primarily focusing on improving the matchmaking process so everyone has a good experience. In the near future our matchmaking server is going to try and separate players with a good ping from players with a bad ping. We believe everyone should be able to play, but acknowledge that players with a bad connection

disrupt the game even for players with a good connection. The addition of servers in Brazil and Japan is going to help a lot here too as it will lower the lag for players from those regions and prevent them from causing lag in other regions.

What is the best thing players can do when they still encounter lag?

There are a number of things players can do to improve the quality of their connection.

- Do not use bandwidth intensive applications while playing the game (e.g. watch movies, download games/data/patches, running a Torrent client, stream via Twitch, play other online games, etc).
- Use <http://www.speedtest.net> (<http://www.speedtest.net>) to check your connection. You should get a value of 50 ms or less to have a reasonable game experience. Generally, we are recommending that your speed is at least 1024 Kbps down / 512 Kbps up (the minimum requirements are 512 Kbps down / 256 Kbps up).
- Put your PS4 as close as possible to your modem and connect it directly with a (short) wired Ethernet connection.
- Make sure that your firewall does not block port 10070 UDP and 443 TCP.
- In the in-game options turn the headset volume to 0% and/or leave party chat (reduces required bandwidth).
- Play during peak hours (noon to midnight) and on more populated warzones.
- When (free) DLC is released: Make sure to download it so you can play with as many people as possible.
- The game works with any MTU size but to reduce lag you want it to be as high as possible (close to 1500). Best is to set the MTU setting on the PS4 to 'Automatic' (this is the default) to let the game figure out the correct value.
- If you can: Try out a different modem/router. We have had specific issues with Siemens Gigaset (fixed) and Technicolor routers (and are still investigating).
- The following things do NOT influence lag in game (they do influence the PS4 OS, e.g. the ability to chat using PS4 Party): UPnP, NAT type, putting your PS4 in the DMZ.
- Certain Technicolor ADSL modems (most notably TG582, TG587, TG589) trigger a lot of network errors (error codes 10100, 10101, 10109). To fix this please do the following:
 - Open a command prompt on your PC
 - Type (without the quotes): "telnet 10.0.0.138" (IP may be different for your router)
 - Login "admin", no password (might be different based on modem branding or if you set a password yourself)

- Type: ":connection bind application=CONE(UDP) port=10070"
- Type: "saveall"

If the above doesn't help, contact support via feedback.killzone.com (<http://feedback.killzone.com/>) or look in the topics on the forum (<http://community.killzone.com/>). For additional help on the PS4 technical settings, click here (<http://manuals.playstation.net/document/en/ps4/basic/network.html>).

Thanks for your time, Jorrit.
