



Philosophy

At StreamGuys we understand that a streaming service requires a premium network to reliably serve audio and video signals. That's why we engineered our network specifically for the purpose of supporting high volume audio and video streams. Broadcasters need a network that will be up 24/7, 365 days of the year. As a company strategy we have continually invested in providing the best possible service level, taking care to grow our streaming distribution network for the benefit of quality routing.

Geographic and Network Diversity

We balance the needs of geographic and network diversity. As a global media distributor we need to insure that people all over the world, on a wide variety of internet networks, can receive the broadcast signal. Network diversity is the defining characteristic of an improved network. While geographic diversity plays a role, ultimately using a diverse mix of networks enables the end user the best possible network path to their destination. That's why we use an extremely diverse range of network providers, from premium tier-1 bandwidth carriers to private and public peering, we combine networks to achieve a rich environment.

For geographic diversity we maintain points of presence in key data centers around the world, with three data centers in the US, one in Amsterdam, and one in Tokyo. Through our data centers we route our diverse network connections from one data center to another. This method of routing blends the best of aspects of geographic diversity with network diversity.

Connectivity

Our 100% fiber optic network is completely fault-tolerant and redundant. We currently utilize the following transit carriers: Level3, UUNET, and Telia, as well as a diverse mix of local (in facility) peering with most major networks. This mix of transit and peering provides us unique connectivity to the Internet, and each connection is used for its best routes. We maintain a minimum of 3000mb/sec capacity to each of our upstream providers over diverse, interconnected locations.

StreamGuys uses multiple providers to connect to the Internet. Each transit provider was selected for unique aspects of its network. This includes capacity, peering, footprint, performance, and equipment quality.



Route Optimization

BGP4 (Border Gate Protocol) technology allows the traffic to your site to travel more efficiently by finding the best route for data to travel. On a typical server the traffic always takes the same route from client to server. BGP protocol repeatedly locates the most efficient path between client and server. BGP is the protocol that combines multiple networks and allows internet networks to share routing information across multiple bandwidth providers.

100% Network SLA Guarantee

Our network will be available to your server 100% of the time. We guarantee it. We stand by our commitment to 24/7 availability by backing it with a 100% up time Service Level Agreement. Through the design and implementation of our network, we offer the reliability, performance, and scalability required to maintain 100% uptime.

Datacenters

All customer colocation and dedicated servers are provided exclusively at Equinix Datacenters. (www.equinix.com) Security includes 5 layers of biometric palm scanners to enter and leave the facility, over 600 video cameras with 30 day digital recording, along with kevlar sheathed floors and walls.

We operate in Chicago IL, Ashburn VA, San Jose CA, Tokyo Japan and Amsterdam NL.

Our data centers offer N+1 Redundant UPS Systems backed up by (6) 250 kW Onan/Cummins diesel generators with 36 hours of fuel. Redundant fiber optic cross-connects to diverse routers ensure 100% uptime.

Peering

Along with our transit carriers, we also maintain rich peering relationships with content and access networks. This peering enables us to access your destination networks directly, bypassing transit for exceptional speed and reliability. We use a multitude of public and private peering.



The StreamGuys Network

Redundancy

We maintain redundant border and core routers to ensure 100% network availability. All carriers maintain multi-gigabit links to us, which we require to be fully burstable and redundant. To achieve this, our carriers all maintain redundant routers with a minimum of two OC-48 (2.5 gbps) or OC-192 (10 gbps) connections to satisfy our bandwidth needs.

Capacity

Daily traffic never exceeds 25% of our available capacity to ensure we have the bandwidth available for special events, scheduled maintenance, possible carrier outages, or Denial of Service attacks.

Domain Name Servers

We maintain multiple domain name servers located at different locations throughout the United States. Each of these locations has multiple high-bandwidth Internet connections, battery and diesel generator back-up power, security, and access to three different major Internet backbones. These dispersed, redundant name servers give us the ability to always delegate your names, with no interruptions in service. We have gone to great lengths to make sure all of our name servers are up at all times.

Questions?

If you have additional questions, or would like to speak to a network engineer directly, please contact

NOC@streamguys.com

Or phone us at 1.707.667.9749 x251

Tours of the Chicago data center are available as well as traceroute and diagnostic tests on our network.



Sample Traceroutes

The traceroutes below show a few of our paths to popular networks. As you can see they all reach their destinations less than 2 thousandths of a second, most within half of one thousandth of one second.

Transit times to your destination will travel over the best possible path, improving performance to your audience.

Level 3:

ge1-3.b1.chg.servercentral.net (209.120.155.5) 0.235 ms 0.544 ms 0.225 ms
gigabithernet8-0-515.ipcolo2.Chicago1.l3.net (63.210.100.205) 0.481 ms 0.387 ms
gige3-0.core2.Chicago1.Level3.net (209.244.8.189) 0.375 ms 0.790 ms 0.503 ms

Verio:

ge1-1.b2.chg.servercentral.net (64.202.111.22) 0.219 ms 0.220 ms 0.226 ms
63.223.3.9 (63.223.3.9) 0.482 ms 0.340 ms 0.359 ms
ge-4-3-0.r00.chcgil06.us.bb.verio.net (206.223.119.12) 0.481 ms 0.645 ms

Att:

vrid-10.gw.chg.servercentral.net (64.202.99.253) 0.330 ms 0.236 ms 0.287 ms
345.ge-4-0-1.mpr2.ord7.us.above.net (64.124.229.147) 0.612 ms 0.319 ms 0.325 ms
so-0-0-0.mpr1.ord7.us.mfnx.net (64.125.30.137) 0.469 ms 0.353 ms 0.355 ms
so-1-0-0.cr1.ord2.us.mfnx.net (64.125.30.142) 0.436 ms 0.407 ms 0.343 ms
pos-2-0.pr1.ord2.us.mfnx.net (64.125.30.162) 0.343 ms 0.534 ms 0.606 ms
gr1-h10.cgil.ip.att.net (192.205.31.205) 0.879 ms 0.812 ms 0.621 ms

Aol:

vrid-10.gw.chg.servercentral.net (64.202.99.253) 0.240 ms 0.164 ms 0.427 ms
ge1-1.core1.chg.servercentral.net (64.202.111.17) 0.909 ms 0.332 ms 0.229 ms
ge1-1.b2.chg.servercentral.net (64.202.111.22) 0.350 ms 0.335 ms 0.226 ms
ge3-4.as.eqxchiil.aleron.net (205.198.16.133) 0.358 ms 0.340 ms 0.361 ms
ge6-2.ar.eqxchiil.aleron.net (205.198.16.73) 0.232 ms 0.219 ms 0.234 ms
pop2-chi-P2-0.atdn.net (66.185.150.233) 0.610 ms 0.569 ms 0.474 ms

Cable and Wireless:

vrid-10.gw.chg.servercentral.net (64.202.99.253) 0.223 ms 0.266 ms 0.227 ms
ge1-1.core1.chg.servercentral.net (64.202.111.17) 0.674 ms 0.305 ms 0.220 ms
gige5-1.core2.Chicago1.Level3.net (209.244.8.25) 0.571 ms 0.443 ms 0.595 ms
so-4-1-0.bbr1.Chicago1.level3.net (209.247.10.165) 0.657 ms 0.681 ms 0.593 ms
so-6-0-0.edge1.Chicago1.Level3.net (209.244.8.10) 0.946 ms 0.807 ms 1.101 ms
bpr1-ge-2-3-0.ChicagoEquinix.cw.net (208.174.226.57) 1.436 ms 1.425 ms 1.474 ms

MFN:

vrid-10.gw.chg.servercentral.net (64.202.99.253) 0.294 ms 0.253 ms 0.208 ms
345.ge-4-0-1.mpr2.ord7.us.above.net (64.124.229.147) 0.444 ms 0.434 ms 0.342 ms
so-0-0-0.mpr1.ord7.us.mfnx.net (64.125.30.137) 0.451 ms 0.514 ms 0.686 ms

XO:

vrid-10.gw.chg.servercentral.net (64.202.99.253) 0.282 ms 0.180 ms 0.213 ms
ge1-1.core1.chg.servercentral.net (64.202.111.17) 0.350 ms 0.336 ms 0.230 ms
ge1-1.b2.chg.servercentral.net (64.202.111.22) 0.235 ms 0.212 ms 0.231 ms
ge3-4.as.eqxchiil.aleron.net (205.198.16.133) 0.367 ms 0.332 ms 0.359 ms
xo-peer.as.eqxchiil.aleron.net (204.157.5.214) 0.979 ms 0.967 ms 0.990 ms
p5-0-0.RAR1.Chicago-IL.us.xo.net (65.106.6.133) 1.599 ms 1.328 ms 1.361 ms