![1623 FARNAM logo]

The Cloud Gamer's Edge

The Interconnected Edge Data Center Holds the Key to the Future Success of Cloud Gaming

A number of Big Tech and gaming companies have launched cloud gaming services in recent years. There are more than two billion gamers on the planet, but until cloud gaming arrived, there was no device-agnostic means available to access on-demand video game content. While centralized cloud computing requires companies to store content in a limited number of locations, thus creating latency, edge computing enables the distribution of application processes at the edge of the network and as close to the cloud gaming end user as possible. As this eBook will explore, the interconnected edge data center, such as 1623 Farnam, can help cloud gaming platforms solve latency issues while delivering a high quality of experience and reliability.

The Opportunity:
Two Billion Gamers and Growing

With Big Tech and gaming companies launching cloud gaming services, including Google's Stadia, Microsoft's Project xCloud, Nvidia's GeForce Now, Sony's PlayStation Now, and Tencent's Start, cloud gaming is only getting started. On a subscription basis, users can now access a diverse library of video games on demand and streamed to their console, computer, tablet, television and even their smartphone.

Because content is not stored on the user's own hard drive, cloud gaming allows users to play without downloading or installing the actual game, as they would do with a console title. Additionally, this allows gamers to access a range of titles without the necessity of powerful, high-end processing personal computer of their own.

Hence, cloud gaming stands on the cusp of mass adoption, not unlike where Netflix stood in 2007 when it first introduced streaming, which allowed subscribers to instantly watch television shows and movies on their personal computers.

Cloud gaming is, in fact, software-as-a-service (SaaS), meaning cloud service providers deliver these videogames to end users via the Internet, which in turn increases the demand for low-latency connectivity and the mitigation of packet loss to ensure quality of experience. While a cloud service's performance varies in part on the end-user's home Internet speeds, it's equally important that the data traversing the network takes as short and uninterrupted a trip as possible from one's device to a data center and back again. The average end-to-end latency for cloud gaming is approximately 20 milliseconds.

At the dawn of cloud gaming era, Big Tech companies who own massive global networks of data centers are better prepared than others to succeed in an industry so reliant on infrastructure. But owning large data centers in a multiple locations isn't enough to deliver the service levels necessary for cloud gaming.

For this reason, even major cloud service providers lease space in colocation facilities proximate to their own. The most effective colocation providers in this business case have peering relationships with carriers, networks, and mobile and internet service providers (ISPs). These data centers operate as network traffic hubs that distribute data directly to where it needs to go.

The Importance of Interconnected Edge Data Centers to Cloud Gaming

While cloud gaming is off to an auspicious start, the centralized cloud, in and of itself, does not alone offer the connectivity to bring these platforms to life. Online gaming experiences are by nature interactive, and popular multiplayer games demand real-time response rates that the cloud cannot provide on its own, primarily due to the geographical location of cloud data centers and the limitations of latency.

In contrast, when cloud gaming companies colocate their IT infrastructure in proximity to network providers, this allows gaming businesses to maintain low latency, optimize performance, and provide the flexibility to support a sudden surge in users — for example, upon the release of a highly anticipated, hot new title. Cloud gaming also benefits from colocation facilities that are carrier-neutral and provide a range of connectivity options. Moreover, cloud gaming platforms gain significant advantages from interconnected edge data centers.

While centralized cloud computing requires companies to store content in a limited number of locations, or availability zones, edge computing enables the distribution of application processes at the edge of the network and as close to the end user as possible. An interconnected edge data center can help cloud gaming platforms solve latency issues when transferring data from the cloud to the end user while ensuring graphically-intensive video content is delivered with a high quality of experience and reliability.

To ensure real-time, interactive gameplay, Big Tech and gaming companies that develop and launch next-generation cloud gaming service platforms will need to move the processing power closer to the edge. If not, performance issues such as latency and service disruptions will undoubtedly drive gamers back to their consoles and the market potential of an exciting new gaming platform will be scuttled. The interconnected data center holds the key to the future success of cloud gaming.

1623 Farnam:
The Cloud Gamer's Edge

1623 Farnam is the interconnection point for the east-west and north-south routes of the country's largest carriers and provides a hub of secure on-ramps to the world's major cloud providers, including Google Cloud. For game developers, Google Cloud offers compute and networking services, database, analytics, and machine learning (ML) capabilities, as well as open source solutions that minimize the time and resources needed to manage a game's underlying infrastructure so developers can focus on building great titles.

As an interconnected edge data center located in Omaha, Nebraska, Big Tech and gaming companies with cloud gaming platforms gain the flexibility to leverage 1623 Farnam as part of a distributed computing architecture with secure, private interconnections with leading carriers and other service providers. 1623 Farnam is also host to the most geographically-centered Internet Exchange in the U.S., the Omaha Internet Exchange (IX). Today, more data is being generated at edge endpoints, overwhelming current networks. As a result, ultra-low latency and local access to multiple cloud options is now a number one priority for many businesses, including cloud gaming providers.

The only carrier-neutral edge data center in the region, 1623 Farnam provides access to 50 networking companies that have local, regional, national and international reach. Companies can leverage 1623 Farnam's Central U.S. location to peer at the edge with cloud providers, carriers, fiber and wireless network providers, and Fortune 500 enterprises. The secure data center can meet the proximity, low-latency and rapid scalability requirements that cloud gaming and other customers demand for their data-intensive workloads.

1623 Farnam provides quality colocation solutions within one of the fastest growing interconnected edge data centers in the Central United States. With 8MW of power and an existing N+1 infra-structure, our cloud gaming customers gain access to the space, reliable power and uptime they need to ensure a high quality, end-user experience and reliable uninterrupted play. *Game on!*

1623 Farnam Site Specifications

- 8 MW of power

- 75,000 square feet of total space with 6,400 square feet of space on each floor

- Private, secure entrance

- Rooftop space available

- Powered shell, build-to-suit, turnkey managed suites available

- Interconnectivity options available to carriers, cloud providers, fiber and wireless network providers, content providers and more

- N+1 UPS available, connected to Omaha Public Power District's redundant Power Ring

- Compliant with SOC2, PCI DSS, ISO, BCP

1623 FARNAM

To learn more about the advantages of 1623 Farnam's colocation solutions for enterprises, contact us.

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