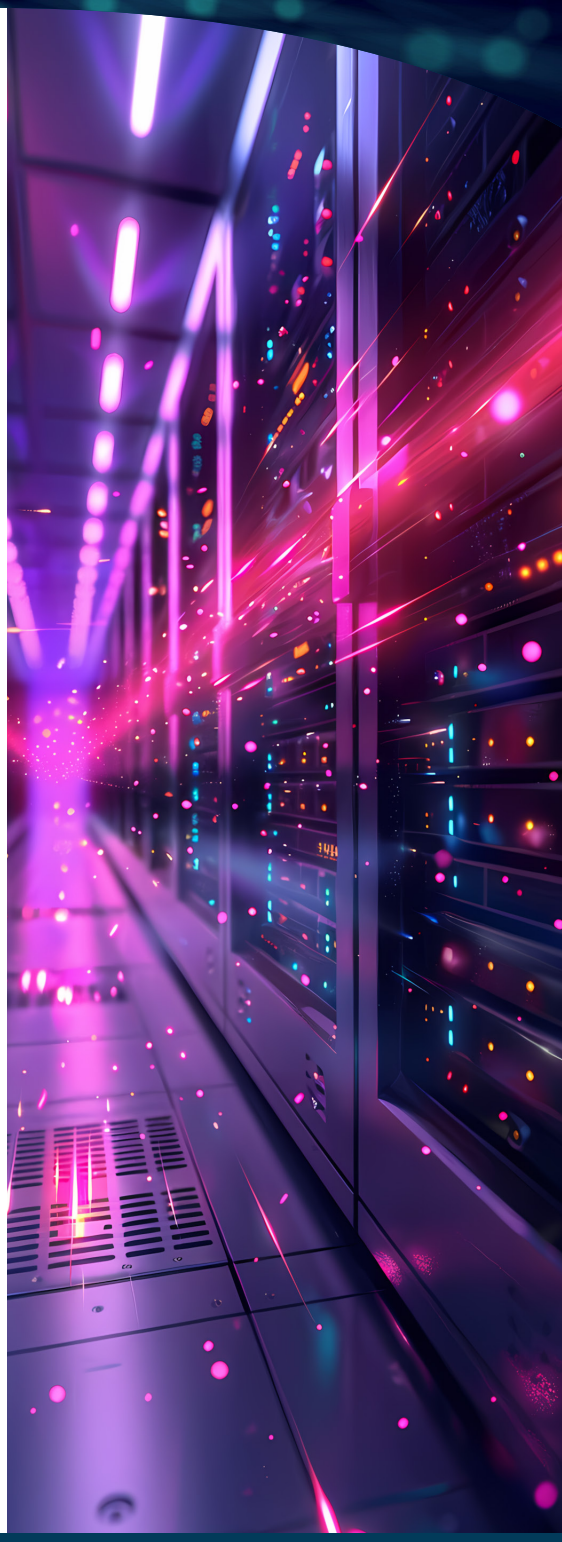
EXECUTIVE SUMMARY

Get Up to Speed on Latency: What Business Leaders Need to Know in 2024



The Growing Need for Speed

If you're hearing more questions about network performance at your organization these days, you're not alone. Until recently, the word latency was part of a specialized lingo reserved for network engineers, telecom carriers, and high-speed traders in the financial industry, where millions of dollars can be made or lost in milliseconds.

That's outdated thinking. The world has changed. Today, milliseconds matter to everyone.

Whether you're a boots-on-the-ground engineer or a CTO, CIO, CXO, CMO, or CEO, you need to understand how latency matters to your role, employees, and customers.

Most importantly, you need to know what you can do to ensure your network provider meets the increased latency demands of today's world where network speed is the key to business growth.

So Just What Is Latency?

Latency, also called lag, is the amount of time it takes for data to travel from point A to point B. The lower the latency, the faster the data gets to where it needs to go. That journey is usually measured in milliseconds. And, today, those milliseconds matter more than ever.

Business leaders know that a lag of only a few milliseconds — less than a blink of an eye — can affect everything from your website sales to employee satisfaction.

In other words, a low-latency network can become a competitive advantage in market.

Why has latency suddenly become so important?

Latency has always been important, but latency expectations are changing. Once, 200ms was acceptable for a good network experience. Today, 5-10ms is increasingly the goal. But the concern for latency has grown outside of the IT department because of multiple factors. Some are technological, others have roots in consumer behavior and business trends.

Technology Trends	Business Trends	Consumer Trends
Low latency is a requirement for next-generation technologies such as: ■ Artificial intelligence and automation ■ Online gaming and augmented reality ■ VoIP, video conferencing, streaming, and telemedicine ■ IoT (cars, traffic lights, medical devices, vacuums, doorbells) ■ Low latency enables natural conversations, fast acquisition and analysis of data, and real-time collaboration.	**The way we do business is changing, and networks are feeling the pressure due to:** ■ Increasing adoption of multiple cloud platforms ■ Reliance on big data and real-time analytics ■ Growth of work-from-home and hybrid work ■ Greater deployment of high-bandwidth apps In addition to sending data quickly between a server and an end-user, computers need to pass data swiftly to create a smooth experience for your customers and employees.	**Latency is key to meeting changing customer expectations:** ■ Preference for online shopping and digital-first experiences ■ Decreased patience with laggy apps and clunky experiences ■ Real-time customer service and instant replies from personal digital assistants Customers expect always-on, 24/7 experiences, Whether it's a live agent, AI-driven chatbots, or simply the ability to quickly process in less than a second.

connected medical devices will be deployed globally by 2026, amounting to more than 3,850 per smart hospital.

Source: IoT News

of organizations have workloads in the cloud in 2024.

Source: CloudZero

of shoppers will wait no more than three seconds for a site to load before abandoning a retail or travel site shopping cart.

Source: Think With Google

The Bottom Line

You need a network with the lowest latency possible to keep up with today's business trends. Your success depends on it.

Signs You're Suffering from High Latency Syndrome
Do any of these complaints sound familiar?

What You Hear	What We Hear
"This site takes too long. Great…because I'm having second thoughts on my purchase."	**High cart-abandonment rates**
"This company must have internet problems today. Oh, well. I'll just go to Amazon."	**Slow page-loading and payment-processing**
"Please hold while I find your account. My system is being a little slow today. I do apologize."	**Slower customer service times**
"Wait, wait…you just dropped out. Can you repeat what you just said? I missed it."	**Jittery video conferencing**
"I think I need a newer computer. Microsoft Teams is always glitchy for me"	**Sluggish cloud-based software**
"Ugh. I can't stand logging my time. This app is too slow. I've got other things to do."	**Slow adoption of cloud-based tools**
"Wait-oh-sorry, no…you go…didn't mean to interrupt…thought you were done. This is so frustrating. Can I just call you from my cell?"	**Choppy VoIP calls**
"I swear I sent it. Try refreshing. Look in your junk mail…Still no? Let me try from my personal account."	**Slow message queues**

If any of this sounds familiar, your company is likely suffering from HLS.
But it's curable. You just need the right fiber network provider.

How Do Your Cure High Latency?

Two of the biggest factors that affect latency in a network are distance and overall network quality.

Here's the role each plays.

Inside a fiber optic cable, light can travel about two-third the speed of light.

Whether near or far, it takes time to move data, and the further it travels, the longer it takes. Why?

Because data has a speed limit—the speed of light, or about 187,000 miles per hour. You could say that a pulse of light has a latency of about 8.3 seconds between the sun and the earth because that's how long it takes to get here. Inside a fiber optic cable, light can travel at about one-third the speed of light. Pretty darn fast, but even at top speed, latency is constrained by distance. That's why decreasing latency often comes down to location, location, location.

Famously, high-frequency traders, who make vast amounts of micro trades every day, leased space near stock market computers simply to reduce the distance data needs to travel when they place their orders, giving them a jump on the competition when placing bids.

While that may not be very practical for all businesses, it's still possible to improve lag caused by distance.

When choosing a provider, look for one with:

- Multiple data center presences in your region
- Optimized direct fiber routes
- An all-fiber network
- Infrastructure built for serving business needs

This will help ensure the shortest path for your data to travel.

Network Quality

The second factor that goes into low latency is network quality. How a network is built can make a huge difference.

Imagine a meandering cross-country trip in an old station wagon along crowded lanes versus a non-stop flight on a private luxury airplane (with a limo waiting for your data on the tarmac). Most networks send your data on the scenic route.

That's because many telecommunication networks have been cobbled together over many years, through mergers and acquisitions, with equipment from various manufacturers. On that type of network, your data follows convoluted routes and must negotiate "hops" across multiple networks rife with bottlenecks. And your network provider may not have end-to-end fiber – leaving your data on old-fashioned copper for the last mile of the journey.

But there's a better way. Some providers (like FirstLight) have designed purpose-built networks from the ground up, using fiber optic lines exclusively. They have optimized the routes their cables follow, seeking the straightest paths possible, to reduce the length of the cable. They have invested in equipment that is specific to improve performance.

To know what you're getting, there are some important questions you should ask your provider:

- How reliable is your network? What happens to my data if a segment of your network goes down? Where will my data go?
- What routes will my data follow? How straight a path? What percentage of the route is fiber?
- Is there a service-level agreement (SLA) guaranteeing the average latency you can expect from a network?

Your provider should be able to answer these questions — and if they can't, it's probably because you won't like the answer.

The First Light Difference: An Optimized Network for Ultra-Low Latency

FirstLight's fiber network was built for performance. Not only can we work with you to develop a strategy that aligns with your business needs, but we're also a network that isn't crowded with data headed to residential users.

Talk to our team of experts about leveraging our ultra-low latency network or working together on a plan to optimize your network.

Connect with us today at FirstLight.net