

# Data Center POST

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## The Benefits of using GigE Wireless



- Joe Schraml, marketing director at BridgeWave Communications ([www.bridgewave.com](http://www.bridgewave.com)), says:

For enterprises, there are several advantages of utilizing high-capacity (gigabit or more) **wireless** links to

replace fiber or aging copper-based circuits, both in terms of cost and of network performance.

On the cost side, gigabit wireless links provide a rapid return-on-investment relative to the costs of leasing high-speed circuits. Many enterprise customers opting for gigabit wireless links achieved ROI savings measured in months, rather than years compared to leasing fiber. A gigabit wireless link can provide fiber-equivalent performance for a reasonable one-time expenditure comparable to the annual cost of just one year of leasing a fiber-based service. In addition, enterprises are not bound to long term lease commitments with gigabit wireless as is the case with high-speed leased lines.

**Gigabit Ethernet** wireless links can be installed quickly, without the timely construction delays or right of way issues associated with trenching for fiber installations. Enterprises can quickly provision service to a new building or outpatient facility in a fraction of the time it would take to commission a fiber link between the buildings, allowing them to react quickly to changes in the business environment. In many cases when new fiber runs must be constructed, the initial installation costs for fiber services actually exceed the cost of installing a gigabit wireless system.

In addition to the significant savings realized by replacing leased lines with high capacity gigabit wireless links, or simply utilizing wireless links in new construction, businesses can future-proof their networks, and provide abundant capacity as new applications must be transported over the link or as the workforce continues to expand. Transmission rates provided by these gigabit wireless links mean that the intra-LAN network backbone connection will remain free of bottlenecks as application needs grow.

Regarding performance, gigabit wireless links provide transmission speeds at full-rate gigabit with very little latency, yielding a fiber-equivalent backbone link ideal for transporting real-time network services such as video and VoIP. With gigabit wireless links, there are no T1-to-IP protocol conversions to perform and no expensive edge devices to purchase, configure and maintain. Incorporating gigabit wireless systems into the company LAN is simple, as the Ethernet interfaces on the wireless system are compatible with the Ethernet switches and routers used on the network.

Lastly, **gigabit wireless** links provide the performance needed to centralize servers by removing the backhaul bottlenecks associated with using low-speed connections. The end user experiences the server connections as if they were physically located together. Another tangible benefit from consolidation comes from eliminating duplicated hardware costs and software licenses, not to mention facilities to house these additional

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## Data Center Post: The Benefits of usin...

servers. This savings could easily reach tens or hundreds of thousands of dollars. Finally, centralizing server gear greatly simplifies network administration and server management.

Aside from the copious amount of **bandwidth** available with gigabit wireless links, the use of the millimeter wave spectrum lends itself to inherently secure transmissions. Antennas at these millimeter wave frequencies of 60 GHz and 80 GHz have very narrow beamwidths, typically less than one degree, which focus RF energy directly on the opposite end of the link, with very little dispersion. As such, intercepting these signals would require a receiver to be directly in-line with the remote transmitter. It is highly unlikely that a rouge receiver could be placed in the direct line of site of the transmission path without the enterprise users knowledge. On the other hand, a 5 GHz unlicensed link has a beam width over 10 times as wide, meaning greater dispersion of the RF signal across the path, and the greater likely hood of interception.

Gigabit wireless links are inherently secure as mentioned above, however it is possible to further enhance the security of the link by layering 256-bit AES (Advanced **Encryption** Standard) security on top of physical layer security.

It's a given that as businesses grow, IT managers need to keep in mind their application and network backhaul need so they keep up and remain "future-proofed." Options for bandwidth include fiber, with good bandwidth connectivity, albeit at very expensive recurring monthly price points. Wireless systems operating in the unlicensed frequency bands offer adequate connectivity, but their interference and security issues have been documented herein. Higher-frequency wireless systems are often higher-capacity providing more bandwidth, often a gigabit, which can be many multiples of what enterprises currently use. Whatever they choose, IT managers need to settle on a wireless system that provides future-proof capacity and the piece of mind that the link installed today will be have the bandwidth to handle today's and tomorrow's applications.

Aside from the cost, performance, and centralization benefits of utilizing gigabit wireless bridges in the network, gigabit wireless bridges allow enterprises to control their own network infrastructure, rather than turning control and budget over to service providers they lease fiber from. Anomalies on the network are addressed on an enterprise's schedule, not the service provider's schedule. Additionally, as the business grows, gigabit wireless links can be deployed (or re-deployed) to allow the IT administrator to respond quickly to changes in the business environment.

Posted by Post Moderator at 9:07 AM

Labels: **Encryption**, **Wireless**

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Concerns**

**The Benefits of  
using GigE  
Wireless**

**A Wireless  
Enterprise**

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Protection:  
Antivirus &  
AntiSpam**

**Malware in the  
Enterprise:  
Devastating  
Effects**

