

Deploying 802.11n for Multimedia-Ready Networks

Overview

With the 802.11n draft 2.0 standard now available, businesses are examining the potential benefits this next-generation wireless technology can bring to their networks. While 802.11n delivers general performance improvements in the areas of throughput, link reliability, and predictability, the right wireless infrastructure is crucial to an organization's ability to leverage all that 802.11n has to offer.

While 802.11n can be beneficial for a variety of businesses, some environments are particularly well-suited to take advantage of the standard's throughput and reliability advancements.

The Challenge of Deploying a Network for Voice over Wireless

Many businesses are now seeking the collaboration and productivity benefits offered by mobile voice and video solutions. To support these applications, IT organizations must deliver a wireless network that is multimedia ready. In fact, organizations in the healthcare and retail industries, in particular, are already deploying voice and video for mission-critical applications. In healthcare, these include voice communications between hospital staff, physicians and nurses, as well as the sharing of imaging files such as X-rays and MRIs between staff members. In retail, these applications include PushToTalk applications for employee collaboration and streaming media for digital display units in stores.

When voice and video are added to a wireless network, however, a number of challenges arise. Because voice and video are latency-sensitive, they require higher levels of priority, predictability, and reliability than data applications. The same packet loss that would not significantly affect a data file can be completely disruptive to a voice call or video stream.

Businesses deploying multimedia applications have specific concerns for their wireless network, including the following:

- **Ensuring the quality and reliability of voice and video communications.** Interference can degrade the performance of sensitive applications like voice and video over Wi-Fi. Deploying a voice ready wireless network requires a focus on network design, deployment, and intelligent network services.
- **Pervasive wireless coverage.** Users expect wireless coverage for voice to be ubiquitous and always available. As a result, businesses must ensure that their wireless network extends into any location where users may require voice services, including hallways, stairwells, patios, and even bathrooms and elevators.

Meeting the Challenge of Voice over Wireless Environments with 802.11n and the Cisco Unified Wireless Network

802.11n uses multiple input, multiple output (MIMO) technology, resulting in a more reliable and predictable network coverage and application experience. MIMO decreases packet loss and provides a less variable and more deterministic network connection. With 802.11n and MIMO,

businesses can greatly improve the reliability and predictability of the network—a key requirement to help ensure the performance of latency- and jitter-sensitive applications like voice and video.

The Cisco® Unified Wireless Network delivers this consistent, reliable wireless networking experience today through its modular, 802.11n-ready design. The Cisco Unified Wireless Network includes the Cisco Aironet® 1250 Series Access Point, the only commercially available access point that is part of the Wi-Fi Alliance's test bed to certify compliance with the 802.11n draft 2.0 standard. Cisco has also conducted interoperability testing between its wireless infrastructure and Intel clients to ensure optimal performance in an 802.11n wireless network, further protecting the infrastructure investments of organizations and “future-proofing” their wireless networks.

Summary

802.11n delivers many benefits to the next generation of wireless networks, particularly those that are running latency- and jitter-sensitive multimedia applications such as voice and video. Businesses such as healthcare facilities and retail establishments that rely on voice and video applications to ensure smooth business operations can take advantage of the reliable and predictable coverage of 802.11n by deploying Cisco's next-generation wireless technology based on the 802.11n draft 2.0 standard. The Cisco Unified Wireless Network is modular and flexible and delivers the infrastructure businesses need today, while protecting their investments for the future.



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