

Cisco Design Guide at a Glance: Campus Wireless LAN Technology

Cisco Validated Designs

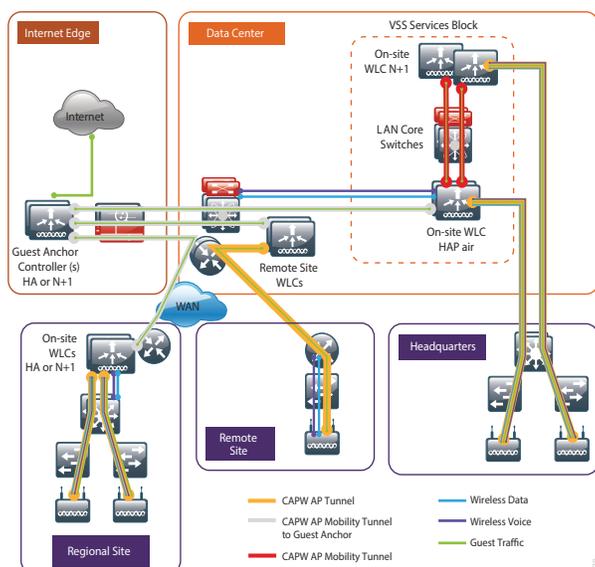
Cisco Validated Designs (CVDs) provide the foundation for systems design based on common use cases or current engineering system priorities. They incorporate a broad set of technologies, features, and applications to address customer needs. Cisco engineers have comprehensively tested and documented each CVD in order to ensure faster, more reliable, and fully predictable deployment.

This Design Guide summary provides you with an overview of the Cisco® Campus Wireless LAN Technology Design Guide, the key technology, the use cases it provides, and additional and related resources.

Campus Wireless LAN Technology

As users depend on the network to access the majority of the information they need to do their jobs and to transport their voice or video with reliability, the network must be able to provide resilient, intelligent transport. Cisco Validated Designs for Campus explain wireless connectivity for a complete network access solution that provides an efficient, fault-tolerant transport that can differentiate application traffic and provide intelligent prioritization and queuing of traffic along the most efficient route possible.

Please see the following figure for an overview of the Wireless LAN Design.



The Guide at a Glance:

Extend secure network access for your mobile workforce via wireless LAN

Provide guest access for contractors and visitors to your facilities via wireless LAN

Review products, models, and applications of wireless LAN technology



The Campus Wireless LAN Design Overview:

The Campus Wireless LAN Technology Design provides ubiquitous data and voice connectivity for employees and wireless Internet access for guests, regardless of their location within the organization. The Campus Wireless LAN Design is built around two main components:

- Cisco Wireless LAN Controllers (WLCs)
- Cisco Lightweight Access Points

Wireless LAN Use Cases

High Availability

As mobility continues to increase its influence in all aspects of our personal and professional lives, availability continues to be a top concern. The Campus Wireless LAN Technology supports high availability through the use of resilient controllers within a common mobility group. By using the cost-effective high-availability single sign-on (HA SSO) licensing model, Cisco wireless deployments can improve the availability of the wireless network with controller recovery times in the sub-second range during a Wireless LAN Controller disruption.

Multicast Support

Video and voice applications continue to grow as smartphones, tablets, and PCs are added to wireless networks in all aspects of our daily lives. In each of the wireless design models, the multicast support that users are accustomed to on a wired network is available wirelessly. Cisco supports multicast transmission for the onsite controller through the use of multicast-multicast mode, which uses a multicast IP address in order to more efficiently communicate multicast streams to access points.

Hz Band Select

Many of the wireless devices available today are dual-band and can operate in either the 2.4 GHz or 5 GHz band. Band Select delays the probe response to the 2.4 GHz probe by a few hundred milliseconds, allowing the access point to determine the right band for any device.

ClientLink

Cisco ClientLink wireless networking technology uses beamforming to improve the signal-to-noise ratio for all wireless clients and is not limited to those that support the 802.11n standard. ClientLink enables better throughput from access point to client by reducing retransmissions and facilitating higher data rates.

Guest Wireless

Using the existing Campus wired LAN for guest access provides a convenient, cost-effective way to offer Internet access to visitors and contractors.



Cisco Lightweight Access Points

Cisco lightweight access points work in conjunction with a Cisco Wireless LAN Controller (WLC) to connect wireless devices to the LAN while supporting simultaneous data-forwarding and air-monitoring functions. The Campus Wireless LAN Technology is based on Cisco 802.11ac wireless access points, which offer robust wireless coverage with up to nine times the throughput of 802.11a/b/g networks.



Cisco Wireless LAN Controllers

The Campus Wireless LAN Technology is a controller-based wireless design, which simplifies network management by using Cisco Wireless LAN Controllers (WLCs) to centralize the configuration and control of wireless access points.

Wireless LAN Use Cases

The Campus Wireless LAN Technology Design provides ubiquitous data and voice connectivity for employees and provides wireless Internet access for guests. Regardless of their location within the organization—on large campuses or at remote sites—wireless users have the same experience when connecting to voice, video, and data services.

The benefits of the Campus Wireless LAN Technology Design include:

- Productivity gains through secure, location-independent network access – Measurable productivity improvements and communications.
- Additional network flexibility – Hard-to-wire locations connected wirelessly, without costly construction.
- Cost-effective deployment – Adoption of virtualized technologies within the overall wireless architecture.
- Easy to manage and operate – From a single pane of glass, centralized control of a distributed wireless environment.
- Plug-and-play deployment – Automatic provisioning when an access point is connected to the supporting wired network.
- Resilient, fault-tolerant design – Reliable wireless connectivity in mission-critical environments, including complete RF-spectrum management.
- Support for wireless users – Bring-your-own-device (BYOD) design models.
- Efficient transmission of multicast traffic – Support for many group communication applications, such as video and push to talk.



Get the Full Story

For the full Cisco Validated Design Guide Summary, which details wireless LAN design and use cases for Cisco's Campus Wireless LAN Design Guide, download it here:

[View Full Summary](#)



Connect

For further information on all the CVDs referenced in the design summary, you can access them here:

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