Cisco Wireless LAN Planning and Design Service

Increase the accuracy, speed, and efficiency of deploying a secure Cisco® Unified Wireless Network solution.

Take a Proactive Approach to Deploying a Secure Wireless LAN

Cisco and our Wireless LAN Specialized Partners help you to design, build, and operate a secure wireless network:

- Respond to new business challenges for wireless LAN network upgrades
- Design security into how you access business-critical applications
- Securely deploy rich media mobile collaboration tools
- Scale connectivity to diverse mobile devices with a next-generation wireless solution
- Increase wireless LAN performance, management, and security
- Speed migration using proven leading practices
- Lower operating cost through improved wireless LAN management

Deploying a Cisco Unified Wireless Network Solution

As users become increasingly mobile and business applications demand additional bandwidth, advanced wireless services are critical to helping companies maintain innovation, agility, and differentiation. In this environment IT managers are tasked with building a highly available integrated network that enables secure mobility services, provides high-performance rich media collaboration, and improves the overall operating efficiency through tight integration of wired and wireless networks. When enabling business mobility in a converged environment, the challenge is to design, build, and operate a mobility solution aligned with current business requirements but with the flexibility to meet changing market and organizational demands.

Business Success Through an Architectural Approach

By combining the scalability of the Cisco Unified Wireless Network with the performance of the IEEE 802.11n standard and CleanAir technology, Cisco helps businesses create a worldwide collaborative working environment, including support for the rapidly proliferating Wi-Fi-enabled phones and tablets. Professional services from Cisco and our wireless LAN specialized partners facilitate a smooth transition to these next-generation wireless network capabilities by taking an architectural approach. Based on proven methodologies for planning and deploying end-to-end solutions with secure voice, video, and data and years of experience designing and implementing some of the world's most complex enterprise-class wireless networks, our specialists can help you optimize mobile connectivity to transform your business operations.

Enable Business-Critical Mobility Applications

The Cisco Unified Wireless Network is designed to support real-time business-critical applications and create a secure, mobile, collaborative workplace for organizations deploying wireless LANs. Whether you already have a wireless network in place or are building a new wireless solution, our services can help you create a sound, scalable wireless design that enables rich media collaboration. This service is designed to help you incorporate a variety of mobility services and applications allowing for smooth solution integration while avoiding costly delays during implementation.

- **Voice and Video**: Create the dependability, performance, and security needed for sensitive Wi-Fi voice and video applications including support for phones and tablets
- **Guest Access**: Allow guests, vendors, and partners to access the Internet while keeping your internal network secure and easy to manage
- **Outdoor Wireless**: Deploy a secure and cost-effective outdoor wireless solution with a design that transparently integrates voice, data and video applications

- **Context-Aware**: Increase the accuracy, speed, and efficiency of your context-aware solution to locate users and track critical business assets on the network.
- **Adaptive Wireless Intrusion Prevention Systems**: Protect your network from wireless threats with a solution designed to optimize RF coverage and performance.

Assistance includes configuration of wireless LAN security, controllers, wireless LAN network management, Cisco Mobility Services Engine, Cisco Wireless Control System, the 802.11x standards, Cisco CleanAir, and Cisco access points to support productivity-enhancing mobility applications and diverse Wi-Fi-enabled devices, including phones and tablets.

Cisco Wireless LAN Planning and Design Service

The Cisco Wireless LAN Planning and Design Service offers seven focused deliverables to help you successfully deploy your secure Cisco Unified Wireless Network solution and advanced mobility applications:

- Cisco Wireless LAN Architecture Design
- Cisco Wireless LAN RF Design
- Cisco Wireless LAN Detailed Design
- Cisco Wireless LAN Design Validation
- Cisco Wireless LAN Implementation
- Cisco Wireless LAN Deployment Validation
- Cisco Wireless LAN Knowledge Transfer

Cisco Wireless LAN Architecture Design

Improve the availability, security, management, and performance of your wireless network solution by working with Cisco wireless engineers to validate your business and technical requirements and to develop a custom, wireless LAN architecture design. Helping you and your partners migrate to next-generation wireless network capabilities, the Wireless LAN Architecture Design service can help reduce expensive rework during the design phase by identifying and validating required architecture, technology, and features early in the solution lifecycle. (See Table 1.)

Cisco and our partners offer two levels of support:

- **Cisco Wireless LAN Architecture Design Review**: Remote review of an existing wireless LAN architecture design to determine if it meets your business objectives and technical requirements
- **Cisco Wireless LAN Architecture Design Development:** Validation of your organization's architecture design requirements and development of a custom, wireless LAN architecture design

Table 1. Cisco Wireless LAN Architecture Design Benefits, Activities, and Deliverables

<table>
<tr><th colspan="2">Benefits</th></tr>
<tr><td colspan="2">Cisco Wireless LAN Architecture Design helps you to:
Quickly respond to your changing business environment by validating requirements for wireless LAN infrastructure changes
Provide secure mobile access to business-critical applications with an integrated wireless design that delivers high performance and reliability
Securely deploy rich media collaboration tools with expert guidance on how best to support high-bandwidth mobility applications
Optimize the performance, availability, and security of your wireless network infrastructure
Improve the return on your investment and speed solution deployment through time-tested leading practices and methodologies</td></tr>
<tr><th>Wireless LAN Architecture Design Review
Activities and Deliverables</th><th>Wireless LAN Architecture Design Development
Activities and Deliverables</th></tr>
<tr><td>Analyze technical requirements
Remotely review performance, scalability, security, and availability requirements for the proposed wireless LAN technology and mobility services
Identify Cisco wireless advanced technologies that support requirements for wireless LAN client devices, infrastructure, management, and mobility services
Review existing wireless LAN architecture design
Analyze readiness of the existing infrastructure to support new wireless LAN services and mobility applications
Develop a Wireless LAN Architecture Design Review Report
Document gaps between requirements and the existing wireless network and make recommendations for improvement to the architecture design for optimal performance, security, and reliability</td><td>Analyze technical requirements
Review requirements for the proposed wireless LAN technology and mobility services, including performance, scalability, security, and availability
Assess technologies that meet design requirements
Identify Cisco wireless advanced technologies that support requirements for wireless LAN client devices, infrastructure, network management, and mobility services
Analyze potential network infrastructure gaps
Analyze the readiness of the infrastructure to support the proposed wireless LAN technology, services, and applications
Analyze potential gaps of integrating new wireless LAN technology and mobility services with the existing wireless infrastructure
Develop a Wireless LAN Architecture Design
Create a custom, high-level wireless LAN architecture design that includes:
Wireless LAN architecture design specifications
Wireless LAN security design specifications
Required data rates, target throughput, and desired availability
Network management design specifications
Software release recommendations for access points, controllers, Mobility Services Engine (MSE), and Wireless Control System (WCS)
Client device recommendations</td></tr>
</table>

Cisco Wireless LAN RF Design

Build a solid radio frequency (RF) infrastructure as the foundation for your wireless network with a comprehensive RF site assessment and design. By validating wireless requirements and performing an RF site survey, we can help you make informed decisions about how to design your wireless LAN network to provide secure access in the desired coverage area. (See Table 2.)

Cisco and our partners provide two levels of Wireless LAN RF Design support:

- **Cisco Wireless LAN RF Design Review**: Remote review of an existing wireless LAN RF design to determine if it meets your business objectives and technical requirements
- **Cisco Wireless LAN RF Design Development:** Validation of your organization's RF design requirements and development of a custom RF design

Table 2. Cisco Wireless LAN RF Design Benefits, Activities, and Deliverables

Benefits	
Cisco Wireless LAN RF Design helps you to: • Improve wireless performance and reliability with an RF design that addresses coverage and interference challenges • Reduce deployment costs and delays by identifying RF requirements early in the planning process • Reduce the risk of service disruption caused by facility and communication device interference	
Wireless LAN RF Design Review Activities and Deliverables	**Wireless LAN RF Design Development Activities and Deliverables**
Analyze technical requirements • Remotely review requirements for the proposed wireless LAN RF design **Review an existing RF design** • Remotely evaluate the existing wireless LAN RF design, including building schematics and RF performance and coverage maps, to determine if it meets customer business objectives and technical requirements • Review network device configurations and technical documentation • Identify potential radio frequency (RF) coverage, interference, or contention issues **Create the Wireless LAN RF Design Review Report** • Document gaps between requirements and the existing RF design and make recommendations for improvement to address coverage, interference, and contention issues	**Analyze technical requirements** • Review requirements for the wireless LAN RF design, including required signal strength, signal to noise ratio (SNR) design levels, data rates, target throughput, and desired availability and capacity **Perform onsite verification** • Inspect, measure and document the physical plant and wireless network • Identify facility structures and communication devices that might interfere with radio signals or placement of wireless transmitters and access points • Scan for significant wireless LAN networks or major sources of non-802.11 interference • Test propagation characteristics, coverage area, and signal quality **Create a Wireless LAN RF Design** • Create a custom RF design that includes: ◦ Physical locations of potential existing access points ◦ Recommended access point power and channel settings ◦ Antenna type, location, and orientation specifications ◦ Power, mounting, and cabling specifications ◦ Any known or measured sources of interference

Cisco Wireless LAN Detailed Design

Whether you are expanding your wireless network to support next-generation technology or a new mobility application, Cisco can help you to design your wireless network solution providing ongoing knowledge transfer to your staff. The Cisco Wireless LAN Detailed Design service helps you develop an in-depth, implementation-ready detailed design for your new wireless solution. By building in leading practices for reliability, security, scalability, and performance, Cisco wireless experts help accelerate the adoption of new technologies and avoid costly delays and disruptions during deployment. (See Table 3.)

Cisco and our partners offer two levels of Wireless LAN Detailed Design support:

- **Cisco Wireless LAN Detailed Design Review**: Remote review of an existing wireless LAN detailed design to determine if it meets your business objectives and technical requirements
- **Cisco Wireless LAN Detailed Design Development:** Validation of your organization's detailed design requirements and development of a custom, wireless LAN detailed design

Table 3. Cisco Wireless LAN Detailed Design Benefits, Activities, and Deliverables

Benefits	
Cisco Wireless LAN Detailed Design helps you to: • Successfully scale connectivity to diverse mobile devices with a next-generation wireless network design • Improve the speed and efficiency of technology migration and reduce deployment costs • Reduce expensive, time-consuming network redesign by creating a well-engineered design • Increase application performance, resiliency, and availability by specifying optimal hardware and software releases, features, and functionality • Improve deployment team and operations staff proficiency by providing continuous knowledge exchange	
Wireless LAN Detailed Design Review Activities and Deliverables	**Wireless LAN Detailed Design Development Activities and Deliverables**
Perform analysis of technical requirements • Remotely review requirements for the proposed wireless LAN technology and mobility services, including performance, scalability, security, and availability **Assess technologies that meet design requirements** • Identify Cisco wireless advanced technologies that support requirements for wireless LAN client devices, infrastructure, wireless network management, and mobility services **Review existing wireless LAN detailed design** • Review the wireless LAN detailed design and analyze the readiness of the existing infrastructure to support the proposed wireless technology and services **Create the Wireless LAN Detailed Design Review Report** • Document gaps between requirements and the existing wireless design and make recommendations for improvement to optimize performance, security, and reliability. Design review includes: ◦ Wireless LAN security, management and performance features of the Cisco WCS, Cisco Wireless LAN Controller (WLC), Cisco access point, and Cisco MSE ◦ Access point configuration ◦ Wireless LAN client devices ◦ Wireless LAN security ◦ Wireless LAN network management	**Analyze technical requirements** • Review requirements for the proposed wireless LAN technology and mobility services, including performance, scalability, security, and availability • Complete detailed design discovery to integrate technical requirements and goals into the detailed design **Assess technologies that meet design requirements** • Identify Cisco wireless technologies that support requirements for wireless LAN client devices, wireless LAN infrastructure, wireless LAN network management, and wireless LAN mobility services **Analyze potential network infrastructure gaps** • Review the existing wireless LAN network, including device configurations, and analyze the readiness of the infrastructure to support the proposed wireless LAN technology and services • Analyze gaps of integrating new wireless LAN technology and services with the existing infrastructure, including wireless LAN security, wireless LAN network management, Cisco WCS, Cisco WLC, Cisco wireless LAN access points, and the Cisco MSE **Develop a Wireless LAN Detailed Design** • Create a custom Wireless LAN Detailed Design that includes: ◦ Wireless LAN network technology ◦ Network topology, including switching and routing design and IP addressing ◦ Access point configuration ◦ Client device recommendations ◦ Software protocols and feature configurations ◦ Wireless LAN network management specifications ◦ Wireless LAN security specifications ◦ Software release recommendations for access points, controllers, Mobility Services Engine (MSE), and WCS ◦ Sample configurations for Cisco wireless devices

Cisco Wireless LAN Design Validation

Cost-effectively deploy a new wireless solution by working with Cisco wireless engineers to validate that your detailed design meets business and technical requirements, including leading practices for wireless LAN security, management, and performance. Providing design expertise for features and functionality of the Cisco WCS, the Cisco WLC, wireless LAN security, wireless LAN network management, wireless LAN controllers, Cisco wireless LAN Access Point, including 802.11x and CleanAir capabilities, as well as Cisco Mobility Service Engine applications, we help you validate your design through rigorous test plan and implementation support. (See Table 4.)

Table 4. Cisco Wireless LAN Design Validation Benefits, Activities, and Deliverables

Benefits
Cisco Wireless LAN Design Validation helps you to: • Accelerate adoption of your new wireless solution by validating the design meets end-user service requirements • Reduce costly delays and rework when implementing a new mobility solution by testing the design prior to implementation • Broaden and deepen your wireless LAN design expertise through knowledge transfer
Activities and Deliverables
Develop Wireless LAN Design Validation Test Plan • Assist in the development of the Design Validation Test Plan, including objectives, scope, and acceptance criteria. Test elements may include: ◦ Network topology and services ◦ Implementation procedures ◦ Device configuration ◦ Test equipment ◦ Test cases and procedures ◦ Failure recovery procedures ◦ Test schedule **Provide validation testing support** • Assist with test implementation in a lab or pilot environment, including configuration, tuning and troubleshooting • Assist with the execution of the Wireless LAN Design Validation Test Plan, including features, functionality, compatibility, and software applications • Document test results and any gaps between requirements and the Wireless LAN Detailed Design **Update the Wireless LAN Detailed Design** • Make recommendations to the Wireless LAN Detailed Design for optimal performance, security, and reliability

Wireless LAN Implementation

Improve deployment efficiency, accuracy, and success with support from Cisco wireless LAN engineers using sound deployment methodology based on leading practices. The Wireless LAN Implementation service helps you to develop a detailed, site-specific plan for implementing the new wireless LAN solution, including the procedures, configurations, and testing required to successfully deploy and commission the technology. Cisco wireless LAN engineers guide and assist your team before, during, and after deployment of Cisco wireless technology and mobility applications, including wireless LAN security, wireless LAN network management, wireless LAN Controllers, Cisco MSE, Cisco Wireless Control System, 802.11x, Cisco CleanAir, and Cisco access points. (See Table 5.)

Cisco and our partners provide several Wireless LAN Implementation services:

- **Wireless LAN Implementation Plan Review**: Review of an existing wireless LAN implementation plan and provide recommendations for improvement
- **Wireless LAN Network Implementation Plan Development**: Develop a plan for implementing the new wireless LAN technology or mobility solution, detailing tasks required to successfully deploy and commission the technology
- **Wireless LAN Test Plan Development:** Develop a detailed test plan to demonstrate that the wireless LAN solution meets operational, functional, and performance requirements

- **Cisco Wireless LAN Configuration Review:** Provide remote review and support for the configuration of wireless LAN security, wireless LAN network management, wireless LAN Controllers, Cisco MSE, Cisco Wireless Control System, 802.11x, Cisco CleanAir, and Cisco access points
- **Cisco Wireless LAN Deployment:** Configure, test, and verify a wireless LAN technology implementation to validate that the deployment meets detailed design, implementation plan, and test plan specifications

Table 5. Cisco Wireless LAN Implementation Benefits, Activities, and Deliverables

<table>
<tr><th colspan="2">Benefits</th></tr>
<tr><td colspan="2">Cisco Wireless LAN Implementation helps you to:
Reduce delays and costly rework during implementation by creating a detailed implementation plan
Enable a smooth migration by testing detailed deployment procedures prior to production cutover
Reduce the risk of disruption by planning for acceptance testing, failure recovery, and risk mitigation
Successfully deploy the new technology by following an in-depth, detailed implementation process based on leading practices</td></tr>
<tr><th>Wireless LAN Implementation Plan Review
Activities and Deliverables</th><th>Wireless LAN Network Implementation Plan Development and
Wireless LAN Test Plan Development
Activities and Deliverables</th></tr>
<tr><td>Review an existing Wireless LAN Network Implementation Plan
Understand the customer’s implementation plan objectives and assess an existing implementation plan, including implementation procedures, configurations, test cases, and acceptance criteria
Develop the Wireless LAN Implementation Plan Review Report
Documents gaps between customer requirements and the existing Wireless LAN Network Implementation Plan and Wireless LAN Detailed Design
Makes recommendations for changes to Wireless LAN Implementation Plan to allow for optimal migration, reliability, and performance</td><td>Develop the Wireless LAN Network Implementation Plan
Collect and verify wireless LAN network implementation requirements
Develop the Wireless LAN Network Implementation Plan, including implementation scope, activities, configurations, and acceptance criteria
Develop the Wireless LAN Deployment Test Plan
Collect and verify wireless LAN deployment test plan requirements
Develop the Wireless LAN Deployment Test Plan, including test cases and exit criteria</td></tr>
<tr><th>Wireless LAN Configuration Review
Activities and Deliverables</th><th>Wireless LAN Deployment
Activities and Deliverables</th></tr>
<tr><td>Provide remote configuration review of wireless LAN security, Cisco wireless LAN Controllers, Cisco Wireless Control System, Cisco MSE, and Cisco access points
Assess gaps between design requirements and proposed configurations
Make recommendations to wireless LAN configurations for optimal performance, reliability, and security
Recommend wireless LAN controllers, Cisco WCS, Cisco MSE, and Cisco access point software versions
Provide remote wireless LAN configuration guidance</td><td>Collect and verify implementation requirements
Review implementation strategy, plan and requirements
Validate deployment prerequisites on the existing wireless LAN infrastructure
Review and evaluate existing network documentation and network designs
Assist with implementation planning activities
Recommend changes to the existing Wireless LAN detailed design, implementation plan, and test plan
Provide device-specific configuration recommendations
Provide hardware and software version recommendations
Perform deployment activities
Verify all hardware and software versions and deploy required upgrades
Make necessary hardware and software configuration changes
Execute the Wireless LAN Test Plan test cases and evaluate results against acceptance criteria
Document implemented components, devices, and applications
Develop the Wireless LAN Configuration Templates and Checklists, including configuration activities, instructions, and as-built specifications
Update the Wireless LAN Detailed Design to document implemented components, devices, and applications to reflect the final as-built design</td></tr>
</table>

Wireless LAN Deployment Validation

By assessing the architecture, operational status, and security of newly implemented wireless LAN technology and mobility solutions, Cisco can work with you and your partners to validate that the wireless deployment meets your service-level goals for performance, security, and reliability. (See Table 6.)

For a comprehensive validation of your wireless LAN deployment, Cisco provides the following two services:

- **Cisco Wireless LAN Deployment Validation**: Remote assessment to validate the architecture, performance, and security of your wireless LAN implementation
- **Cisco Wireless RF Deployment Validation:** Onsite, in-depth RF analysis of a selected portion of your network to validate that requirements for RF coverage, performance and reliability are met

Table 6. Cisco Wireless LAN Deployment Validation Benefits, Activities, and Deliverables

<table>
<tr><th colspan="2">Benefits</th></tr>
<tr><td colspan="2">Cisco Wireless LAN Deployment Validation helps you to:
Validate your wireless network deployment by identifying architectural gaps and deviations from leading practices
Determine that the performance of your wireless LAN meets service-level goals for business-critical mobility applications
Validate the RF environment for coverage, interference, and general performance
Verify the security of your wireless LAN network by identifying vulnerabilities and deviations from leading practices
Protect your investment by extending the reliability, performance, and security capabilities of the existing wireless LAN infrastructure</td></tr>
<tr><th>Wireless LAN Deployment Validation
Activities and Deliverables</th><th>RF Deployment Validation
Activities and Deliverables</th></tr>
<tr><td>Perform a remote wireless LAN assessment
Review the existing wireless LAN network, including detailed designs, implementation plan specifications, and device configurations
Collect information from the existing wireless LAN network and evaluate the implementation for redundancy, security, reliability, and performance
Review wireless device configurations and compare with Cisco recommended leading practices
Evaluate security vulnerabilities in the wireless LAN environment
Assess Cisco Wireless LAN Controller deployment for redundancy and scalability
Create the Wireless LAN Deployment Validation Report
Document gaps between requirements and the existing wireless network implementation and make recommendations for improvement for optimal performance, security, and reliability</td><td>Review existing wireless LAN implementation
Review the existing wireless LAN network, including the wireless LAN detailed design, the RF design, and wireless LAN implementation plan
Perform an onsite RF assessment
Travel onsite to perform a detailed RF analysis of a selected portion of the wireless LAN network
Measure the actual RF signal coverage of the wireless network
Perform RF interference analysis to identify specific sources adversely affecting wireless network performance
Create the RF Deployment Validation Report
Provide a summary of the performance gaps in the wireless LAN infrastructure and make recommendations for improvement</td></tr>
</table>

Wireless LAN Knowledge Transfer

Prepare your staff to effectively design, deploy, manage, and optimize your Cisco wireless LAN solution with formal and informal training and ongoing guidance throughout wireless LAN planning, design, and implementation activities. (See Table 7.)

Table 7. Cisco Wireless LAN Knowledge Transfer Benefits, Activities, and Deliverables

Benefits
Cisco Wireless LAN Knowledge Transfer helps you to: • Enhance wireless LAN staff skills for designing and deploying wireless technology and mobility services • Reduce wireless LAN network operating costs through training to improve wireless LAN management and maintenance • Improve staff productivity with training on advanced wireless technology, services, and applications • Reduced mean time to resolution through training targeted to improve operational proficiency
Activities and Deliverables
Formal knowledge transfer • Conduct knowledge transfer sessions during design and implementation to communicate leading practices for designing, deploying, operating and managing wireless LAN solutions **Informal knowledge transfer** • Provide informal mentoring and guidance throughout design and implementation **Ongoing consultation** • Answer questions as needed for a limited period after design and deployment project completion

Benefits

The Cisco Wireless LAN Planning and Design Service helps you meet your business and technical goals with a customized wireless deployment based on the industry-proven performance, security, and scalability of Cisco Unified Wireless Network. This service improves and supports deployment success helping you to cost-effectively support mobile access to business-critical applications, real-time mobile collaboration, and the development of new business models based on mobility solutions.

These services help you to:

- **Improve the speed and efficiency of migration** and reduce deployment costs by identifying and planning in advance for necessary infrastructure changes
- **Provide secure mobile access to business-critical applications** with an end-to-end wireless design that delivers high throughput and reliability
- **Securely deploy collaboration tools** with expert guidance on how best to support rich media applications such as voice and video
- **Increase wireless performance, management, and security** with a design that reduces the risk of unexpected downtime
- **Lower operational expense** by applying leading practices and proven methodologies for efficient performance and simplified wired and wireless network management
- **Successfully scale connectivity to the proliferation of diverse mobile devices**, including phones and tablets, with a next-generation wireless network design

Why Cisco Services

Realize the full business value of your technology investments more quickly with intelligent, customized services from Cisco and our partners. Backed by deep networking expertise and a broad ecosystem of partners, Cisco Services enable you to successfully plan, build, and run your network as a powerful business platform. Whether you are looking to quickly seize new opportunities to meet rising customer expectations, improve operational efficiency to lower costs, mitigate risk, or accelerate growth, we have a service that can help you.

For More Information

For more information about Cisco Wireless LAN Services, visit www.cisco.com/go/wirelesslanservices or contact your local account representative.

Cisco Services.

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