

## Why Should I Care About Wireless Mobility?

Increasing globalization, flat budgets, and growing customer demand for immediacy are leading organizations to use mobility as a way to gain business advantage. Mobility solutions can potentially help you increase revenue and control costs to facilitate:

- Increased customer responsiveness
- Faster reaction to market events
- Competitive edge through real-time data access

Wireless networks are a primary component of a mobility solution, helping to increase productive time inside the enterprise. Wireless networks facilitate real-time access and collaboration with people, applications, and network resources across campuses, branch offices, and remote locations using a variety of devices.

## What Problems Does Wireless Mobility Solve?

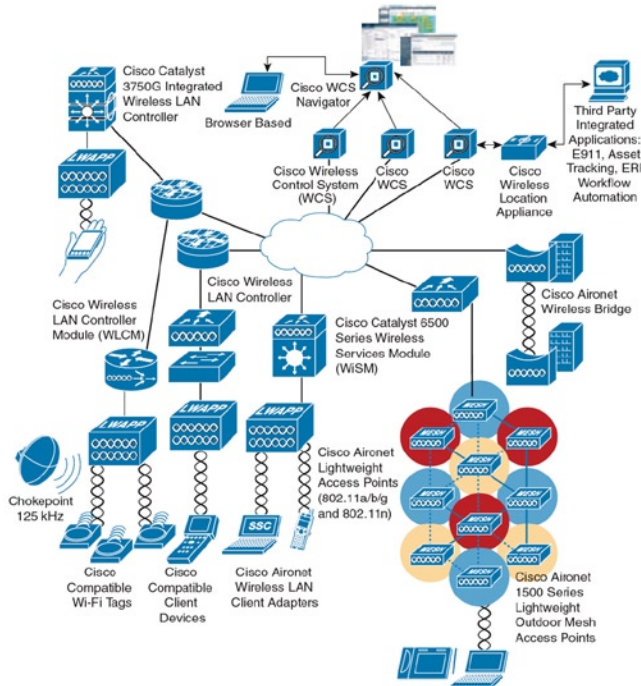
With employees on the move both within and outside the business, maintaining productivity and responsiveness can be challenging. Even on the go, employees require access to their critical data applications; the ability to collaborate with colleagues, partners, and customers; and awareness of the location and status of assets and people that are critical to completing business processes.

## Mobility on Cisco Catalyst Series Switches

Cisco has defined a wireless architecture that provides tight integration and unification of wired and wireless networks. By taking an end-to-end systems solution view, this architecture allows the wired network infrastructure to offer sophisticated capabilities that support primary wireless applications and attributes such as security, voice over wireless LAN, guest access, and location services.

Figure 1 shows the Cisco unified wireless architecture for the enterprise.

**Figure 1. Cisco Unified Wireless Architecture for the Enterprise**



Can your wired infrastructure provide effective support for your mobile network? The Cisco® Catalyst® Series switches contain many integrated tools that maintain the efficient operation of a wireless mobility network.

- **Integrated security:** All Cisco Catalyst Series switches support per-port 802.1x authentication, restricting users' access to the network until they have been properly identified, thus maintaining the privacy of data. 802.1x can integrate with the Cisco Network Admission Control (NAC) appliance to provide guest access over the wireless LAN. Security can be further augmented with the security modules available on the Cisco Catalyst 6500 Series Switches.
- **High availability:** Whether wired or wireless, network availability is always a concern. This might be especially true in the case of voice over wireless LAN. The integrated availability capabilities of the Cisco Catalyst Series switches provide fast convergence

in case of service outages to help ensure that voice packets are not dropped. On the modular Cisco Catalyst 4500 and 6500 Series Switches, Cisco In-Service Software Upgrade and Cisco Nonstop Forwarding with Stateful Switchover can provide network recovery in the subsecond range. The flagship of the Cisco switches, the Cisco Catalyst 6500 Series Switch, is powered by Cisco IOS® Software Modularity to isolate faults and further increase system availability.

- **Power over Ethernet:** All Cisco Catalyst Series switches support industry standard 802.3af Power over Ethernet (PoE), as well as Cisco enhanced PoE (ePoE), providing up to 20 watts (W) of power per port to drive the newest class of 802.11n wireless access points. Because power is negotiated, the appropriate power level is always supplied for the end device. As PoE-powered devices become more intelligent, the demand for power will increase. The Cisco Catalyst 4500 Series Switch can supply up to 30W of power per port today, and the 8700W power supply for the Cisco Catalyst 6500 Series Switch helps ensure that it is ready for future 802.3at PoE requirements from the next generation of PoE wireless access points and other devices.
- **Embedded Event Manager (EEM)** is an integrated event-driven scripting language for Cisco IOS Software devices. One of its more interesting applications is the use of a time-based script to disable ePoE ports after normal business hours. In addition to providing significant power savings, this also increases security. Enhanced PoE wireless access points can be effectively disabled overnight and are no longer a target for network intrusions.
- **Quality of service:** While wireless speeds continue to increase, it is important to remember that wireless connectivity is provided over a shared medium. Thus, it is important to help ensure the user experience. All Cisco Catalyst Series switches support industry-leading Cisco quality of service (QoS). Such capabilities are vital for latency-sensitive



# Mobility on Cisco Catalyst Series Switches: The Wired Side of Wireless

applications such as voice over wireless LAN. With Cisco QoS, you can help ensure deterministic behavior of critical traffic and also prioritize it over other network traffic, whether wired or wireless.

- **Virtualization:** One of the most frequent applications of wireless networks is to provide guest access. All of the Cisco Catalyst Series switches support network virtualization using both VLAN and Virtual Routing and Forwarding (VRF) technology. VLANs and VRFs provide an excellent method of enabling guest access, while still maintaining appropriate levels of security and privacy for corporate assets. In addition, Cisco Catalyst Series switches also enable a voice VLAN, so that voice over wireless LAN traffic can be isolated and provided with better QoS treatment.
- **Location services:** The current generation of Cisco Catalyst Series switches provides location information through a Simple Network Management Protocol (SNMP) query to the switch. Looking slightly into the future, as location-based services become more prevalent, the Cisco Catalyst Series switches will provide transparent support for unified location protocol services with a simple software upgrade. Unified location services allow you to quickly locate any Wi-Fi device to support enhanced network security, management, and troubleshooting as well as enable location-based applications through a rich, open API.

## Integrated Services on the Cisco Catalyst 6500 Series Switch

If you are looking for a validated, scalable, and secure design for your wireless network, the Cisco Catalyst 6500 Integrated Secure Wireless Solution includes the NAC appliance and the integrated wireless and security services provided by the Wireless Service Module (WiSM), the Intrusion Detection Service Module (IDSM-2), and the Firewall Service Module of the Cisco Catalyst 6500.

The solution provides a single security framework for both wired and wireless networks, including intrusion protection; client validation, security posture assessment, and remediation; wireless single sign-on and 802.1x integration; secure guest access; and rogue access point detection and containment. It scales to 300 lightweight access points and more than 10,000 wireless client devices per WiSM. The WiSM modules can be centrally managed and monitored with the Cisco Wireless Control System (WCS).

## The Cisco Catalyst 3750 and 3750-E Series with Integrated Wireless LAN Controller for Branch Office Mobility

For both mid-sized business and enterprise branch office deployments, the Cisco Catalyst 3750G Integrated Wireless LAN Controller integrates wireless LAN controller functions into the resilient stackable Cisco Catalyst 3750 and 3750-E Series Switches. It delivers improved operational efficiency and WLAN security, mobility, and ease of use for business-critical wireless LANs.

The Cisco Catalyst 3750G Integrated Wireless LAN Controller communicates with Cisco Aironet® lightweight access points using the emerging Lightweight Access Point Protocol (LWAPP) standard to establish secure connectivity between access points and modules across Layer 3 networks. This protocol enables the automation of important WLAN configuration and management functions for cost-effective WLAN operations.

## What Are the Benefits of Wireless Mobility?

Deploying a Cisco Unified Wireless Network has benefits both financial and technical, including:

- Improved employee productivity and customer responsiveness through real-time access to critical information, enhanced communications, and collaboration tools

- Lower total cost of ownership and reduced complexity through device consolidation
- Better reachability with comprehensive in-building unified wireless LAN coverage
- Improved IT control and management through a common security and compliance framework across wired and wireless infrastructure
- Reduced expenses for adds, moves, and changes
- Consistent end-user experience across wired and wireless networks

## Why Cisco?

Cisco is the industry's only technology provider to offer a comprehensive portfolio of wireless LAN mobility services enabled by a unified wired and wireless network. Unlike other providers, Cisco can deliver a tightly integrated solution of infrastructure and application services to allow businesses to benefit from a simple, secure, manageable, and scalable platform for the lowest total cost of ownership. By delivering a rich portfolio of mobility services, Cisco is empowering its customers to realize significant business benefits with a measurable return on investment.

## Additional Resources

- **Cisco Mobility Solutions:**  
<http://www.cisco.com/go/mobility>
- **Cisco Switching Solutions:**  
<http://www.cisco.com/go/switching>
- **Cisco Secure Wireless Design Guide:**  
[http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns741/networking\\_solutions\\_products\\_genericcontent0900aecd80601e22.html#mobility](http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns741/networking_solutions_products_genericcontent0900aecd80601e22.html#mobility)