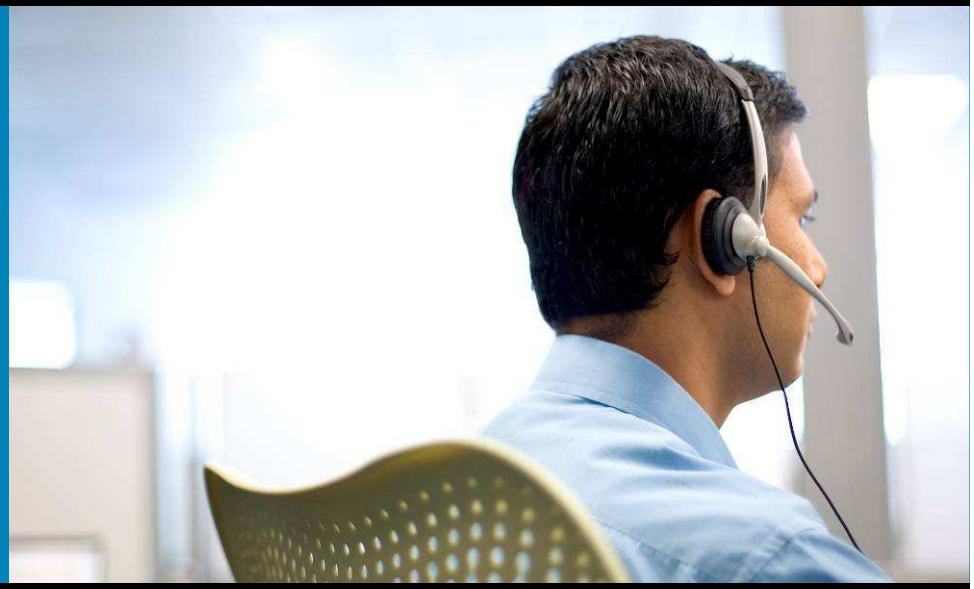
Cisco Unified Mobility for the Enterprise



Nassim Ait Youcef – Systems Engineer nyoucef@cisco.com

22nd of April 2008

Agenda

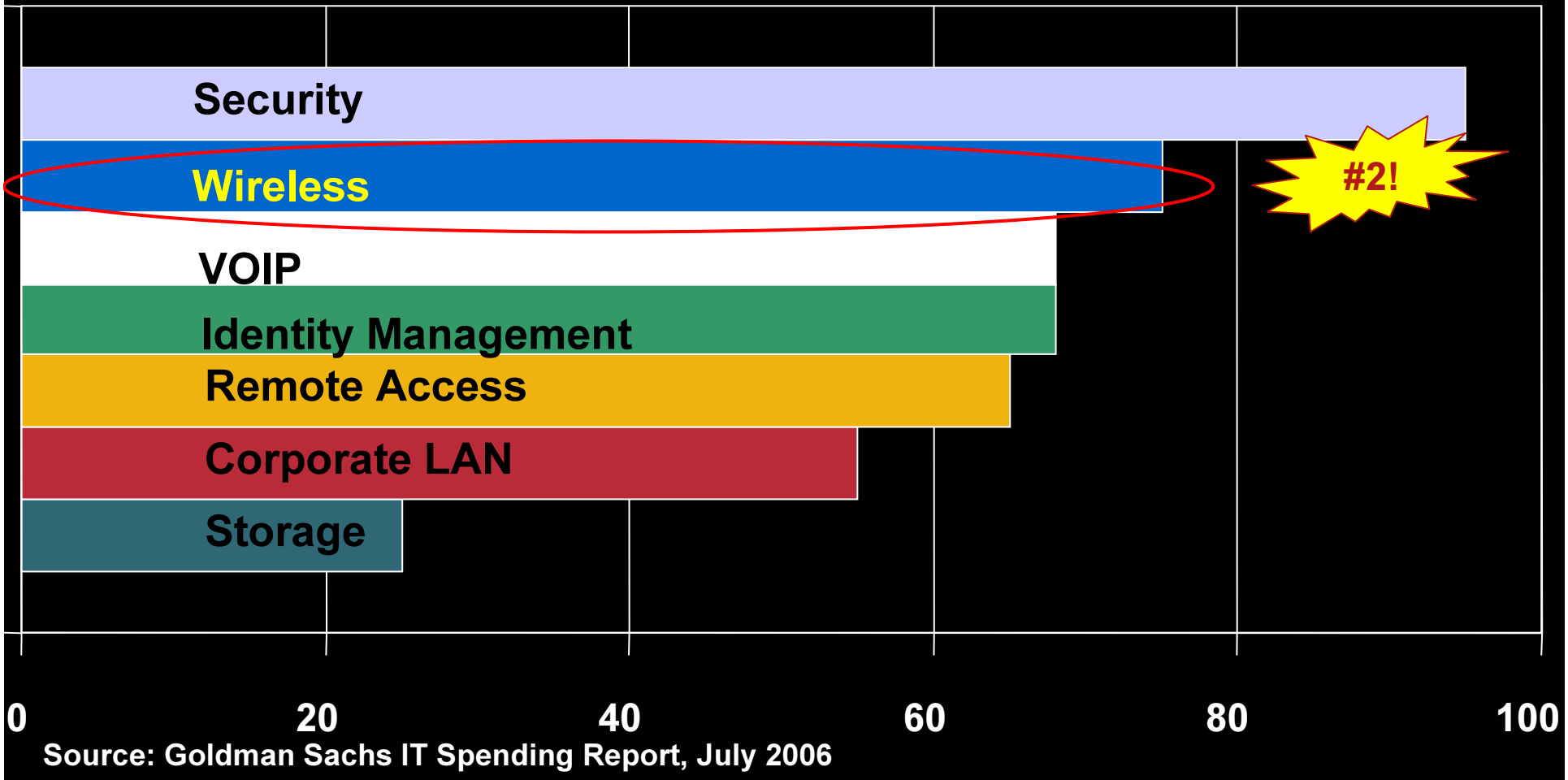
- Wireless Trends
- Cisco Wireless Networks
- Top Reasons to Deploy Wireless
- Other Benefits of the Unified Approach
- Summary
- Q&A

Where is the CIO Spending in the Next Year?

Security, Wireless and VoIP are top 3 Networking Priorities

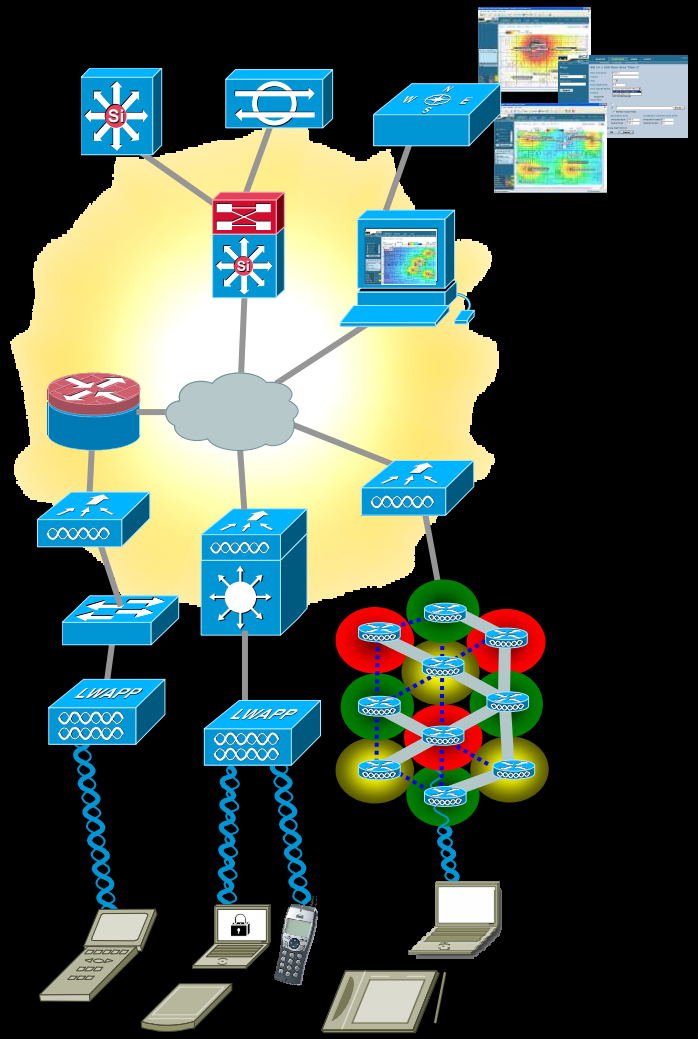
Goldman Sachs FY 06 IT Survey:

Medium and High Priorities



Source: Goldman Sachs IT Spending Report, July 2006

Cisco Unified Wireless Network
End-to-End, Unified – Only Cisco



Unified Advanced Services

Unified cellular and Wi-Fi VoIP. Advanced threat detection, identity networking, location-based security, asset tracking and guest access.

World-Class Network Management

Same level of security, scalability, reliability, ease of deployment, and management for wireless LANs as wired LANs.

Network Unification

Integration into all major switching and routing platforms. Secure innovative WLAN controllers.

Mobility Platform

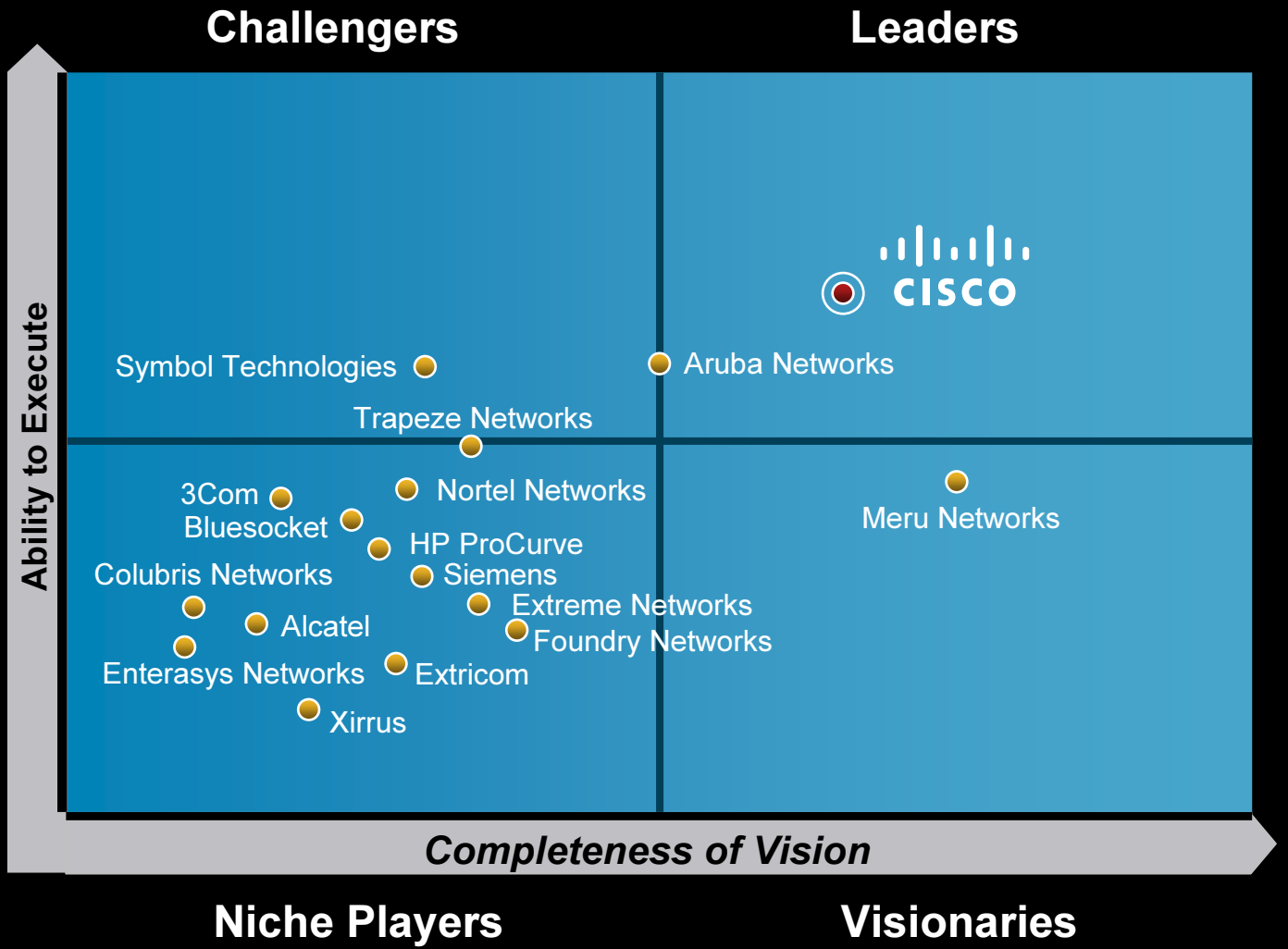
Ubiquitous network access in all environments. Enhanced productivity. Proven platform with large install base and 61% market share. Plug and play.

Client Devices

90% of Wi-Fi silicon is Cisco Compatible Certified. “Out-of-the-Box” wireless security.

Gartner Magic Quadrant

Cisco is the only clear vendor in the Leader Quadrant



Forrester Wave: Q2Y07

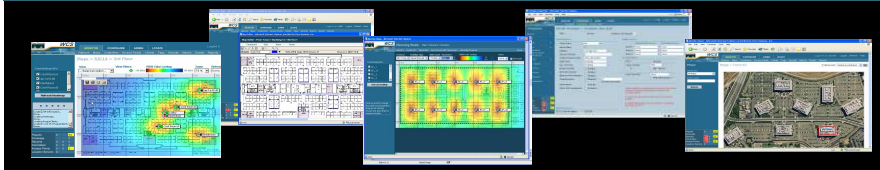
Cisco is clearly distinguished as the market leader

A Business Class Wireless Experience
Why Settle for Anything Less?

Cisco Self-Defending Network

Unified Advanced Services

Unified built-in support of leading edge applications - not an after thought. Cisco Wireless Location Appliance, Cisco WCS, SDN, NAC, Wi-Fi phones, and RF firewalls.



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World Class NMS that visualizes and helps secure your air space. Cisco Wireless Control System (WCS)

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Seamless network infrastructure across a range of platforms. Cisco 4400, 2000 Wireless LAN Controllers and Cisco Catalyst 6500 Series WiSM. ISR integration.

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APs dynamically configured and managed through LWAPP. Cisco Aironet Access Points: 1500, 1300, 1240AG, 1230AG, 1130AG, 1000 and the new 1252.

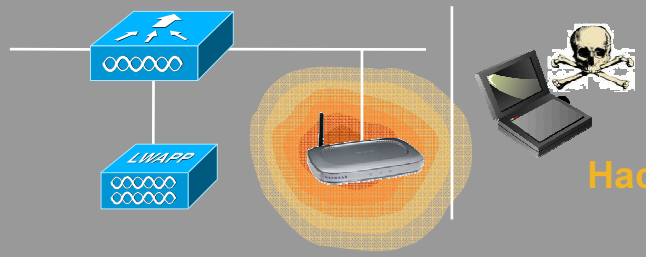
Cisco Compatible

Client Devices

Secure clients that work out of the box. Cisco Compatible Client Devices & Cisco Aironet clients.

Top 4 Reasons Every CXO Needs a Pervasively Deployed Wireless System

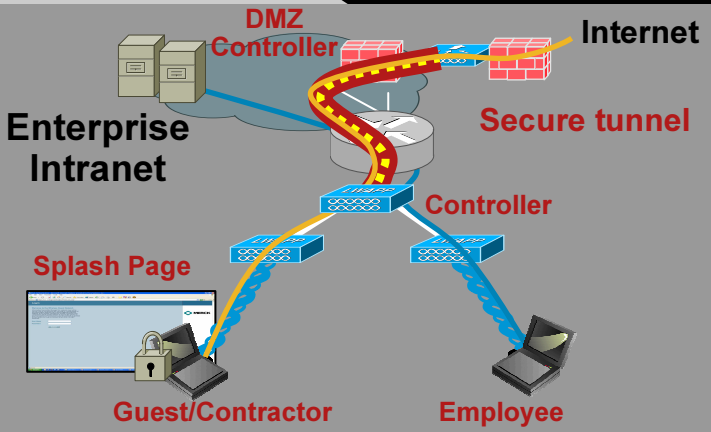
Security



Rogue APs—Employees create opening to enterprise network unknowingly

FTC FINES

Guest Access



Voice

- WiFi enabled voice
- 7921G, Blackberry, Treo
- Better coverage
- Reduced Cost
- Integrated with IP PBX

Location

Active IP Monitoring

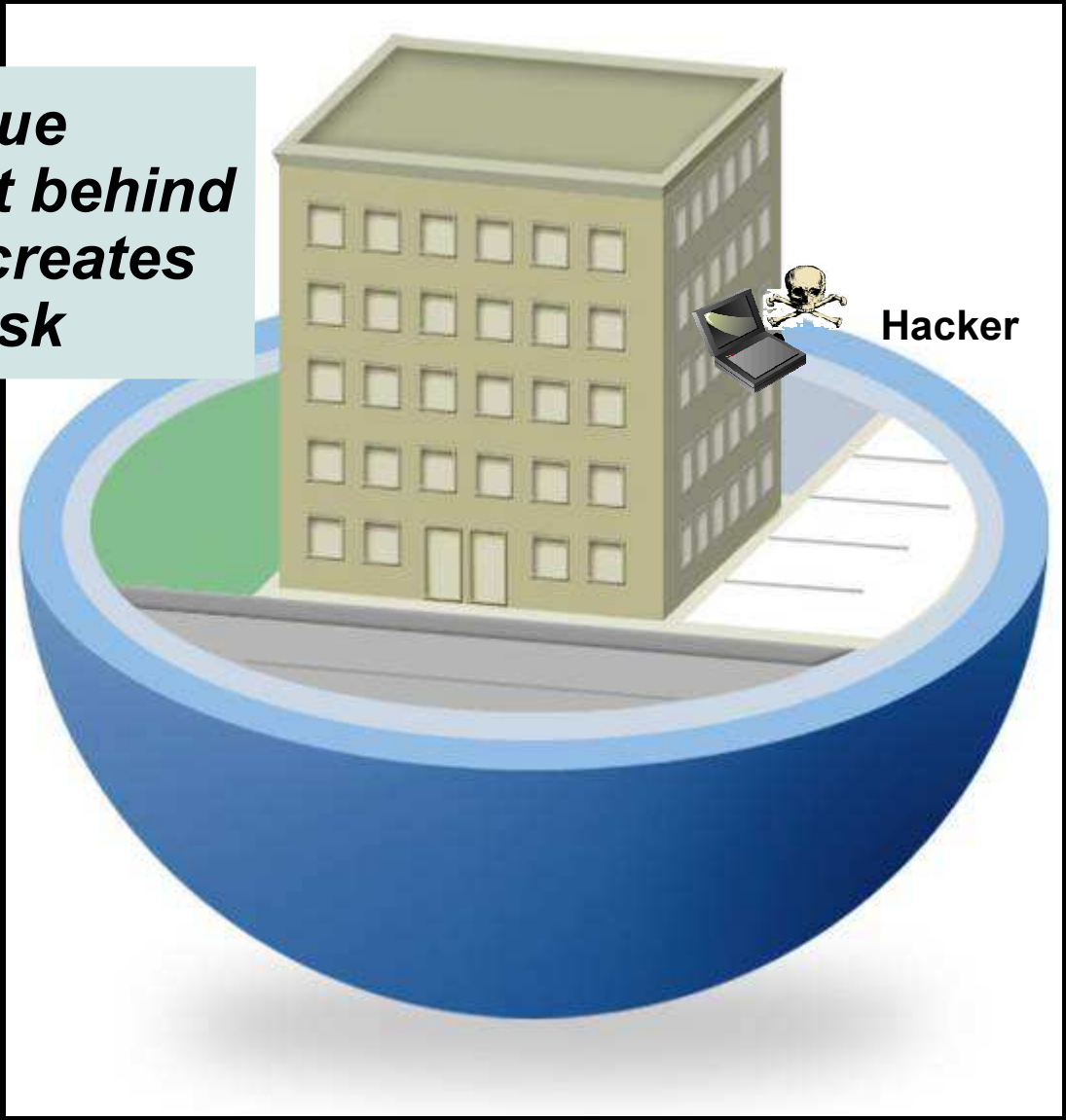
Retail	Healthcare	Financial
		

Multi-Service Location

Voice Services	Compliance	Sensor Networks
		

#1 Security
The Wireless Enterprise Has No Walls

A single rogue access point behind the firewall creates enormous risk



Wi-Fi Security Myths

No Wi-Fi = Good Security

WRONG!

- A single rogue access point creates enormous risk
- Traditional security measures (firewall, wired IDS/IPS, VPNs, NAC, etc) don't address
- Perpetrated unknowingly ***by your own employees***

A handheld walk-around survey is sufficient (i.e. AirMagnet)

WRONG!

- Would you only turn on your firewall periodically?
- Not practical for branch or remote offices with no local IT personnel
- Laborious and expensive

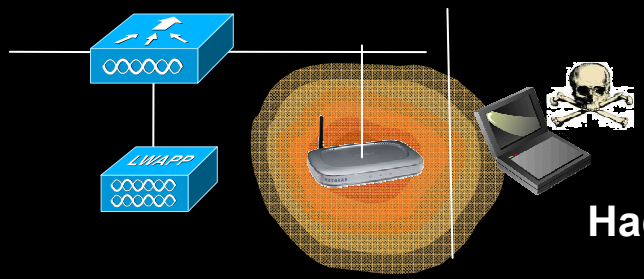
I use 802.11i, WPA or VPN, so my network is secure

WRONG!

- Only protects authorized clients and infrastructure
- No impact on unauthorized infrastructure (i.e. rogue APs) or unauthorized connections (i.e. ad hoc networks)

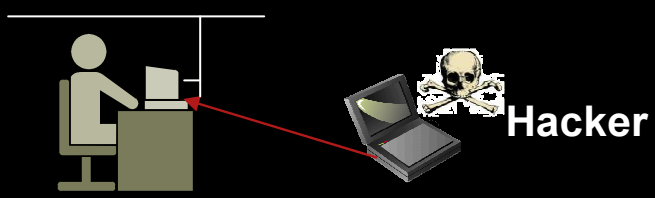
Top Wireless Threats

Rogue AP



- Employees create opening to enterprise network unknowingly

Ad Hoc

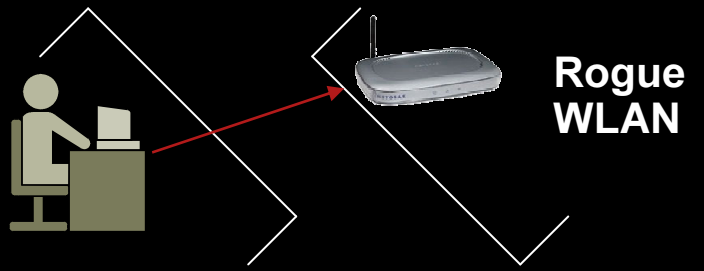


- Client-to-client connections, bypassing infrastructure security checkpoints

DoS Attacks

- Malicious hackers disrupt critical business services

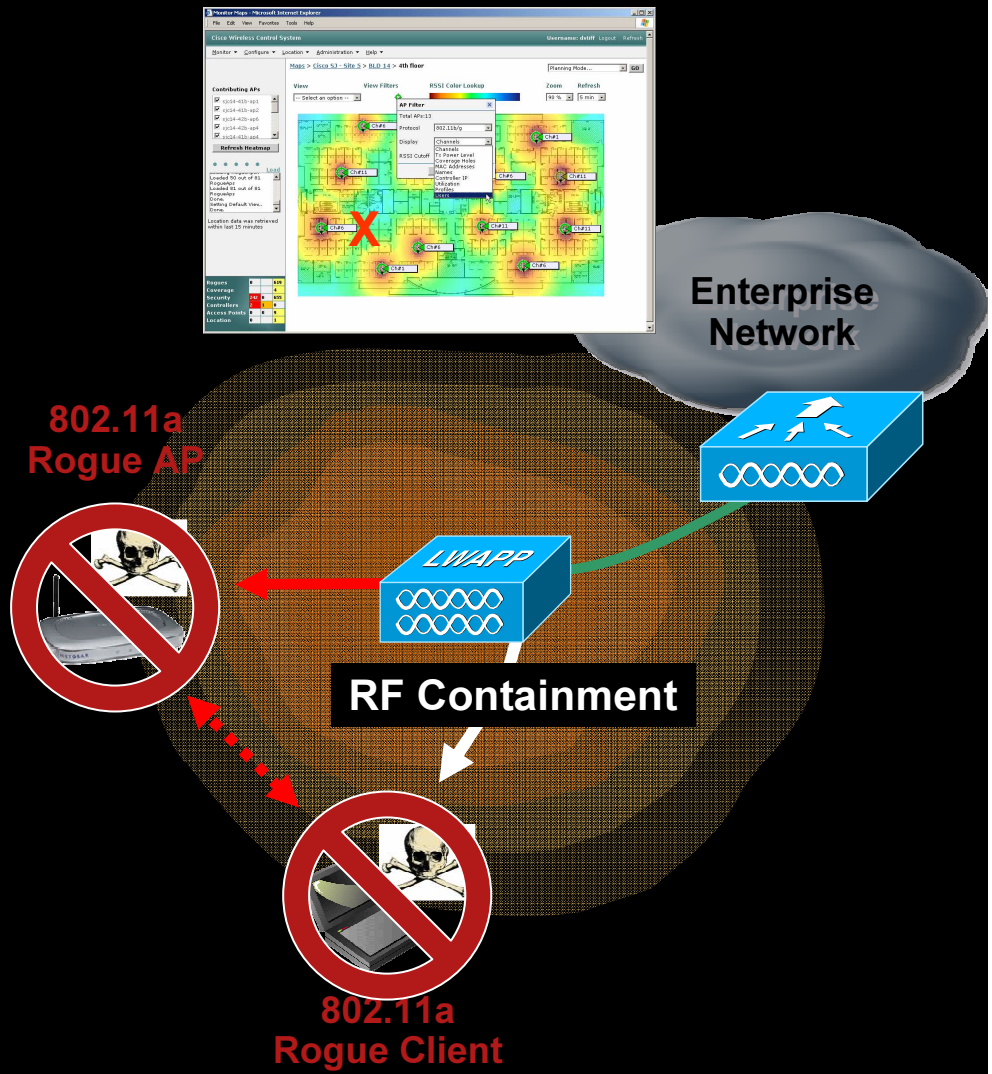
Client Mis-association



- Employees connect to an external WLAN, creating portal to enterprise wired network

Cisco Unified Wireless Network Integrated Wireless IDS/IPS Protects Your Business

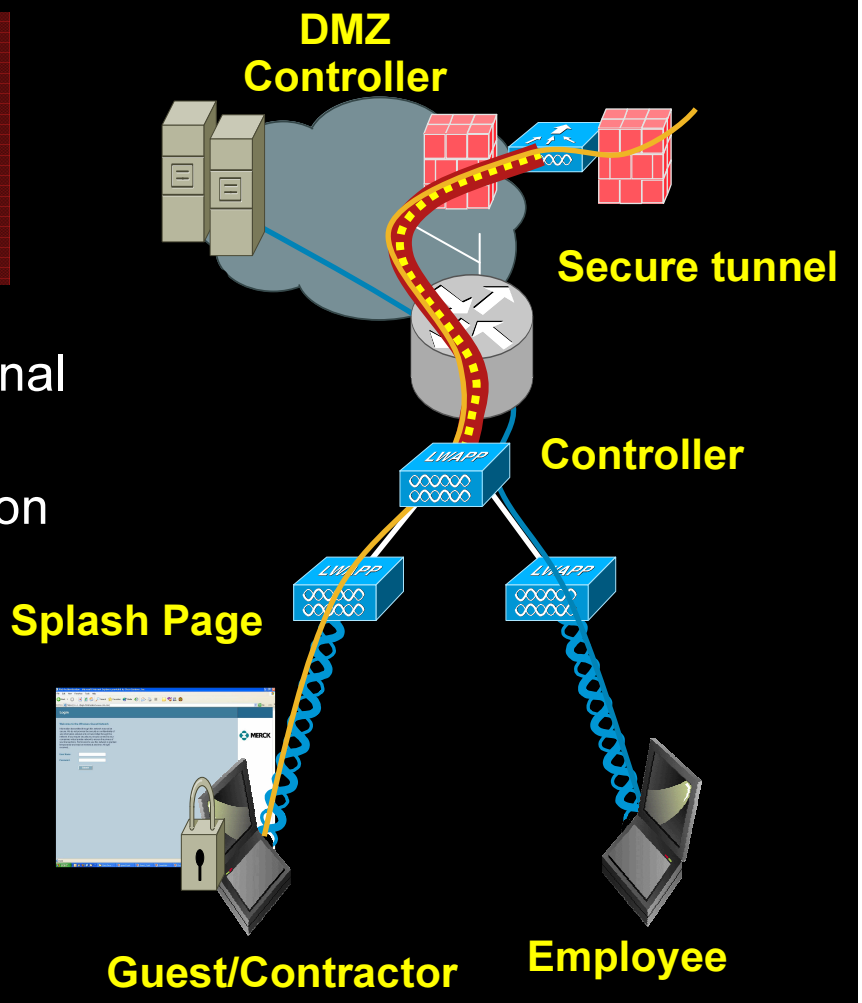
- Automatically detects:
  - Rogue access points and clients
  - Ad hoc networks
  - Denial of service attacks
  - Client mis-associations
- Intelligent RF scanning = cost effective solution
- Intrusion prevention under IT control
- Location appliance provides precision mapping for physical removal



#2 Secure, Controlled Guest Access

- Business Need: Provide access to networked resources for visiting customers, partners and contractors

- But, how to do so without exposing internal resources?
- Cisco's wireless guest networking solution provides:
  - Secure, controlled network access
  - Pervasive, managed coverage
  - Lower costs for support and moves/adds/changes
  - Quick and easy access for extended workforce.



#3 Mobile Voice & Data Services

- Business Need: Augment network coverage for mobile email and telephony while lowering cellular charges

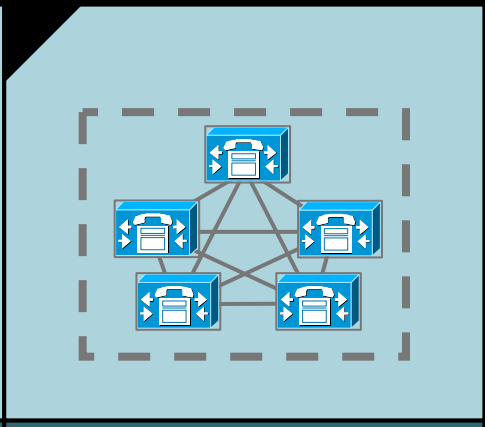
- Challenges:
  - Poor in-building cellular coverage
  - No access to enterprise voice apps
  - Multiple numbers / mailboxes drain productivity
- Benefits of mobile voice & data:
  - Positively impact productivity
  - Real-time communications accelerates decision making
  - Reduced cellular, paging, SMS charges
  - Leverage corporate dialing plans, least cost routing

Voice over WLAN
Requires end-to-end intelligence

VoWLAN Clients

Voice Ready WLAN Infrastructure

Unified Wired/Wireless LAN Infrastructure



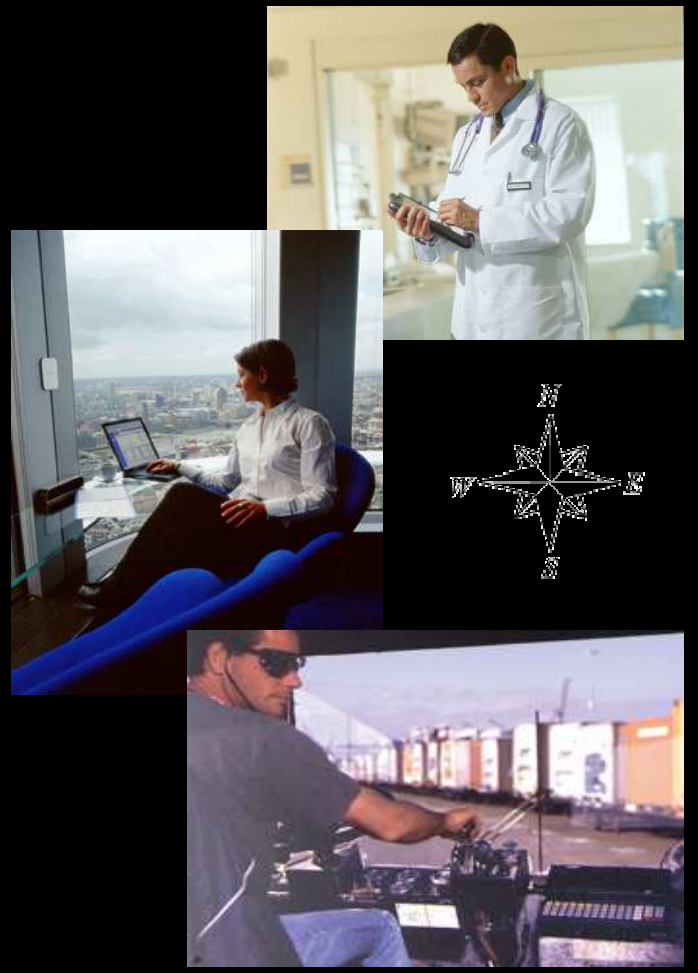
Cisco CallManager & Mobility Applications

- Comprehensive on campus solution
- Dedicated clients, soft phones
- CCX enables QoS, Fast Secure Roaming
- IEEE 802.11b easy to use wireless IP phone
- Pixel display provides intuitive access to features and applications

- Mobility on / off campus
- Dual 802.11 and cellular phone
- Partners: Nokia, RIM
- Additional voice clients

#4 Location Services

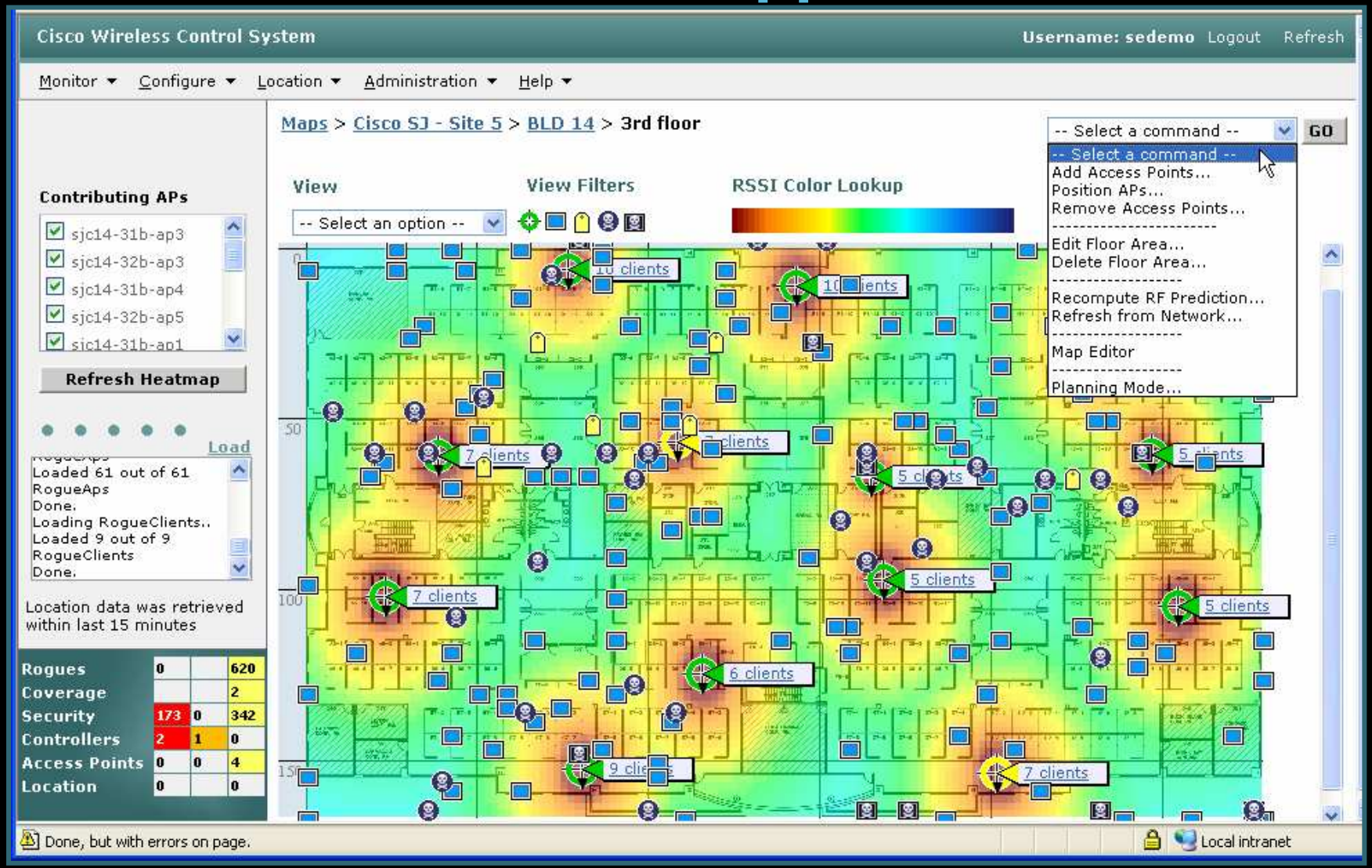
- Business Need: Decrease cost of locating and replacing assets. Improve security and effectiveness of communications



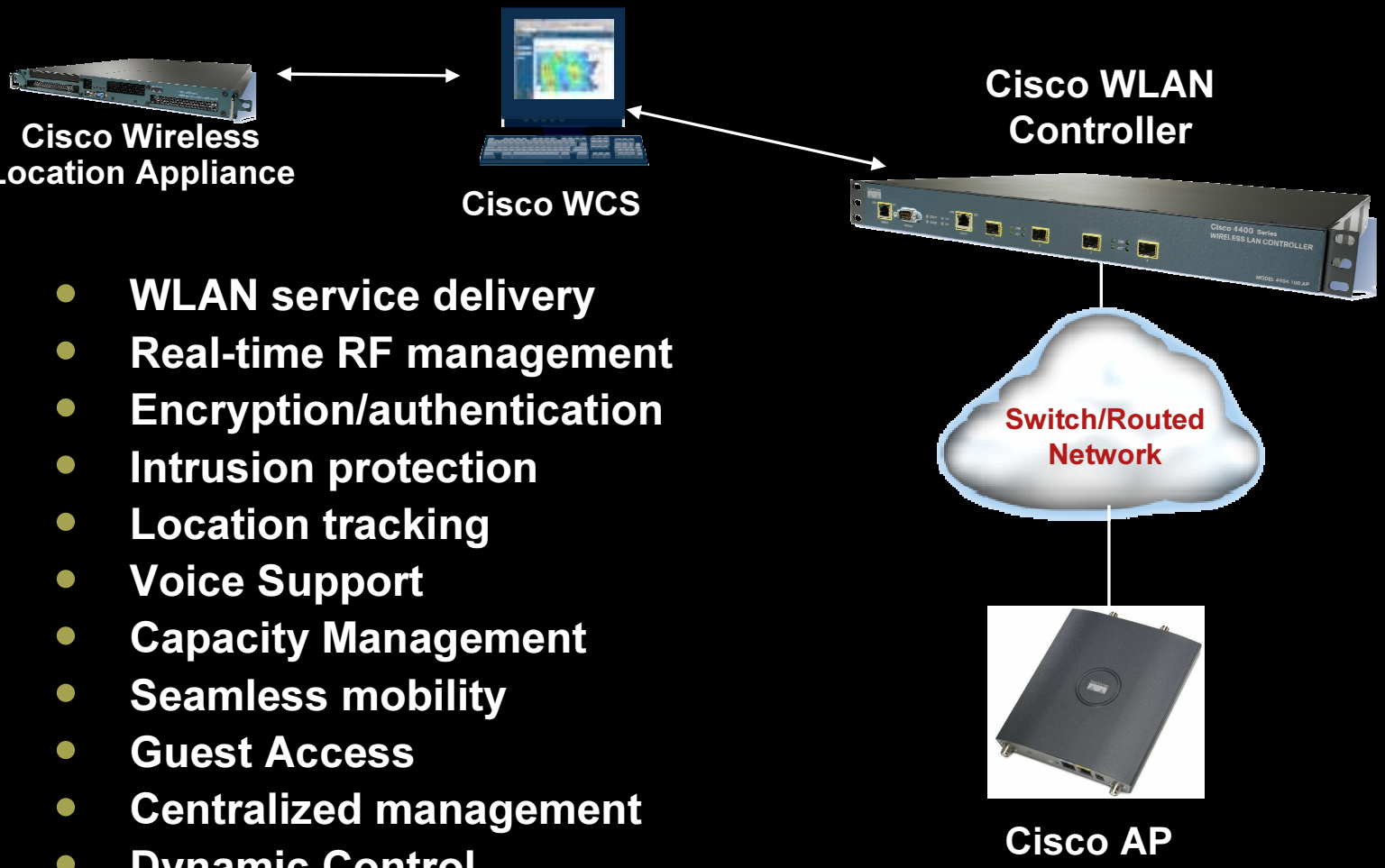
Location Services Benefits:

- Real-time Network Visibility—**Manage assets and streamline workflows**
- Asset Tracking—**View Wi-Fi devices and people as they physically move**
- Security—**Quickly locate security threats such as rogue access points and devices**
- Location Trending—**Find out where devices and people have been and when**

WCS with Location Appliance

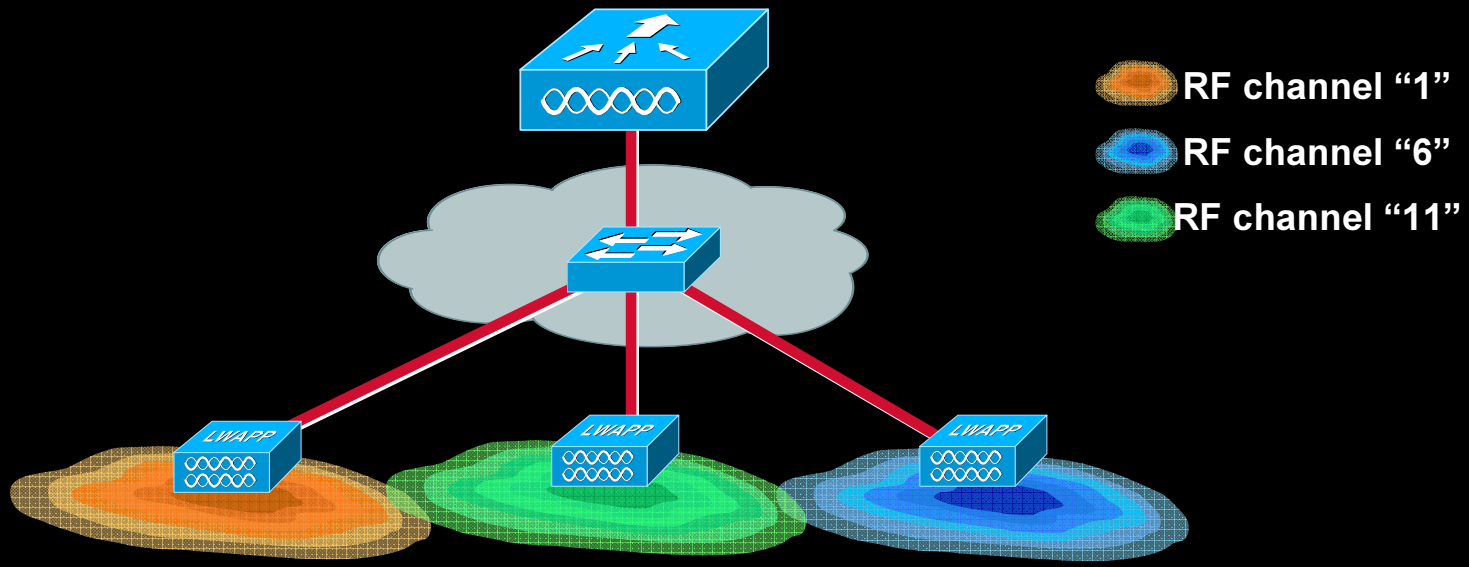


Other Benefits of the Unified Approach
A Single Unified WLAN System



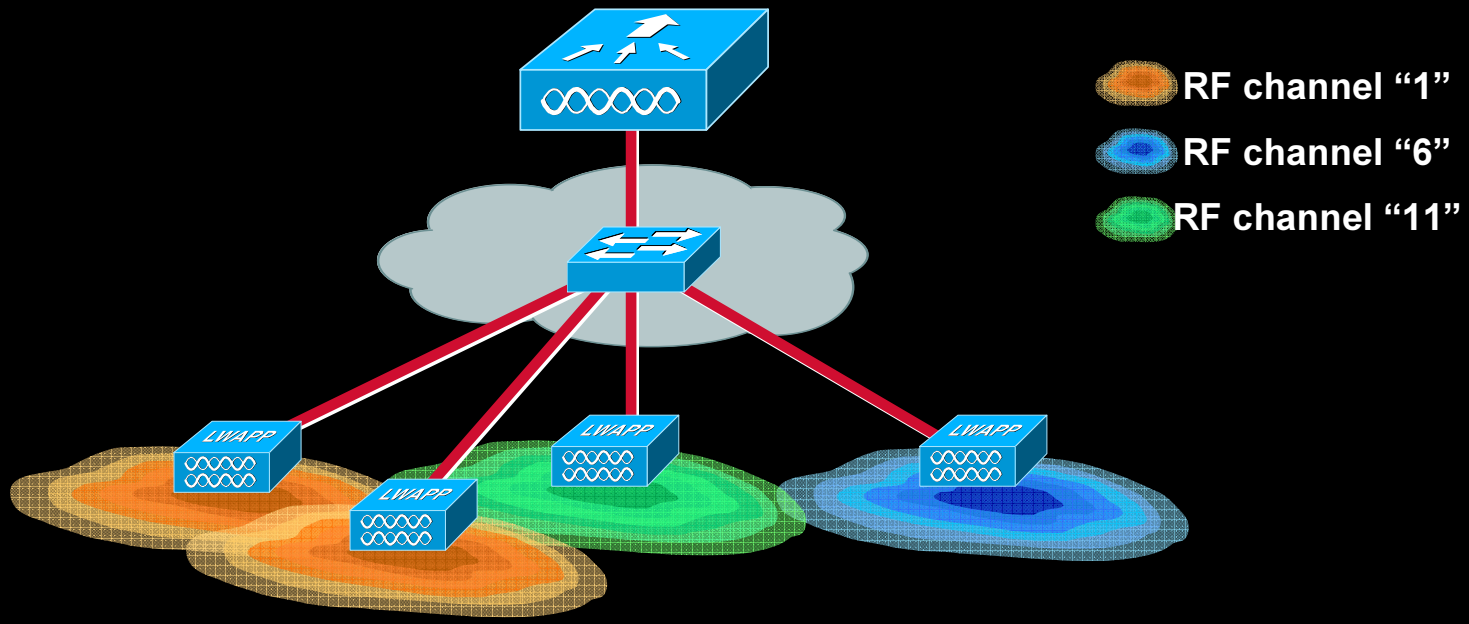
- WLAN service delivery
- Real-time RF management
- Encryption/authentication
- Intrusion protection
- Location tracking
- Voice Support
- Capacity Management
- Seamless mobility
- Guest Access
- Centralized management
- Dynamic Control

Dynamic Channel & Power Assignment



System is running normally in a stable state

Dynamic Channel & Power Assignment

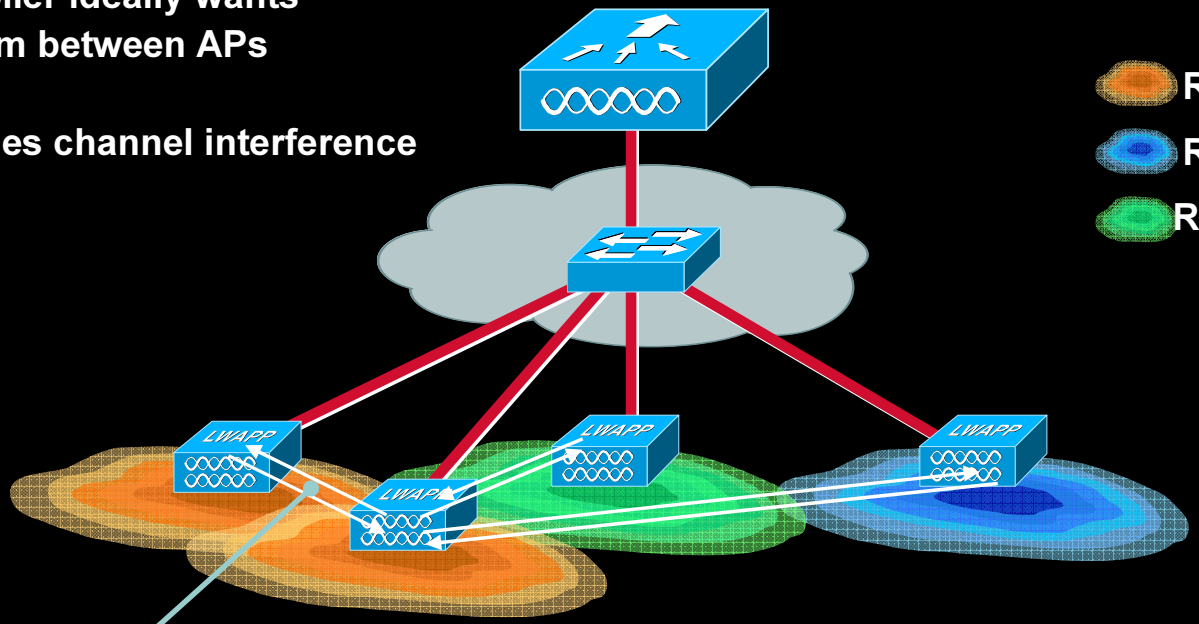


New AP is added to the system on channel 1

Dynamic Channel & Power Assignment

Controller ideally wants
-65 dBm between APs

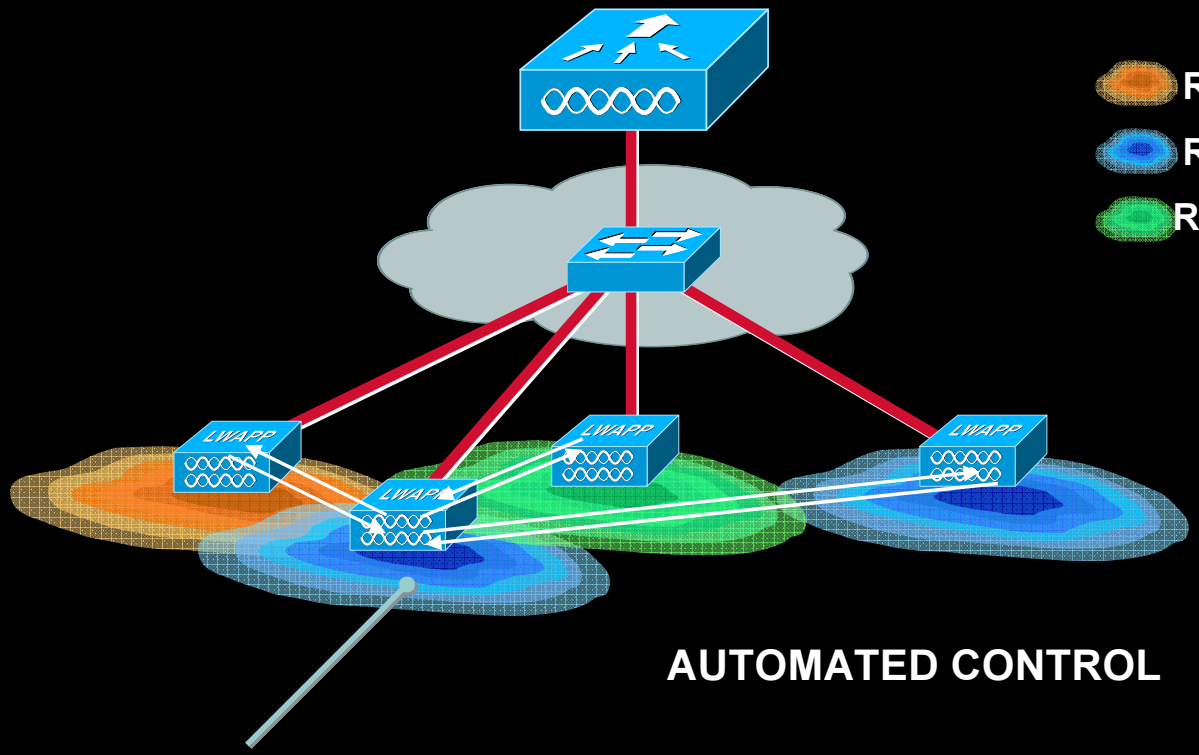
Identifies channel interference



RF channel “1”
RF channel “6”
RF channel “11”

NEIGHBOR MESSAGES
Sent at full power

Dynamic Channel & Power Assignment



RF channel “1”

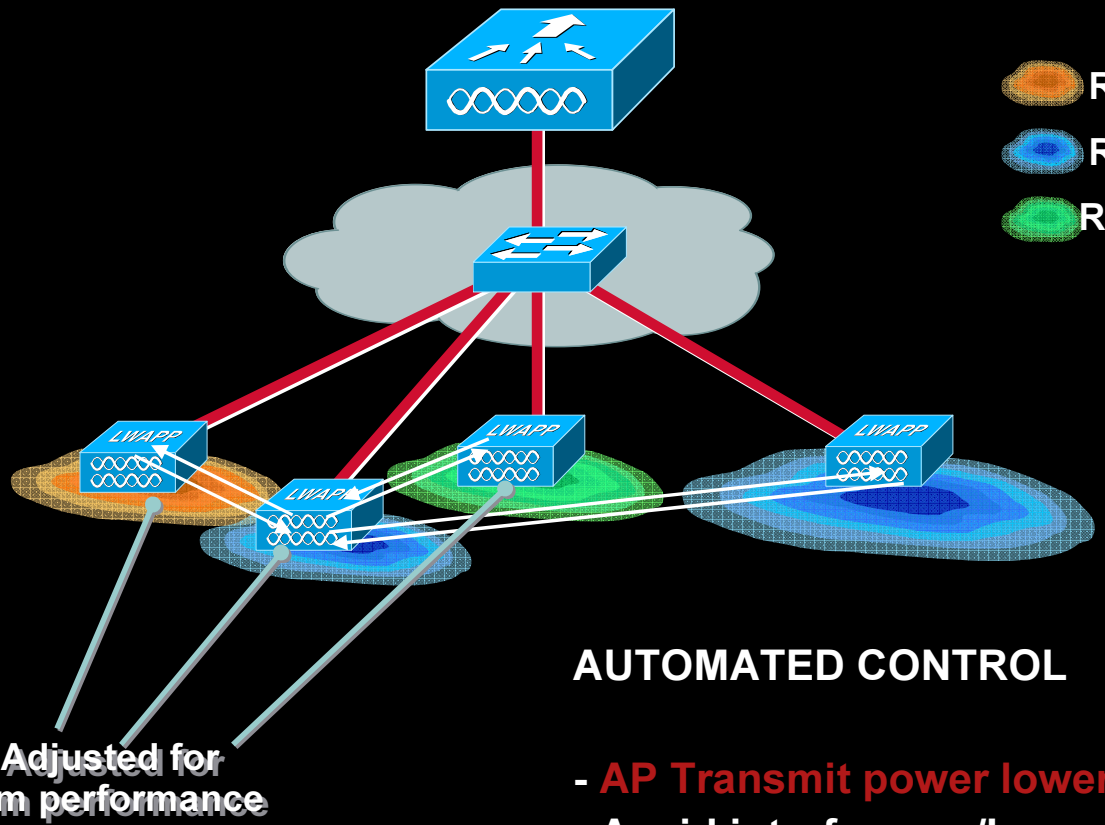
RF channel “6”

RF channel “11”

AUTOMATED CONTROL

- AP RF channel changed
- Avoid interference/Improve performance
- Eliminate coverage holes
- Optimize coverage area

Dynamic Channel & Power Assignment



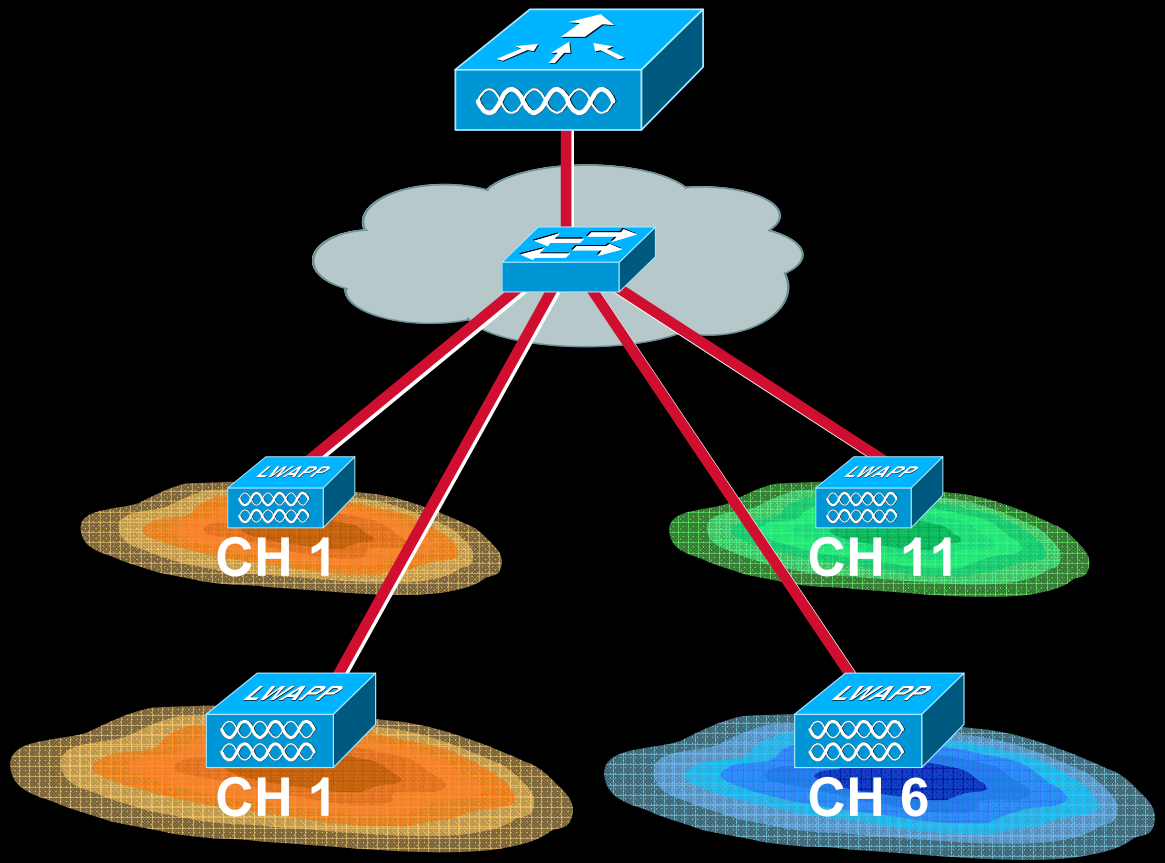
RF channel “1”
RF channel “6”
RF channel “11”

Power Adjusted for optimum performance

AUTOMATED CONTROL

- AP Transmit power lowered
- Avoid interference/Improve performance
- Eliminate coverage holes
- Optimize coverage area

Interference Detection & Avoidance



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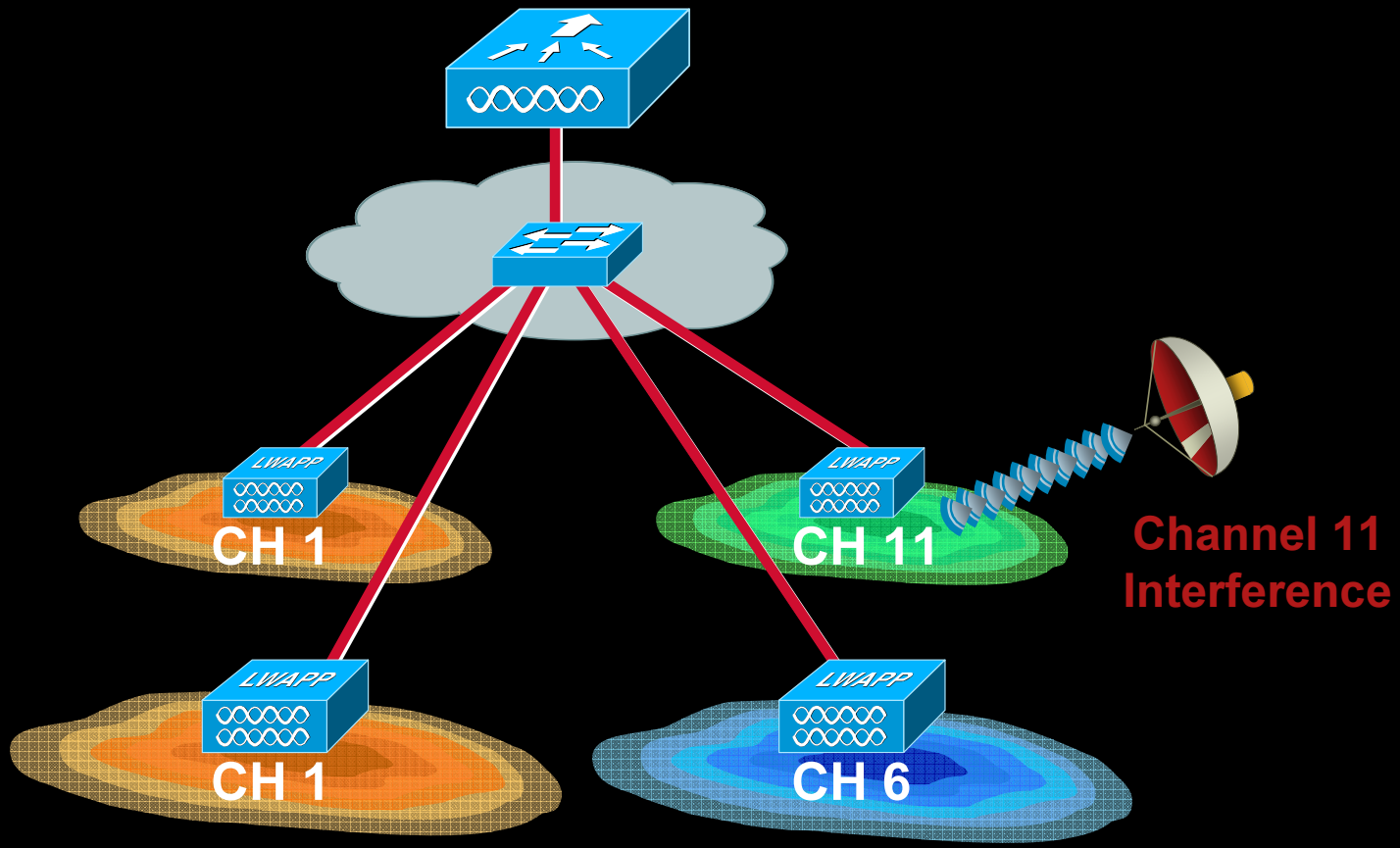
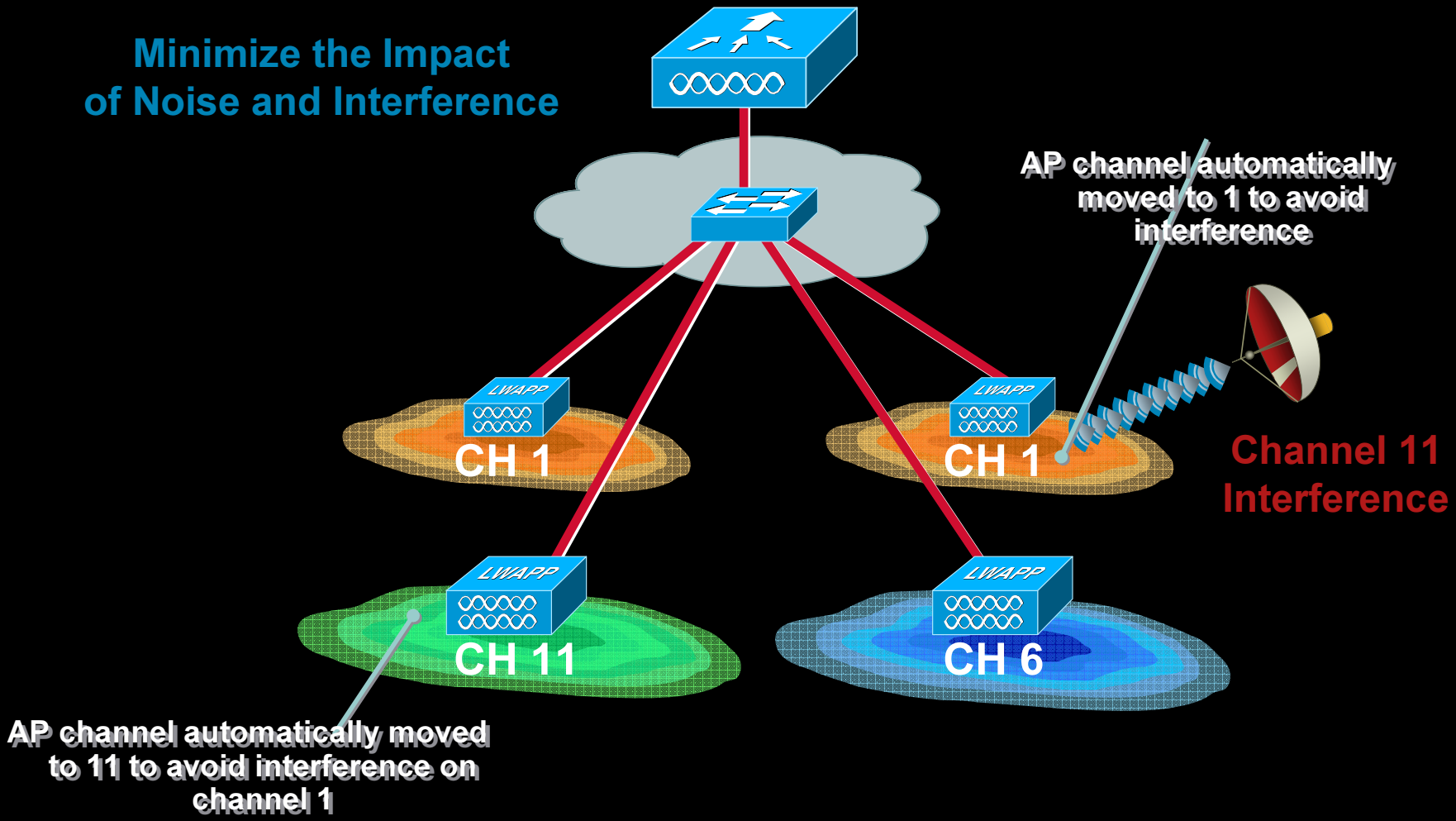


Interference source on channel 11

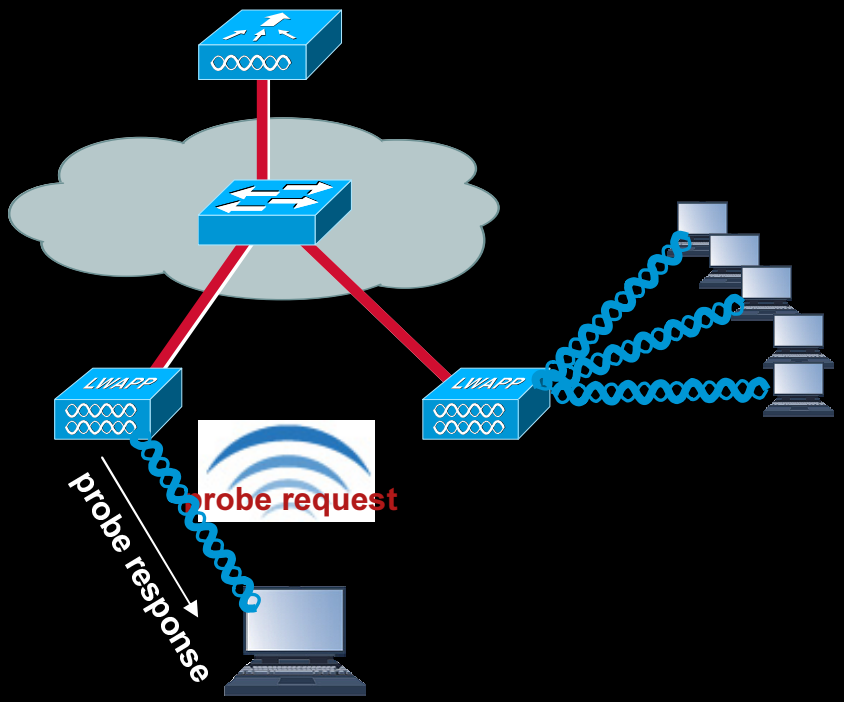
Interference Detection & Avoidance

Minimize the Impact of Noise and Interference



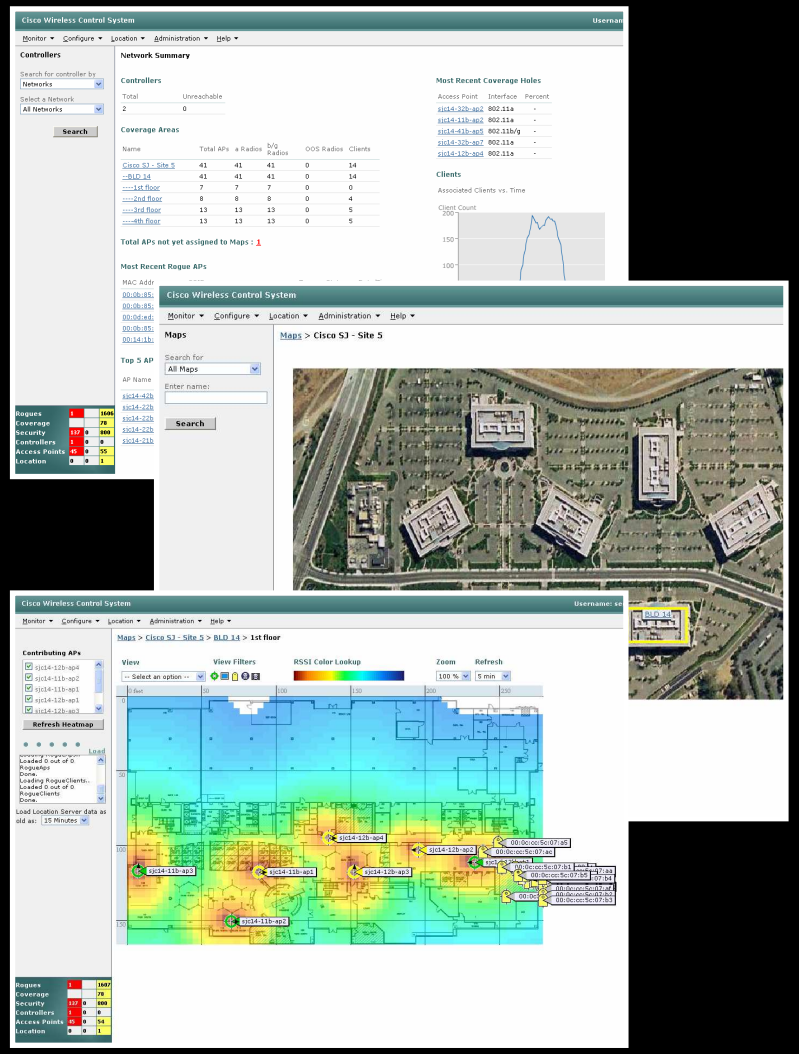
Client Load Balancing

- Client sends probe
- Controller determines best AP and ONLY IT sends probe response
- Client connects to AP



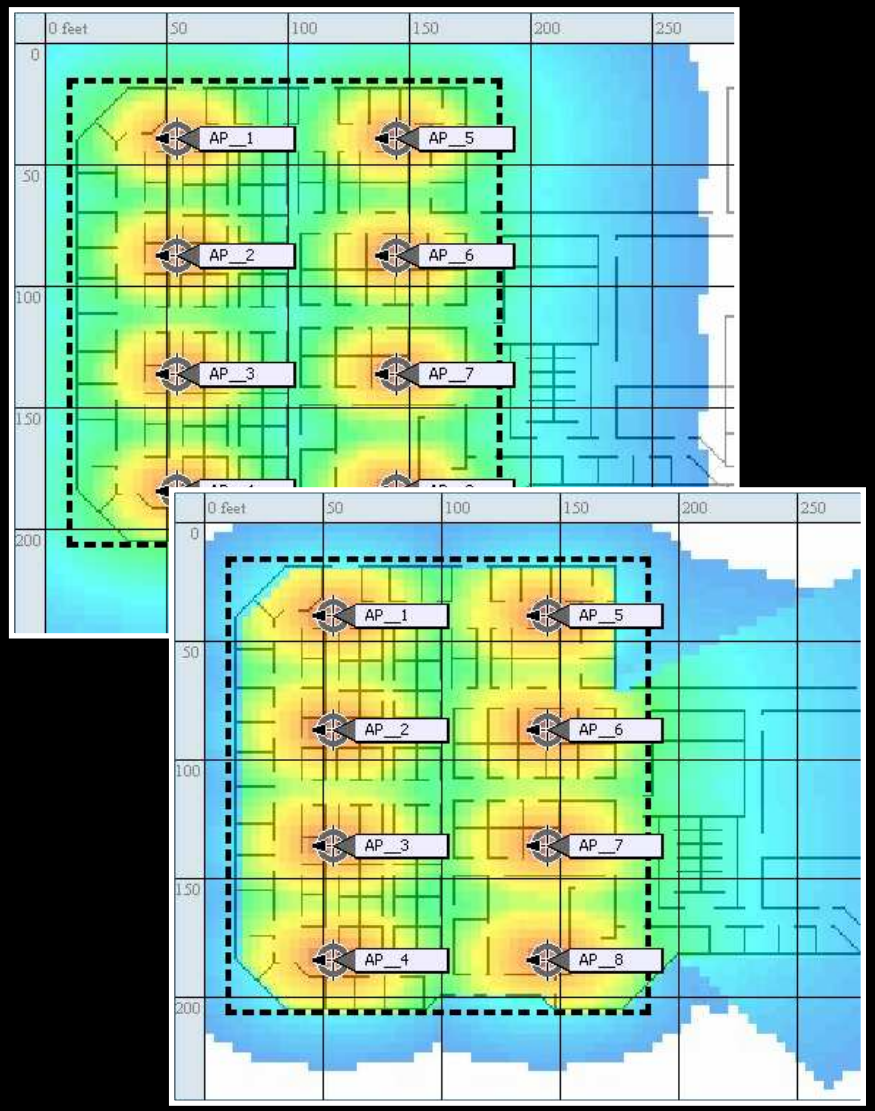
Cisco Wireless Control System (WCS)

- WCS is the management platform for Cisco's controller-based solution
- WCS is used for:
  - -Network planning and ongoing monitoring
  - -Real-time visibility and control of the air space
  - -Unified policies that are centrally managed and enforced
  - -Management of Cisco controllers and lightweight APs
- WCS is optional, but highly recommended when:
  - -Multiple controllers are deployed, supporting numerous APs
  - -Advanced WLAN services are deployed (IDS, location, voice, …)



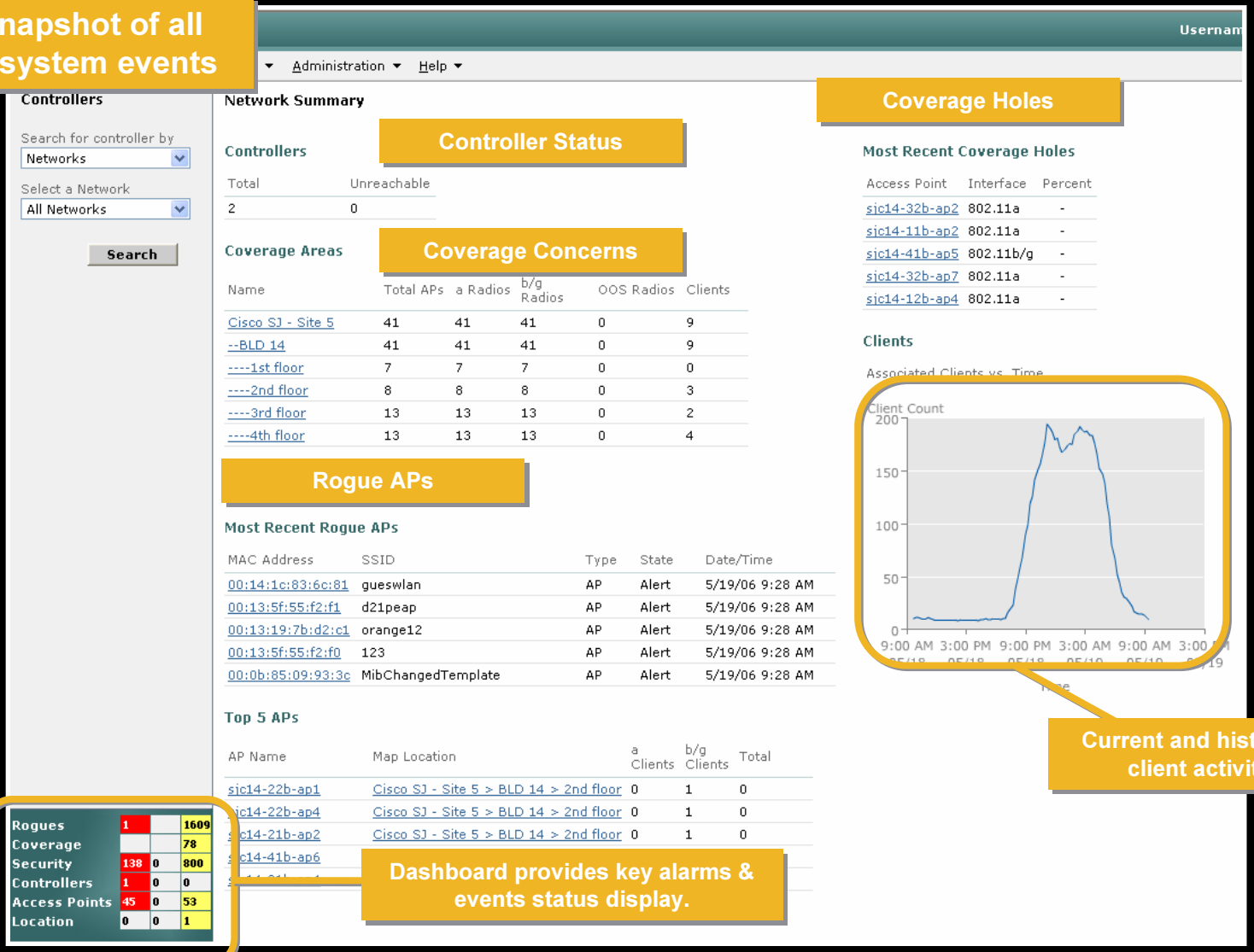
WLAN Planning Tool

- Optimize WLAN design for coverage or performance
- Assign RF characteristics to building material
  - -Integrated floor plan editor
- WCS suggests optimal AP placement and graphically displays expected coverage area
- Printable reports
- Minimize the need for manual site survey

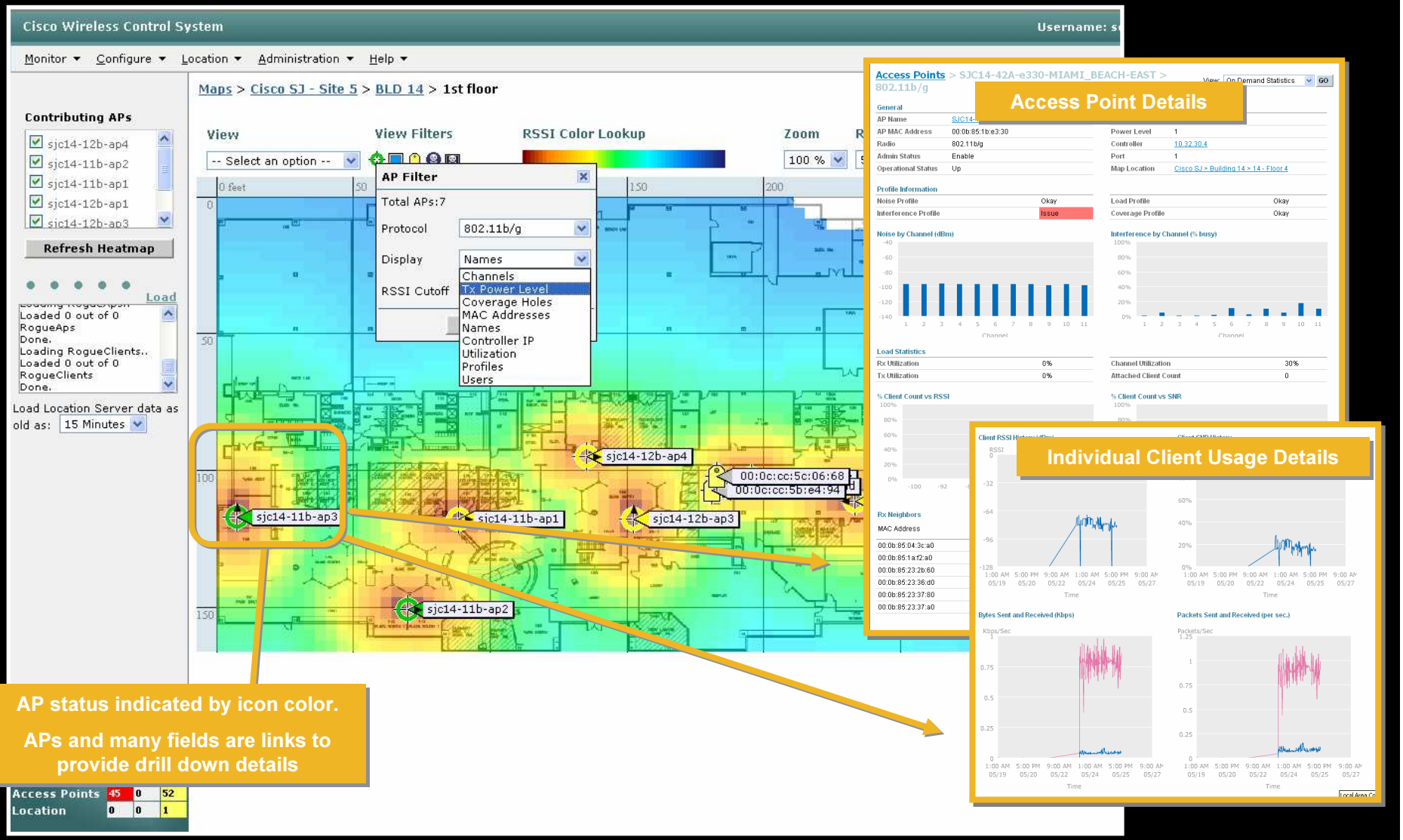


System Monitoring—Network Summary

Quick snapshot of all relevant system events

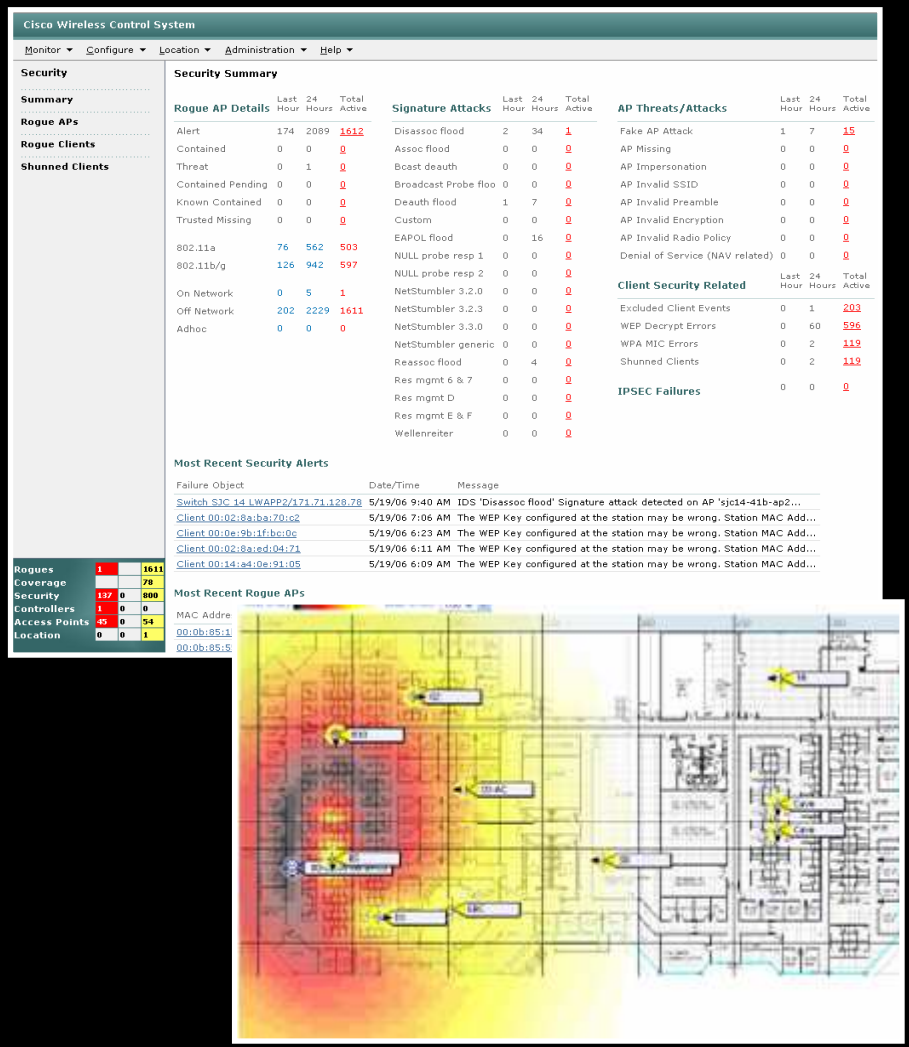


RF Monitoring—Floor Activity

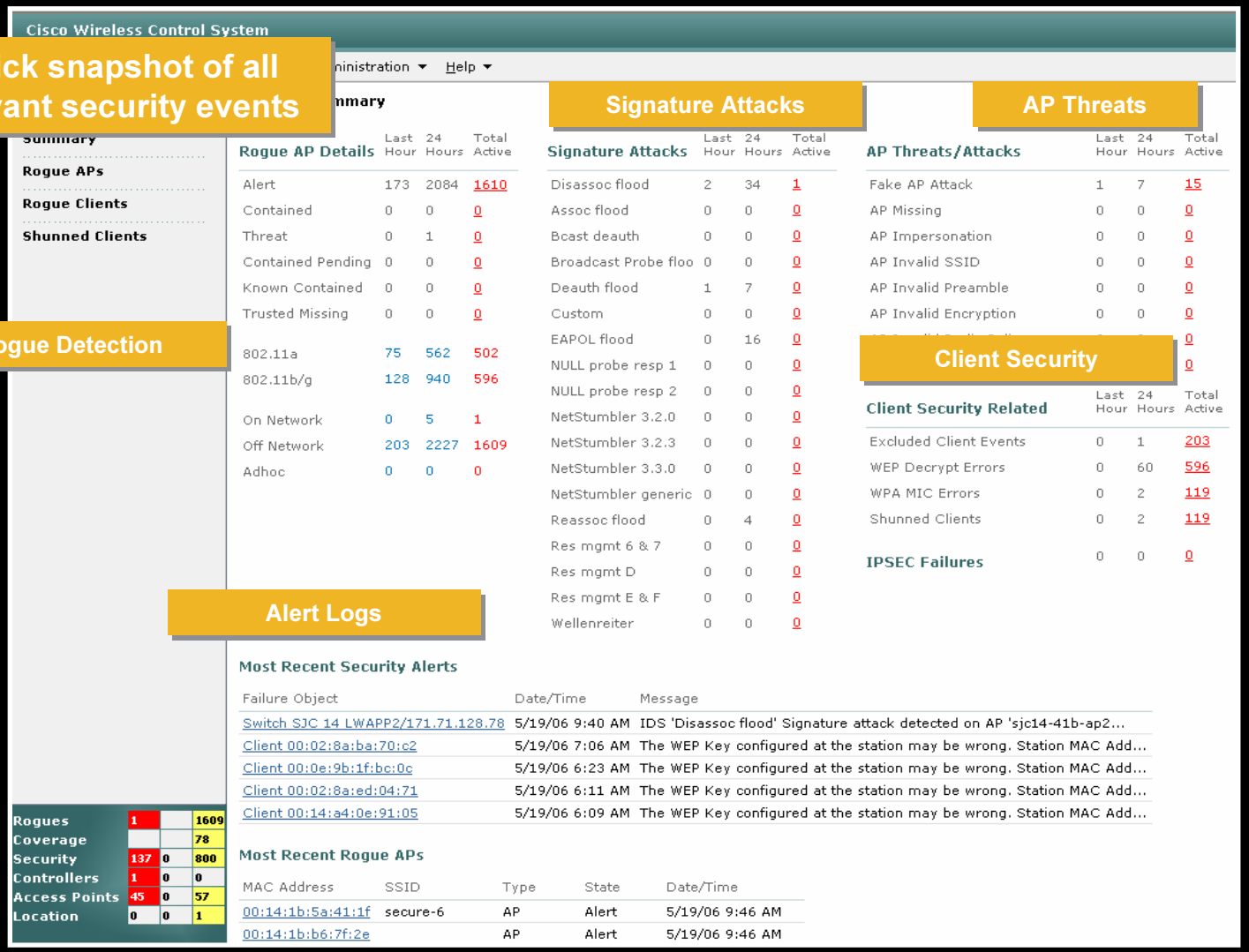


Integrated Wireless Intrusion Protection

- Detect common RF-related attacks
  - -Netstumbler, wellenreiter, void11, FakeAP, address spoofing, DoS, etc.
- Customizable attack signatures
- Real-time 24x7 monitoring and alarming
- Rogue AP/client detection, location, and containment
  - -Identify known (i.e. “trusted”) rogues
- Manually disable clients
- View dynamically excluded clients

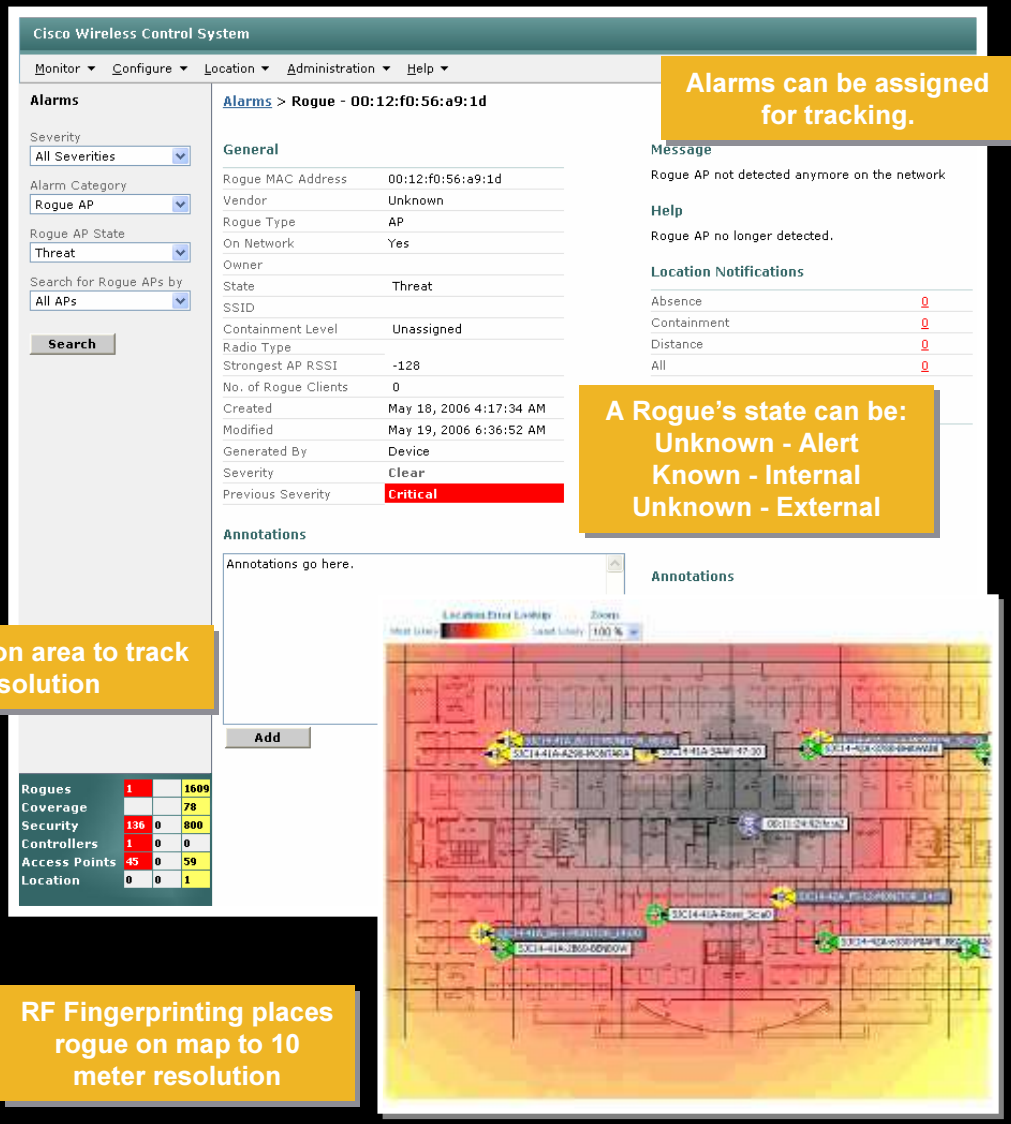


Security Monitoring



Dealing with Rogue APs

1. Review Rogue Alarm log
2. Assign alarm
3. Locate Rogue
4. Determine state of Rogue
5. Contain Rogue if a threat
6. Clear alarm



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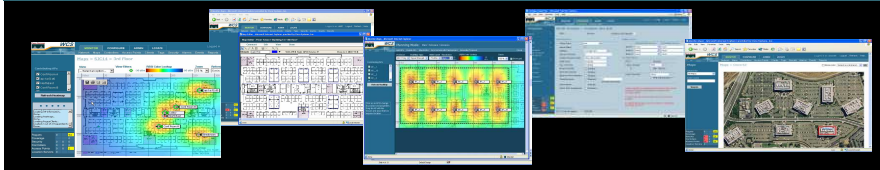

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Top 4 Reasons for Deploying Wireless

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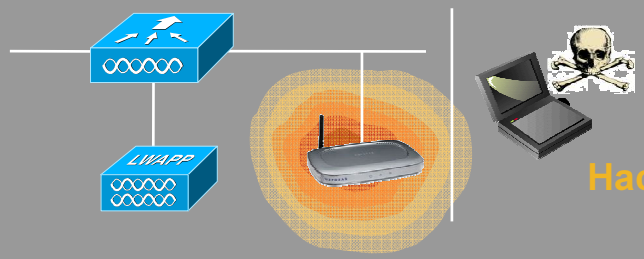

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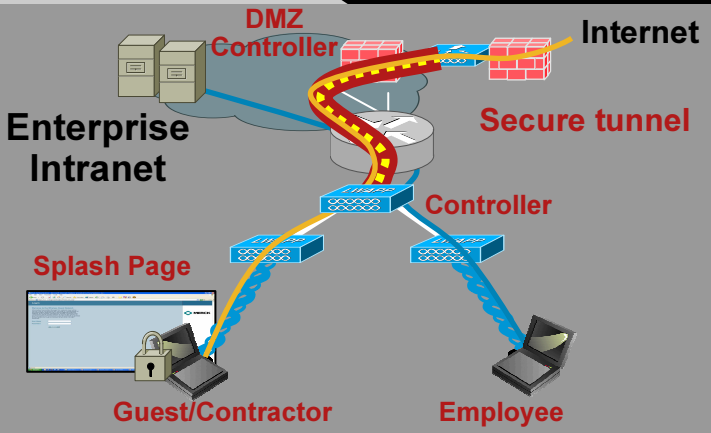

Voice

- WiFi enabled voice
- 7921G, Blackberry, Treo
- Better coverage
- Reduced Cost
- Integrated with IP PBX

Location

Active IP Monitoring

Retail	Healthcare	Financial

Multi-Service Location

Voice Services	Compliance	Sensor Networks

www.cisco.com/go/wireless

Q&A