DATA SHEET

# CISCO AIRONET 1130AG SERIES IEEE 802.11A/B/G ACCESS POINT

Low-profile enterprise-class access point with integrated antennas for easy deployment in offices and similar RF environments.



# **PRODUCT OVERVIEW**

Cisco<sup>®</sup> Aironet<sup>®</sup> 1130AG Series IEEE 802.11a/b/g access points provide high-capacity, high-security, enterprise-class features in an unobtrusive, office-class design, delivering WLAN access with the lowest total cost of ownership. With high-performing dual IEEE 802.11a and 802.11g radios, the Cisco Aironet 1130AG Series provides a combined capacity of up to 108 Mbps to meet the needs of growing WLANs. Hardware-assisted Advanced Encryption Standard (AES) or temporal key integrity protocol (TKIP) encryption provides uncompromised support for interoperable IEEE 802.11i, Wi-Fi Protected Access 2 (WPA2) or WPA security. Supporting Cisco IOS<sup>®</sup> Software, the Cisco Aironet 1130AG Series is a component of the Cisco Structured Wireless-Aware Network (SWAN) framework, a comprehensive framework that delivers an integrated, end-to-end wired and wireless network. Using the radio and network management features of the Cisco SWAN framework for simplified deployment, along with built-in omnidirectional antennas that provide robust and predictable WLAN coverage for offices and similar RF environments, the competitively priced Cisco Aironet 1130AG Series is ready to install and easy to manage, reducing the cost of deployment and ongoing maintenance.

The Cisco Aironet 1130AG Series Access Point incorporates the next generation of Cisco Aironet radio innovation. Two high-performing radios provide simultaneous support for 802.11a and 802.11g standards, delivering 108 Mbps data rates in the 5 and 2.4 GHz bands to distances surpassing that of previous-generation radios. Operating on 15 nonoverlapping channels today, and 26 nonoverlapping channels with a future firmware release (channel support will depend on country regulations), the Cisco Aironet 1130AG Series avoids interference in congested airspace, simplifying the deployment of high-capacity networks. For smooth migration, the Cisco Aironet 1130AG Series takes full advantage of the dual-band capabilities of today's WLAN clients, while providing full backward compatibility for legacy 802.11b clients.

The Cisco Aironet 1130AG Series is part of the award-winning Cisco Wireless Security Suite, which supports 802.11i, WPA2, WPA and numerous Extensible Authentication Protocol (EAP) types. WPA and WPA2 are the Wi-Fi Alliance certifications for interoperable, standards-based WLAN security. These certifications support IEEE 802.1X for user-based authentication, TKIP for WPA encryption, and AES for WPA2 encryption. These certifications help to ensure interoperability between Wi-Fi-certified WLAN devices from different manufacturers.

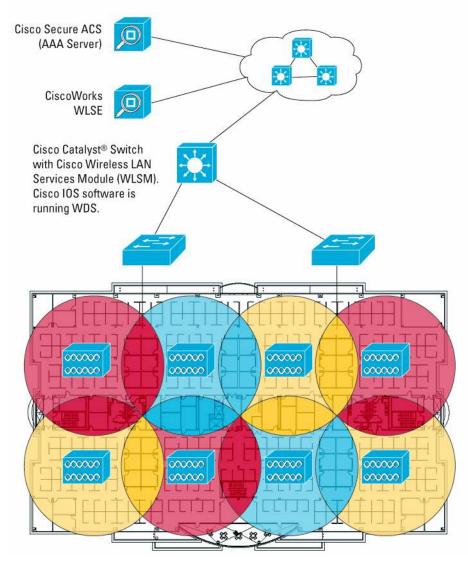
The hardware-accelerated AES encryption of Cisco Aironet 1130AG Series access points supports enterprise-class, government-grade secure encryption over the WLAN without compromising performance. IEEE 802.1X authentication helps to ensure that only authorized users are allowed on the network. Backward compatibility for WPA client devices running TKIP, the RC4 encryption algorithm, is also supported by the Cisco Aironet 1130AG access point.

Driven by Cisco IOS Software, the Cisco Aironet 1130AG Series is designed for enterprise networks. End-to-end Cisco IOS Software enables intelligent network services, which provide connectivity, scalability, and high availability for advanced enterprise applications. A component of the Cisco SWAN framework, the Cisco Aironet 1130AG Series extends the security, scalability, reliability, ease of deployment, and manageability available in wired networks to the WLAN.

The Cisco Aironet 1130AG Series delivers optimal value for offices and similar environments. Built-in antennas provide omnidirectional coverage specifically designed for today's open workspaces. A multipurpose mounting bracket easily secures Cisco Aironet 1130AG Series access points to ceilings and walls. With an unobtrusive design, Cisco Aironet 1130AG Series access points are aesthetically pleasing and blend into their environments. For maximum concealment, the access point may be placed above ceilings or suspended ceilings. The UL 2043 rating of the Cisco Aironet 1130AG Series allows the access point to be placed above ceilings in plenum areas regulated by municipal fire codes. Centrally manageable by the Cisco SWAN management device-the Cisco Wireless LAN Solution Engine (WLSE)-Cisco Aironet 1130AG Series access points can be systematically and dynamically configured to maximize total network performance. Offered at a competitive price, and optimized for easy installation and operation, the Cisco Aironet 1130AG Series helps organizations attain a lower total cost of ownership.

#### **APPLICATIONS**

In offices and similarly open environments, Cisco Aironet 1130AG Series access points may be installed on the ceiling to provide users with continuous coverage as they roam throughout a facility (Figure 1). In school buildings and similar facilities, the access points may be installed on the ceiling of each room and hallway to provide users with full coverage and high network availability (Figure 2). In areas where a ceiling installation may not be practical such as retail hotspots or similar small facilities, the access points can be mounted simply and securely on walls for complete coverage with minimal installation cost (Figure 3).



#### Figure 1. Cisco Aironet 1130AG Series Access Points Installed In Offices for Seamless Roaming

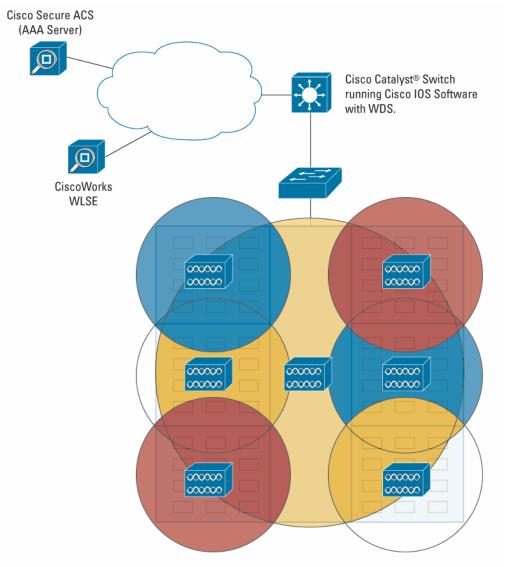
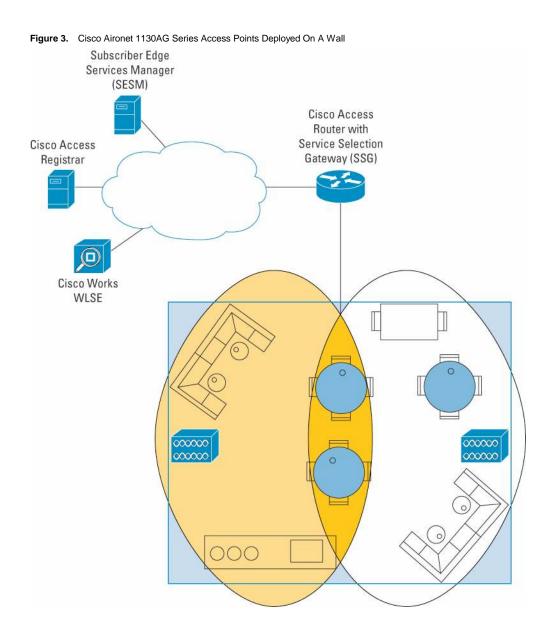


Figure 2. Cisco Aironet 1130AG Series Access Points Installed In Classrooms Above Suspended Ceiling for Maximum Concealment



# FEATURES AND BENEFITS

Table 1 lists features and benefits of Cisco Aironet 1130AG Series access points.

| Feature                         | Benefit  |  |
|---------------------------------|--|--|
| Cisco SWAN Framework            | • Extends security, scalability, reliability, ease of deployment, and manageability available in wired networks to the wireless infrastructure |  |
| Dual 802.11a and 802.11g Radios | • Provides up to 108 Mbps of capacity in a single device for industry-leading capacity and backward compatibility with legacy 802.11b clients. |  |

| Feature  | Benefit  |
|--|--|
| Currently Supports 15 Nonoverlapping<br>Channels; Will Support 26 Channels<br>with a Future Firmware Release | <ul> <li>Lower potential interference with neighboring access points simplifies deployment</li> <li>Fewer transmission errors deliver greater throughput</li> </ul>  |
| Industry-Leading Radio Design  | <ul><li>Provides robust signals to long distances</li><li>Mitigates the effects of multipath signal propagation for more consistent coverage</li></ul>   |
| Variable Transmit Power Settings   | <ul> <li>Allows access point coverage to be tuned for differing requirements</li> <li>Low -1dBm setting supports closer spacing of access points in high-density deployments</li> </ul>                                |
| Integrated Antennas  | <ul> <li>Complete system is deployable out of the box without external antennas</li> <li>Specifically designed to provide omnidirectional coverage for offices and similar radio frequency environments</li> </ul>     |
| Hardware-Assisted AES Encryption   | • Provides high security without performance degradation   |
| IEEE 802.11i-Compliant; WPA2-<br>Certified and WPA-Certified   | • Helps to ensure interoperable security with wireless LAN client devices from other manufacturers   |
| Low-Profile Design   | <ul> <li>Unobtrusive design blends in to environment</li> <li>"Quiet" LED does not draw attention to it when operating normally and no action is required</li> </ul>   |
| Multipurpose and Lockable Mounting<br>Bracket  | <ul><li>Installs easily to walls, ceilings, and suspended ceiling railways</li><li>Accommodates standard padlock to prevent theft</li></ul>  |
| Inline Power Support (IEEE 802.3af<br>and Cisco Inline Power)  | <ul> <li>Provides an interoperable alternative to AC power</li> <li>Simplifies deployment by allowing power to be supplied over the Ethernet cable</li> <li>Compatible with 802.3af-compliant power sources</li> </ul> |
| Cisco IOS Software   | • Delivers enterprise-class features for connectivity, scalability, and high availability  |

# SUMMARY/CONCLUSION

The Cisco Aironet 1130AG Series provides the ideal enterprise access point for offices and similar environments. With two high-performance radios, these access points provide simultaneous support for the 802.11a and 802.11g standards, offering 108 Mbps of capacity for your growing WLAN. Incorporating AES encryption in hardware, the Cisco Aironet 1130AG Series complies with the 802.11i security standard and is WPA2-certified, helping to assure that your network employs the strongest security available while maintaining interoperability with products from other manufacturers. Cisco IOS Software provides intelligent network services for scalable, robust, enterprise connectivity, while the Cisco SWAN framework integrates wired and wireless networks for end-to-end security, manageability, and mobility. Additional design features, including diversity antennas with omnidirectional coverage and an unobtrusive form factor, along with an attractive price, provide low total cost of ownership.

For office environments, the Cisco Aironet 1130AG Series is a cost-compelling solution for a high-capacity, high-security, enterprise-class WLAN.

### **PRODUCT SPECIFICATIONS**

Table 2 lists the product specifications for Cisco Aironet 1130AG access points.

| Item                 | Specification   |  |
|----------------------|---|--|
| Part Number          | • AIR-AP1131AG-x-K9   |  |
|                      | • Regulatory Domains: (x = Regulatory Domain)   |  |
|                      | • $A = FCC$   |  |
|                      | • C = China   |  |
|                      | • $\mathbf{E} = \mathbf{ETSI}$  |  |
|                      | • $J = TELEC (Japan)$   |  |
|                      | • N = North America (Excluding FCC)   |  |
|                      | Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country please visit: |  |
|                      | http://www.cisco.com/go/aironet/compliance  |  |
|                      | Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.   |  |
| Software             | Cisco IOS Software Release 12.3(2)JA or later   |  |
| Data Rates Supported | <ul> <li>802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps</li> <li>802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps</li> </ul>   |  |
| Network Standard     | IEEE 802.11a, 802.11b, and 802.11g  |  |
| Uplink               | Autosensing 802.3 10/100BASE-T Ethernet   |  |
| Frequency Band and   | Americas (FCC)  |  |
| Operating Channels   | 2.412 to 2.462 GHz; 11 channels   |  |
|                      | 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels   |  |
|                      | China   |  |
|                      | 2.412 to 2.472 GHz; 13 channels   |  |
|                      | 5.725 to 5.825 GHz; 4 channels  |  |
|                      | ETSI  |  |
|                      | 2.412 to 2.472 GHz; 13 channels   |  |
|                      | 5.15 to 5.35 GHz; 8 channels  |  |
|                      | Japan (TELEC)   |  |
|                      | 2.412 to 2.472 GHz; 13 channels Orthogonal Frequency Division Multiplexing (OFDM)   |  |
|                      | 2.412 to 2.484 GHz; 14 channels Complementary Code Keying (CCK)   |  |
|                      | 5.15 to 5.25 GHz; 4 channels  |  |
|                      | North America   |  |
|                      | 2.412 to 2.462 GHz; 11 channels   |  |
|                      | 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels   |  |

# Table 2. Product Specifications for Cisco Aironet 1130AG Access Points

| Item  | Specification  |  |   |   |  |  |
|---|--|--|---|---|--|--|
| Nonoverlapping Channels   | • 802.11a: Up to 12  |  |   | • 802.11b/g: 3  |  |  |
| Receive Sensitivity<br>(typical)  | • 302.11a: 0p to 12         802.11a:         6 Mbps: -87 dBm         9 Mbps: -86 dBm         12 Mbps: -85 dBm         18 Mbps: -84 dBm         24 Mbps: -80 dBm         36 Mbps: -78 dBm         48 Mbps: -73 dBm         54 Mbps: -71 dBm |  | <ul> <li>802.11b/g: 3</li> <li>802.11g: <ol> <li>Mbps: -93 dBm</li> <li>Mbps: -91 dBm</li> <li>S.5 Mbps: -88 dBm</li> <li>Mbps: -86 dBm</li> <li>Mbps: -85 dBm</li> <li>Mbps: -85 dBm</li> <li>Mbps: -85 dBm</li> </ol> </li> <li>12 Mbps: -84 dBm</li> <li>18 Mbps: -83 dBm</li> <li>24 Mbps: -79 dBm</li> <li>36 Mbps: -72 dBm</li> <li>54 Mbps: -70 dBm</li> </ul> |   |  |  |
| Available Transmit<br>Power Settings<br>(Maximum power setting<br>will vary by channel and<br>according to individual<br>country regulations) | 802.11a:<br>OFDM:<br>17 dBm (50 mW)<br>15 dBm (30 mW)<br>14 dBm (25 mW)<br>11 dBm (12 mW)<br>8 dBm (6 mW)<br>5 dBm (3 mW)<br>2 mW (2 dBm)<br>-1 dBm (1 mW)   |  | 802.11g:<br>CCK:<br>20 dBm (100 mW)<br>17 dBm (50 mW)<br>14 dBm (25 mW)<br>11 dBm (12 mW)<br>8 dBm (6 mW)<br>5 dBm (3 mW)<br>2 dBm (2 mW)<br>-1 dBm (1 mW)  |   | 14 dBm   | 3 mW)<br>2 mW)   |
| Range   | Indoor (Distance across open office environment):  |  | vironment):   | Outdoor:  |  |  |
|   | 802.11a:<br>80 ft (24 m) @ 54 Mbps<br>150 ft (45 m) @ 48 Mbps<br>200 ft (60 m) @ 36 Mbps<br>225 ft (69 m) @ 24 Mbps<br>250 ft (76 m) @ 18 Mbps<br>275 ft (84 m) @ 12 Mbps<br>300 ft (91 m) @ 9 Mbps<br>325 ft (100 m) @ 6 Mbps             | 175 ft (5)<br>250 ft (7)<br>275 ft (8)<br>325 ft (1)<br>350 ft (1)<br>360 ft (1)<br>375 ft (1)<br>420 ft (1)<br>440 ft (1) | 0 m) @ 54 Mbps<br>3 m) @ 48 Mbps<br>6 m) @ 36 Mbps<br>4 m) @ 24 Mbps<br>00 m) @ 18 Mbps<br>07 m) @ 12 Mbps<br>10 m) @ 11 Mbps<br>14 m) @ 9 Mbps<br>22 m) @ 6 Mbps<br>28 m) @ 5.5 Mbps<br>34 m) @ 2 Mbps<br>37 m) @ 1 Mbps   | <b>802.11a:</b><br>100 ft (30 m) @ 54<br>300 ft (91 m) @ 48<br>425 ft (130 m) @ 3<br>500 ft (152 m) @ 2<br>550 ft (168 m) @ 1<br>600 ft (183 m) @ 1<br>625 ft (190 m) @ 9<br>650 ft (198 m) @ 6 | 3 Mbps<br>36 Mbps<br>24 Mbps<br>18 Mbps<br>12 Mbps<br>9 Mbps | 802.11g:<br>120 ft (37 m) @ 54 Mbps<br>350 ft (107 m) @ 48 Mbps<br>550 ft (168 m) @ 36 Mbps<br>650 ft (198 m) @ 24 Mbps<br>750 ft (229 m) @ 18 Mbps<br>800 ft (244 m) @ 12 Mbps<br>820 ft (250 m) @ 11 Mbps<br>875 ft (267 m) @ 9 Mbps<br>900 ft (274 m) @ 6 Mbps<br>910 ft (277 m) @ 5.5 Mbps<br>940 ft (287 m) @ 2 Mbps<br>950 ft (290 m) @ 1 Mbps |

| Item       | Specification  |
|------------|--|
|            | Ranges and actual throughput vary based upon numerous environmental factors so individual performance may differ.  |
| Compliance | Standards  |
|            | Safety<br>• UL 60950-1<br>• CAN/CSA-C22.2 No. 60950-1<br>• UL 2043<br>• IEC 60950-1<br>• EN 60950-1  |
|            | Radio Approvals         • FCC Part 15.247, 15.407         • RSS-210 (Canada)         • EN 300.328, EN 301.893 (Europe)         • ARIB-STD 33 (Japan)         • ARIB-STD 66 (Japan)         • ARIB-STD 771 (Japan)         • AS/NZS 4771, 4268.2 (Australia and New Zealand)         EMI and Susceptibility (Class B)         • FCC Part 15.107 and 15.109         • ICES-003 (Canada)         • VCCI (Japan)         • EN 301.489-1 and -17 (Europe)         • AS/NZS 3548 |
|            | Security<br>• 802.11i, WPA2, WPA<br>• 802.1X<br>• AES, TKIP<br>Other<br>• IEEE 802.11g and IEEE 802.11a<br>• FCC Bulletin OET-65C<br>• RSS-102   |
| Antennas   | <ul> <li>2.4 GHz</li> <li>Gain 3.0 dBi</li> <li>Horizontal Beamwidth 360°</li> <li>5 GHz</li> <li>Gain 4.5 dBi</li> <li>Horizontal Beamwidth 360°</li> </ul>   |

| H  |   |
|--|---|
| Item   | Specification   |
| Security Architecture<br>Client Authentication<br>and Encryption | Cisco Wireless Security Suite supporting WPA and WPA2, including:   |
|  | Authentication  |
|  | <ul> <li>802.1X support, including Cisco LEAP, EAP-Flexible Authentication via Secure Tunneling (EAP-FAST),<br/>Protected EAP- Generic Token Card (PEAP-GTC), PEAP-Microsoft Challenge Authentication Protocol Version 2<br/>(PEAP-MSCHAPv2), EAP-Transport Layer Security (EAP-TLS), EAP-Tunneled TLS (EAP-TTLS), and EAP-<br/>Subscriber Identity Module (EAP-SIM) to yield mutual authentication and dynamic, per-user, per-session<br/>encryption keys (WPA and WPA2)</li> <li>MAC address and standard 802.11 authentication mechanisms</li> </ul> |
|  | Encryption  |
|  | <ul> <li>AES-CCMP encryption (WPA2)</li> <li>TKIP encryption enhancements: key hashing (per-packet keying), message integrity check (MIC) and broadcast key rotation via Cisco TKIP or WPA TKIP</li> <li>Support for static and dynamic IEEE 802.11 WEP keys of 40 bits and 128 bits</li> </ul>   |
| Network Management   | BootP, Secure Shell (SSH) Protocol, Secure HTTP (HTTPS), Trivial File Transfer Protocol (TFTP), FTP, Telnet,  |
|  | console port, Simple Network Management Protocol (SNMP) MIB I and MIB II, CiscoWorks Resource Manager   |
|  | Essentials (RME), CiscoWorks Software Image Manager (SWIM), CiscoWorks Campus Manager, CiscoWorks CiscoView, and CiscoWorks WLSE  |
| Status LEDs  | External:   |
|  | <ul> <li>Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance<br/>status</li> <li>Internal:</li> </ul>   |
|  | • Ethernet LED indicates activity over the Ethernet, status   |
|  | • Radio LED indicates activity over the radios, status  |
| Dimensions (H x W x D)   | 7.5 in. x 7.5 in. x 1.3 in. (19.1 x 19.1 x 3.3 cm)  |
| Weight   | 1.5 lb (0.67 kg)  |
| Environmental  | <ul> <li>32-104°F (0-40°C)</li> <li>10-90 percent humidity (noncondensing)</li> </ul>   |
| System Memory  | <ul><li>32 MB RAM</li><li>16 MB FLASH</li></ul>   |
| Input Power<br>Requirements                                      | <ul> <li>100–240 VAC; 50–60Hz (power supply)</li> <li>36–57 VDC (device)</li> </ul>   |
| Power Draw   | 12.2W maximum   |
| Warranty   | One year  |
| Wi-Fi Certification  | CERTIFIED   |

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### SYSTEM REQUIREMENTS

Table 3 lists the system requirements for Cisco Aironet 1130AG access points.

## Table 3. System Requirements for Cisco Aironet 1130AG Access Points

| Access Utilizing          | Description   |
|---------------------------|---|
| Browser                   | Using the Web browser management GUI, requires a computer running Internet Explorer Version 6.0 or newer, or Netscape Navigator Version 7.0 or newer. |
| Power over Ethernet (PoE) | Power sourcing equipment (PSE) compliant with Cisco Inline Power or IEEE 802.3af, and providing at least 12.2W at 48 VDC.                             |

## **ORDERING INFORMATION**

To place an order, visit the Cisco Ordering Home Page at: http://www.cisco.com/en/US/ordering/index.shtml

Table 4 lists the product part numbers for Cisco Aironet 1130AG access points.

# Table 4. Product Part Numbers for Cisco Aironet 1130AG Access Points

| Part Number       | Product Name   |
|-------------------|--|
| AIR-AP1131AG-A-K9 | Cisco Aironet 1130AG Series IEEE 802.11a/b/g Access Point, FCC Configuration                           |
| AIR-AP1131AG-C-K9 | Cisco Aironet 1130AG Series IEEE 802.11a/b/g Access Point, China Configuration                         |
| AIR-AP1131AG-E-K9 | Cisco Aironet 1130AG Series IEEE 802.11a/b/g Access Point, ETSI Configuration                          |
| AIR-AP1131AG-J-K9 | Cisco Aironet 1130AG Series IEEE 802.11a/b/g Access Point, Japan Configuration                         |
| AIR-AP1131AG-N-K9 | Cisco Aironet 1130AG Series IEEE 802.11a/b/g Access Point, North America Configuration (excluding FCC) |

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#### FOR MORE INFORMATION

For more information about the Cisco Aironet 1130AG Series, visit: http://www.cisco.com/go/wireless

For more information about Cisco IOS Software, visit: <u>http://www.cisco.com/go/ios</u>

For more information about the Cisco SWAN framework, visit: http://www.cisco.com/go/swan



#### **Corporate Headquarters**

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA www.cisco.com Tel: 408 526-4000 800 553-NETS (6387) Fax: 408 526-4100

#### **European Headquarters** Cisco Systems International

BV Haarlerbergpark Haarlerbergweg 13-19 1101 CH Amsterdam The Netherlands www-europe.cisco.com Tel: 31 0 20 357 1000 Fax: 31 0 20 357 1100

#### Americas Headquarters Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA www.cisco.com Tel: 408 526-7660 Fax: 408 527-0883

#### Asia Pacific Headquarters

Cisco Systems, Inc. 168 Robinson Road #28-01 Capital Tower Singapore 068912 www.cisco.com Tel: +65 6317 7777 Fax: +65 6317 7799

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