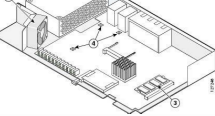


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Date Sheet

## Cisco 1921 Series Integrated Services Routers

Product Names: CISCO 1921/K9, CISCO 1921-SEC/K9, and CISCO 1921DC/K9

Cisco® 1900 Series Integrated Services Routers (ISRs) build on 25 years of Cisco innovation and product leadership. The new platforms are architected to enable the next phase of branch-office evolution, providing rich-media collaboration to the branch office while maximizing operational cost savings. The Cisco Integrated Services Routers Generation 2 (ISR G2) platforms are future-enabled with multicore CPUs, Gigabit Ethernet switching with enhanced Power over Ethernet (PoE), and new energy monitoring and control capabilities that enhance overall system performance. Additionally, a new Cisco IOS® Software Universal image enables you to decouple the deployment of hardware and software, providing a stable technology foundation that can quickly adapt to evolving network requirements. Overall, the Cisco 1900 Series offers exceptional total cost of ownership (TCO) savings and network agility through the intelligent integration of market-leading security, unified communications, wireless, and application services.

### Product Overview

The Cisco 1921 builds on the best-in-class offering of the Cisco 1841 Integrated Services Routers. All Cisco 1900 Series Integrated Services Routers offer embedded hardware encryption acceleration, optional firewall, intrusion prevention, and advanced security services. In addition, the platforms support the industry's widest range of wired and wireless connectivity options such as Serial, T1/E1, xDSL, Gigabit Ethernet, and third-generation (3G) wireless (Figure 1).

Figure 1. Cisco 1921 Integrated Services Router



### Key Business Benefits

Cisco ISR G2 routers provide superior services integration and agility. Designed for scalability, the modular architecture of these platforms enables you to grow and adapt with your business needs. Table 1 lists the business benefits of the Cisco 1900.

Table 1. Key Features and Benefits of the Cisco 1921 Integrated Services Router

Benefits	Description
Service integration	<ul style="list-style-type: none"> <li>The Cisco 1921 offers increased levels of services integration with data, security, wireless, and mobility services, enabling greater efficiencies and cost savings.</li> </ul>
Services on demand	<ul style="list-style-type: none"> <li>A single Cisco IOS Software Universal image is installed on each ISR G2. The Universal image contains all of the Cisco IOS Software technology sets that can be activated with a software license, allowing your business to quickly deploy advanced features without downloading a new Cisco IOS Software image. Additionally, larger default memory is included to support the new capabilities.</li> </ul>
High performance with integrated services	<ul style="list-style-type: none"> <li>The Cisco 1900 Series enables deployment in high-speed WAN environments with concurrent services enabled up to 10 Mbps.</li> </ul>



This document is to be used in conjunction with the document listed in the "Related Documentation" section.

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Cisco ap 1851 default password.

Skip to content You're Reading a Free Preview Pages 7 to 8 are not shown in this preview. You're Reading a Free Preview Pages 13 to 26 are not shown in this preview. Cisco Aironet 1850 Series Product overview Ideal for small and medium-sized networks, the Cisco® Aironet® 1850 Series delivers industry-leading performance for enterprise and service provider markets via enterprise-class 4x4 MIMO, four-spatial-stream access points that support the IEEE's new 802.11ac Wave 2 specification. The Aironet 1850 Series extends support to a new generation of Wi-Fi clients, such as smartphones, tablets, and high-performance laptops that have integrated 802.11ac Wave 1 or Wave 2 support. Features and benefits With 802.11ac Wave 2, the Aironet 1850 Series provides a data rate of up to 1.7 Gbps on the 5-GHz radio, more than triple the rates offered by today's high-end 802.11n access points. It also enables a total aggregate dual-radio data rate of 2.0 Gbps, providing the necessary foundation for enterprise and service provider networks to stay ahead of the performance and bandwidth expectations and needs of their wireless users. Due to its convenience, wireless access is increasingly the preferred form of network connectivity for corporate users. Along with this shift, there is an expectation that wireless should not slow down users' day-to-day work, but should enable a high-performance experience while allowing users to move freely. The 1850 Series delivers industry-leading performance for highly secure and reliable wireless connections and provides a robust mobility experience that includes:
• 802.11ac Wave 2 with 4x4 Multiple-Input Multiple-Output (MIMO) technology with four spatial streams when operating in single-user MIMO mode and three spatial streams while operating in multiuser MIMO mode, offering 1.7-Gbps rates for more capacity and reliability than competing access points.
• Multiuser MIMO, allowing transmission of data to multiple 802.11ac Wave 2 capable clients simultaneously to improve client experience. Prior to multiuser MIMO, 802.11n and 802.11ac Wave 1 access points could transmit data to only one client at a time, typically referred to as single-user MIMO.
• Transmit beamforming technology to improve downlink performance to mobile devices, including one-, two-, and three-spatial-stream devices on 802.11ac, while improving battery life on mobile devices such as smartphones and tablets.
• Flexible deployment mode through Cisco Mobility Express is ideal for small to medium-sized deployments that require multiple access points. Easy setup allows the 1850 Series to be deployed on networks without a physical controller.
• Secure connections for remote workers or the micro-office. Any Cisco Aironet or Catalyst access point can function as an OfficeExtend Access Point (OEAP). With an OEAP, an employee at home or in a temporary micro-office will have access to the corporate SSID and the corporate network without the need to set up a VPN or have any advanced technical know-how.
• Cisco User Defined Network, a feature available in Cisco DNA Center, that allows IT to give end users control of their very own wireless network partition on a shared network. End users can then remotely and securely deploy their devices on this network. Perfect for university dormitories or extended hospital stays, Cisco User Defined Network grants both device security and control, allowing each user to choose who can connect to their network. (Available second half of calendar year 2020.)
• The Wi-Fi 6 readiness dashboard, a new dashboard in the Assurance menu of Cisco DNA Center. It will look through the inventory of all devices on the network and verify device, software, and client compatibility with the new Wi-Fi 6 standard. After upgrading, advanced wireless analytics will indicate performance and capacity gains as a result of the Wi-Fi 6 deployment. This is an incredible tool that will help your team define where and how the wireless network should be upgraded. It will also give you insights into the access point distribution by protocol (802.11ac/n/abg), wireless airtime efficiency by protocol, and granular performance metrics. All of these features help ensure the best possible end-user experience on the wireless network. Cisco also offers the industry's broadest selection of 802.11n and 802.11ac antennas, delivering optimal coverage for a variety of deployment scenarios. The Cisco Aironet 1850 Series Access Points also support:
• The Onyx BLE Beacon Solution, which provides a feature that the Aironet access points as missing: built-in Bluetooth Low Energy (BLE). The Onyx BLE Beacons work smoothly with indoor location-based services. Used for indoor navigation, proximity marketing, and asset tracking, BLE is a tool that is becoming more and more useful with each passing day. With the Onyx BLE Beacons, customers can add BLE to their networks. Product specifications Table 1. Product specifications Feature Specifications Software Cisco Unified Wireless Network Software Release with AireOS wireless controllers.
• 8.1 MR1 or later for the Cisco Aironet 1850 Series Access Points Deployment modes Centralized Local, Standalone\*, Sniffer, Cisco FlexConnect™, Monitor\*\*, OfficeExtend\*\*, Mesh\*\* Supported wireless LAN controllers
• Cisco 2500 Series Wireless Controllers, Cisco 3500 Series Wireless Controllers, Cisco Wireless Controller Module for ISR G2, Cisco Wireless Services Module 2 (WISM2) for Catalyst
• 6500 Series Switches, Cisco 5500 Series Wireless Controllers, Cisco Flex
• 7500 Series Wireless Controllers, Cisco Catalyst 9800 Series Wireless Controllers, Cisco Catalyst 9300 Series Wireless Controllers, Cisco Catalyst 3650/3850 Series Switches with integrated controller \*\* 802.11n version 2.0 (and related) capabilities
• 4x4 MIMO with four spatial streams
• Maximal Ratio Combining (MRC)
• 20- and 40-MHz channels
• PHY data rates up to 600 Mbps (40 MHz with 5 GHz)
• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)
• 802.11 Dynamic Frequency Selection (DFS)
• Cyclic Shift Diversity (CSD) support 802.11ac Wave 1 and 2 capabilities
• 4x4 MIMO with four spatial streams, single-user MIMO
• 4x4 MIMO with three spatial streams, multiuser MIMO
• 802.11ac beamforming (transmit beamforming)
• 20-, 40-, and 80-MHz channels
• PHY data rates up to 1.7 Gbps (80 MHz in 5 GHz)
• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) Data rates supported 802.11ac: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps 802.11n: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps 802.11n data rates on 2.4 GHz (only 20 MHz and MCS 9 to MCS 23) and 5 GHz, MCS Index1 GI2 = 800 ns GI = 800 ns GI = 400 ns GI = 400 ns 20-MHz Rate (Mbps) 40-MHz Rate (Mbps) 20-MHz Rate (Mbps) 40-MHz Rate (Mbps) 0 6.5 13.5 7.2 15 1 13 27 14.4 30 2 19.5 40.5 21.7 45 3 26 54 28.9 60 4 39 81 43.3 90 5 52 108 57.8 120 6 58.5 121.5 65 135 1 MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values. 2 GI: A Guard Interval (GI) between symbols helps receivers overcome the effects of multipath delay spreads. Feature Specifications Data rates supported MCS Index3 GI4 = 800 ns GI = 800 ns GI = 400 ns GI = 400 ns 20-MHz Rate (Mbps) 40-MHz Rate (Mbps) 20-MHz Rate (Mbps) 40-MHz Rate (Mbps) 7 65 135 72.2 150 8 13 27 14.4 30 9 26 54 28.9 60 10 39 81 43.3 90 11 52 108 57.8 120 12 78 162 86.7 180 13 104 216 115.6 240 14 117 243 130 270 15 130 270 144 300 16 156 324 173.3 360 22 175.5 364.5 195 405 23 195 405 216 450 24 26 54 28.9 60 25 52 108 57.8 120 26 78 162 86.7 180 27 104 216 115.6 240 28 156 324 173.3 360 29 208 432 231 480 30 234 486 260 540 31 260 540 288.9 600 802.11ac data rates (5 GHz): MCS Index Spatial Streams GI = 800 ns GI = 400 ns GI = 400 ns 20-MHz Rate (Mbps) 40-MHz Rate (Mbps) 20-MHz Rate (Mbps) 40-MHz Rate (Mbps) 0 1 6.5 13.5 29.3 7.2 15 32.5 1 1 13 27 58.5 14.4 30 65 2 1 19.5 40.5 87.8 21.7 45 97.5 3 1 26 54 117 60 130 4 1 39 81 175.5 43.3 90 195 5 1 52 108 234 57.8 120 260 6 1 58.5 121.5 263.3 65 135 292.5 7 1 65 135 292.5 72.2 150 325 8 1 78 162 351 86.7 180 390 3 MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values. 4 GI: A Guard Interval (GI) between symbols helps receivers overcome the effects of multipath delay spreads. Feature Specifications MCS index Spatial streams GI = 800 ns GI = 400 ns 20-MHz rate (Mbps) 40-MHz rate (Mbps) 80-MHz rate (Mbps) 20-MHz rate (Mbps) 40-MHz rate (Mbps) 80-MHz rate (Mbps) 9 1 - 180 390 - 200 433.3 0 2 13 27 58.5 14.4 30 65 1 2 26 54 117 28.9 60 130 2 2 39 81 175.5 43.3 90 195 3 2 52 108 234 57.8 120 260 4 2 78 162 351 86.7 180 390 5 2 104 216 468 115.6 240 520 6 2 117 243 526.5 130 270 585 7 2 130 270 585 7 2 130 270 585 7 2 130 270 585 8 2 156 324 702 173.3 360 780 9 2 - 360 780 - 400 866.7 0 3 19.5 40.5 87.8 21.7 45 97.5 1 3 39 81 175.5 43.3 90 195 2 3 58.5 121.5 263.3 65 135 292.5 3 3 78 162 351 86.7 180 390 4 3 117 243 526.5 130 270 585 5 3 156 324 702 173.3 360 780 6 3 175.5 364.5 - 195 405 - 7 3 195 405 87.75 8 3 234 486 1053 260 540 1170 9 3 260 540 1170 288.9 600 1300 0 4 26 54 117 28.9 60 130 1 4 52 108 234 57.8 120 260 2 4 78 162 351 86.7 180 390 3 4 104 216 468 115.6 240 520 4 156 324 702 173.3 360 780 5 4 208 432 936 231 480 1040 6 4 234 486 1053 260 540 1170 7 4 260 540 1170 288.9 600 1300 8 4 312 648 1404 346.7 720 1560 9 4 - 720 1560 - 800 1733.3 Maximum number of nonoverlapping channels A (A regulatory domain):
• 2.412 to 2.462 GHz; 3 channels
• 5.180 to 5.320 GHz; 8 channels
• 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)
• 5.745 to 5.825 GHz; 5 channels B (B regulatory domain):
• 2.412 to 2.462 GHz; 3 channels
• 5.180 to 5.320 GHz; 8 channels
• 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz) F (F regulatory domain):
• 2.412 to 2.472 GHz; 3 channels
• 5.745 to 5.825 GHz; 5 channels D (D regulatory domain):
• 2.412 to 2.462 GHz; 3 channels
• 5.180 to 5.320 GHz; 8 channels
• 5.745 to 5.825 GHz; 5 channels E (E regulatory domain):
• 2.412 to 2.472 GHz; 3 channels
• 5.180 to 5.320 GHz; 8 channels
• 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz) F (F regulatory domain):
• 2.412 to 2.472 GHz; 3 channels

5.350 GHz; 4 channels ● 5.725 to 5.825 GHz; 4 channels H (H regulatory domain) ● 2.412 to 2.472 GHz; 3 channels ● 5.150 to 5.350 GHz; 8 channels ● 5.745 to 5.825 GHz; 5 channels I (I regulatory domain) ● 2.412 to 2.472 GHz; 3 channels ● 5.180 to 5.320 GHz; 8 channels K (K regulatory domain) ● 2.412 to 2.472 GHz; 3 channels ● 5.180 to 5.320 GHz; 8 channels ● 5.500 to 5.620 GHz; 7 channels ● 5.745 to 5.805 GHz; 4 channels N (N regulatory domain) ● 2.412 to 2.462 GHz; 3 channels ● 5.180 to 5.320 GHz; 8 channels ● 5.745 to 5.825 GHz; 5 channels O (O regulatory domain) ● 2.412 to 2.472 GHz; 3 channels ● 5.180 to 5.320 GHz; 8 channels ● 5.500 to 5.700 GHz; 11 channels R (R regulatory domain) ● 2.412 to 2.472 GHz; 3 channels ● 5.180 to 5.320 GHz; 8 channels ● 5.660 to 5.805 GHz; 7 channels S (S regulatory domain) ● 2.412 to 2.472 GHz; 3 channels ● 5.180 to 5.320 GHz; 8 channels ● 5.500 to 5.700 GHz; 11 channels ● 5.745 to 5.825 GHz; 5 channels T (T regulatory domain) ● 2.412 to 2.462 GHz; 3 channels ● 5.280 to 5.320 GHz; 3 channels ● 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz) ● 5.745 to 5.825 GHz; 5 channels Z (Z regulatory domain) ● 2.412 to 2.462 GHz; 3 channels ● 5.180 to 5.320 GHz; 8 channels ● 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz) ● 5.745 to 5.825 GHz; 5 channels Note: Customers are responsible for verifying approval for use in their individual countries. To verify approval that corresponds to a particular country, visit . Maximum number of nonoverlapping channels 2.4 GHz : 20 MHz; 3 : 5 GHz : 20 MHz; 25 : 20 MHz; 25 : 40 MHz; 12 : 20 MHz; 21 : 40 MHz; 12 : 80 MHz; 6 Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain. Receive sensitivity ◦ -101 dBm @ 1 Mbps ◦ -98 dBm @ 2 Mbps ◦ -92 dBm @ 5.5 Mbps ◦ -89 dBm @ 11 Mbps ◦ -96 dBm @ 6 Mbps ◦ -95 dBm @ 12 Mbps ◦ -94 dBm @ 18 Mbps ◦ -88 dBm @ 24 Mbps ◦ -85 dBm @ 36 Mbps ◦ -80 dBm @ 48 Mbps ◦ -79 dBm @ 54 Mbps 2.4 GHz : -96 dBm @ MCS0 ◦ -93 dBm @ MCS1 ◦ -90 dBm @ MCS2 ◦ -87 dBm @ MCS3 ◦ -84 dBm @ MCS4 ◦ -79 dBm @ MCS5 ◦ -78 dBm @ MCS6 ◦ -76 dBm @ MCS7 ◦ -93 dBm @ MCS8 ◦ -90 dBm @ MCS9 ◦ -87 dBm @ MCS10 ◦ -84 dBm @ MCS11 ◦ -81 dBm @ MCS12 ◦ -76 dBm @ MCS13 ◦ -76 dBm @ MCS14 ◦ -73 dBm @ MCS15 ◦ -91 dBm @ MCS16 ◦ -87 dBm @ MCS17 ◦ -85 dBm @ MCS18 ◦ -81 dBm @ MCS19 ◦ -78 dBm @ MCS20 ◦ -74 dBm @ MCS21 ◦ -72 dBm @ MCS22 ◦ -71 dBm @ MCS23 ◦ -89 dBm @ MCS24 ◦ -85 dBm @ MCS25 ◦ -83 dBm @ MCS26 ◦ -79 dBm @ MCS27 ◦ -76 dBm @ MCS28 ◦ -72 dBm @ MCS29 ◦ -70 dBm @ MCS30 ◦ -69 dBm @ MCS31 5 GHz : -93 dBm @ MCS0 ◦ -90 dBm @ MCS1 ◦ -87 dBm @ MCS2 ◦ -84 dBm @ MCS3 ◦ -80 dBm @ MCS4 ◦ -76 dBm @ MCS5 ◦ -75 dBm @ MCS6 ◦ -73 dBm @ MCS7 ◦ -73 dBm @ MCS8 ◦ -71 dBm @ MCS9 ◦ -70 dBm @ MCS10 ◦ -81 dBm @ MCS11 ◦ -77 dBm @ MCS12 ◦ -73 dBm @ MCS13 ◦ -72 dBm @ MCS14 ◦ -70 dBm @ MCS15 ◦ -88 dBm @ MCS16 ◦ -85 dBm @ MCS17 ◦ -82 dBm @ MCS18 ◦ -79 dBm @ MCS19 ◦ -75 dBm @ MCS20 ◦ -71 dBm @ MCS21 ◦ -70 dBm @ MCS22 ◦ -68 dBm @ MCS23 ◦ -86 dBm @ MCS24 ◦ -83 dBm @ MCS25 ◦ -80 dBm @ MCS26 ◦ -77 dBm @ MCS27 ◦ -73 dBm @ MCS28 ◦ -69 dBm @ MCS29 ◦ -68 dBm @ MCS30 ◦ -66 dBm @ MCS31 802.11ac receive sensitivity 802.11ac (non HT80) MCS index Spatial streams VHT20 VHT40 VHT80 0 1 -96 dBm -93 dBm -89 dBm 7 1 -76 dBm -73 dBm -70 dBm 8 1 NA -67 dBm -64 dBm 0 2 -93 dBm -90 dBm -86 dBm 7 2 -73 dBm -70 dBm -67 dBm 8 2 -68 dBm -63 dBm 9 2 NA -64 dBm -61 dBm 0 3 -91 dBm -88 dBm -84 dBm 7 3 -71 dBm -68 dBm -65 dBm 8 3 -66 dBm -64 dBm -61 dBm 9 3 -64 dBm -62 dBm -59 dBm MCS index Spatial streams VHT20 VHT40 VHT80 0 4 -89 dBm -86 dBm -82 dBm 7 4 -69 dBm -66 dBm -63 dBm 8 4 -64 dBm -62 dBm -59 dBm 9 4 NA -60 dBm -57 dBm Maximum transmit power 2.4 GHz : 22 dBm, 3 antennas ◦ 22 dBm, 3 antennas ◦ 22 dBm, 4 antennas ◦ 23 dBm, 4 antennas ◦ 23 dBm, 4 antennas ◦ non-HT80: 23 dBm, 4 antennas ◦ VHT20: 23 dBm, 4 antennas ◦ VHT40: 23 dBm, 4 antennas ◦ VHT80: 23 dBm, 4 antennas Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details. Available transmit power settings 2.4 GHz 5 GHz Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details. Integrated antenna ● 2.4 GHz, gain 3 dBi, internal omni, horizontal beamwidth 360° ● 5 GHz, gain 5 dBi, internal omni, horizontal beamwidth 360° External antenna (sold separately) ● Certified for use with antenna gains up to 6 dBi (2.4 GHz and 5 GHz) ● Cisco offers the industry’s broadest selection of antennas, delivering optimal coverage for a variety of deployment scenarios Interfaces ● 1 x 10/100/1000BASE-T autosenising (RJ-45), Power over Ethernet (PoE) ● 1 x 10/100/1000BASE-T autosenising (RJ-45), AUX (used for Link Aggregation) ● Management console port (RJ-45) ● USB 2.0 (enabled via future software) Indicators ● Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors Dimensions (W x L x H) ● Access point (without mounting bracket): 8.3 x 8.3 x 2 in. (210.8 x 210.8 x 50.8 mm) Weight Environmental Cisco Aironet 1850i ● Nonoperating (storage) temperature: -22° to 158°F (-30° to 70°C) ● Nonoperating (storage) altitude test: 25°C, 15,000 ft. ● Operating temperature: 32° to 104°F (0° to 50°C) ● Operating humidity: 10% to 90% (noncondensing) ● Operating altitude test: 40°C, 9843 ft. System memory Input power requirements ● Power supply and power injector: 100 to 240 VAC; 50 to 60 Hz Power draw Note: When deployed using a Power over Ethernet (PoE) specification, the power drawn from the power sourcing equipment will be higher by some amount, depending on the length of the interconnecting cable. Powering options ● Cisco power injector, AIR-PWRINJ4= ● Cisco local power supply, AIR-PWR-C= ● Cisco Power Injector, AIR-PWRINJ5= (Note: This injector supports 802.3af only) Note: If 802.3af PoE is the source of power, (1) the 1852e 2.4-GHz radio will shift to 2x3 from 3x4, (2) The USB port and AUX Ethernet port are disabled on both the 1852i and 1852e. Warranty Limited lifetime hardware warranty Compliance standards ● UL 60950-1 ● CAN/CSA-C22.2 No. 60950-1 ● UL 2043 ● IEC 60950-1 ● EN 60950-1 ● EN 50155 for 2800e (Operating temperature -20° to 50°C) ● FCC Part 15.247, 15.407\* ● RSS-210 (Canada) ● EN 300.328, EN 301.893 (Europe) ● ARIB-STD 66 (Japan) ● ARIB-STD T71 (Japan) ● EMI and susceptibility (Class B) ◦ FCC Part 15.107 and 15.109\* ● ICES-003 (Canada) ● VCCI (Japan) ◦ EN 301.489-1 and -17 (Europe) ◦ EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC ◦ IEEE 802.11a/b/g, 802.11n, 802.11h, 802.11d ◦ IEEE 802.11ac (DRAFT v0 ◦ 802.11i, Wi-Fi Protected Access 3 (WPA3), (WPA2), WPA ◦ 802.1X ◦ Advanced Encryption Standard (AES) ● Extensible Authentication Protocol (EAP) types: ◦ EAP-Transport Layer Security (TLS) ◦ EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2) ◦ Protected EAP (PEAP) v0 or EAP-MSCHAPv2 ◦ EAP-Flexible Authentication via Secure Tunneling (FAST) ◦ PEAP v1 or EAP-Generic Token Card (GTC) ◦ EAP-Subscriber Identity Module (SIM) ◦ Wi-Fi Multimedia (WMM) ◦ FCC Bulletin OET-65C ◦ RSS-102 \* Supported via Cisco Mobility Express with controller function running on the access point - not Cisco IOS © Software Autonomous based. Licensing In order to connect any access points to the controller, Cisco DNA software subscriptions are required. To be entitled to connect to a Cisco Catalyst 9800 Series Wireless Controller, the access point requires a Cisco DNA subscription license. Determining license requirements for access points connecting to Cisco Catalyst 9800 Series Wireless Controllers Access points connecting to a Cisco Catalyst 9800 Series controller have new and simplified software subscription packages. They can support both tiers of Cisco DNA software: Cisco DNA Essentials and Cisco DNA Advantage. Cisco DNA software subscriptions provide Cisco innovations on the access point. They also include perpetual Network Essentials and Network Advantage licensing options, which cover wireless fundamentals such as 802.1X authentication, Quality of Service (QoS), and Plug and Play (PnP); telemetry and visibility, and Single Sign-On (SSO), as well as security controls. Cisco DNA subscription software has to be purchased for a 3-, 5-, or 7-year subscription term. If not renewed by the end of the term, Cisco DNA features will expire, whereas Network Essentials and Network Advantage features will remain. For the full feature list of Cisco DNA Software, including the perpetual Network Essentials and Network Advantage, please see the feature matrix: Two modes of licensing are available: ● Smart Licensing (SL) simplifies and adds flexibility to licensing. It is: ◦ Simple: Procure, deploy, and manage licenses easily. Devices self-register, removing the need for Product Activation Keys (PAKs). ◦ Flexible: Pool license entitlements in a single account. Move licenses freely through the network, wherever you need them. ◦ Smart: Manage your license deployments with real-time visibility into ownership and consumption. ● Specific License Reservation (SLR) is a feature used in highly secure networks. It provides a method for customers to deploy a software license on a device (product instance) without communicating usage information to Cisco. There is no communication with Cisco or a satellite. The licenses are reserved for every controller. It is node-based licensing. Four levels of license are supported on the Cisco Catalyst 9800 Series Wireless Controllers. The controllers can be configured to function at any one of the four levels. ● Cisco DNA Essentials: At this level the Cisco DNA Essentials feature set will be supported. ● Cisco DNA Advantage: At this level the Cisco DNA Advantage feature set will be supported. ● NE: At this level the Network Essentials feature set will be supported. ● NA: At this level the Network Advantage feature set will be supported. For customers who purchase Cisco DNA Essentials, Network Essentials will be supported and will continue to function even after term expiration. And for customers who purchase Cisco DNA Advantage, Network Advantage will be supported and will continue to function even after term expiration. Initial bootup of the controller will be at the Cisco DNA Advantage level. For questions, contact the Cisco Catalyst 9800 Series Wireless Controllers Licensing maller group at ask-catalyst9800licensing Warranty information The Cisco Aironet 1850 Series Access Points come with a limited lifetime warranty that provides full warranty coverage of the hardware for as long as the original end user continues to own or use the product. The warranty includes 10-day advance hardware replacement and ensures that software media are defect-free for 90 days. For more details, visit . Cisco environmental sustainability Information about Cisco’s environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the “Environment Sustainability” section of Cisco’s Corporate Social Responsibility (CSR) Report. Reference links to information about key environmental sustainability topics (mentioned in the “Environment Sustainability” section of the CSR Report) are provided in Table 2. Table 2. Links to sustainability information Sustainability topic Reference Information on product material content laws and regulations Materials Information on electronic waste laws and regulations, including products, batteries, and packaging WEEE compliance Sustainability inquiries Contact: csr\_inquiries@cisco.com Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice. Ordering information To place an order, visit the Cisco How to Buy page. To download software, visit the Cisco Software Center. Table 3. Ordering information Product name Part number Aironet 1850 Series Cisco Aironet 1852i Access Point: Indoor environments, with internal antennas ● AIR-AP1852i-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2 ● AIR-AP1852i-x-K9C: Dual-band, controller-based 802.11a/g/n/ac, Wave 2, configurable ● Regulatory domains: (x = regulatory domain) Cisco Aironet 1852e Access Point: Indoor, challenging environments, with external antennas ● AIR-AP1852E-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2 ● AIR-AP1852E-x-K9C: Dual-band, controller-based 802.11a/g/n/ac, Wave 2, configurable ● Regulatory domains: (x = regulatory domain) Customers are responsible for verifying approval for use in their individual countries. To verify approval that corresponds to a particular country or the regulatory domain used in a specific country, visit . Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List. 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