Cisco Aironet 1815t Access Points

Contents

Perfect for the teleworker or for a micro-branch deployment, this easy-to-install OfficeExtend access point provides secure wired and wireless access for organizations with employees who work from home.

Product overview

The Cisco® Aironet® 1815t Access Point (Figure 1) offers a highly secure enterprise wired and wireless connection to the home, micro-branch, or any type of remote sites. No longer will geography or the elements play a role in delaying productivity, as the 1815t extends the corporate network to teleworkers, mobile workers, and even micro-sites. The access points connect to the home or on-site broadband Internet access and establish a highly secure tunnel to the corporate network. This tunnel allows remote employees access to data, voice, video, and cloud services for a network experience consistent with that at the corporate office. The 1815t supports highly secure access to corporate data and personal connectivity for teleworkers' home devices, with segmented home traffic.

Figure 1.
Cisco Aironet 1815t Access Point

Features and benefits

The Cisco Aironet 1815t helps improve workforce productivity, business resiliency, and job flexibility while reducing travel costs and carbon emissions. The 1815t targets commercial, enterprise, and service provider networks across all industries. Employees who need reliable and consistent access to networked business services at home, and micro-branches where remote workers require the same network connectivity as at the corporate site, are both excellent candidates for the 1815t.

In recent years corporate users have increasingly preferred wireless access as their form of network connectivity, due to its convenience. 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. The 1815t delivers industry-leading performance, with highly secure and reliable wireless connections that provide a robust, mobile end-user experience.

Cisco User Defined Network, a feature available in Cisco DNA Center, 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 is 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 (802.11 ac/n/abg), wireless airtime efficiency by protocol, and granular performance metrics.

Table 1.   Features and benefits

Feature	Benefit
MU-MIMO	Multiuser (MU) Multiple-Input Multiple-Output (MU-MIMO) allows simultaneous data transmission to multiple 802.11ac Wave 2-capable clients to improve the client experience. Prior to MU-MIMO, 802.11n and 802.11ac Wave 1 access points could transmit data to only one client at a time. This was typically referred to as Single-User MIMO (SU-MIMO).
Real-time service extender	Extends real-time services such as voice, wireless, video, and data to remote locations that have no IT staff. No longer will geography or climate be the reason for lost work hours. Working at home is now like being at the office.
Robust security	Using the same profile as at the corporate office, the Aironet 1815t establishes a secure Datagram Transport Layer Security (DTLS) connection between the access point and the controller to offer remote WLAN connectivity.
Gigabit Ethernet ports	Three local Gigabit Ethernet ports are available to securely connect wired devices to the network. Traffic from wired devices can be tunneled back to a wireless LAN controller (for compatible controllers) or be locally switched by the access point. One of these Ethernet ports can also provide Power over Ethernet (PoE) out to power a device such as an IP phone or a security camera.

Increased wireless performance

The Aironet 1815t supports the latest 802.11ac Wave 2 standard for higher performance, greater access, and higher-density networks. With simultaneous dual radios and dual band with 802.11ac Wave 2 MU-MIMO functionality, this access point can handle the increasing number of high-bandwidth devices that will soon become a common part of the network.

Wired access

The 1815t allows wired access via a single RJ-45 10/100/1000 auto detection port. The access points come with three local Gigabit Ethernet ports and one uplink Gigabit Ethernet port, allowing for a variety of connections.

Mounting

The 1815t can be configured at the corporate office and shipped, for a simple install at the remote office. The integrated antennas optimize wireless coverage when resting on a desk.

Product specifications

Table 2 lists the specifications for the Cisco Aironet 1815t Access Point. Table 3 lists the RF specifications.

Table 2. Specifications

Item	Specification
Authentication and security	• Advanced Encryption Standard (AES) for Wi-Fi Protected Access 3 (WPA3), WPA2, WPA • 802.1X, RADIUS Authentication, Authorization, and Accounting (AAA) • 802.11r • 802.11i
Software	• Cisco Unified Wireless Network Software with AireOS Wireless Controllers Release 8.5.103/85CCO or later
Supported WLAN 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 8500 Series Wireless Controllers, Cisco Catalyst 9800 Series Wireless Controllers
Maximum clients	• Maximum number of associated wireless clients: 200 per Wi-Fi radio, in total 400 clients per access point
802.11ac	• 2x2 single-user/multiuser MIMO with two spatial streams • Maximal Ratio Combining (MRC) • 20-, 40-, and 80-MHz channels • PHY data rates up to 866.7 Mbps (80 MHz on 5 GHz) • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Rx) • 802.11 Dynamic Frequency Selection (DFS) • Cyclic Shift Diversity (CSD) support
Ethernet ports	• Authentication with 802.1X or MAC filtered • Dynamic VLAN or per port • Traffic locally switched or tunneled back to wireless LAN controller
Data rates supported	**802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps**

Data rates supported (continued):

802.11b/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps

802.11n data rates on 2.4 GHz:

MCS Index[1]	GI[2] = 800 ns	GI = 400 ns
	20-MHz Rate (Mbps)	20-MHz Rate (Mbps)
0	6.5	7.2
1	13	14.4
2	19.5	21.7
3	26	28.9
4	39	43.3

Item	Specification		
	5	52	57.8
	6	58.5	65
	7	65	72.2
	8	13	14.4
	9	26	28.9
	10	39	43.3
	11	52	57.8
	12	78	86.7
	13	104	115.6
	14	117	130
	15	130	144.4

802.11ac data rates on 5 GHz:

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)
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	28.9	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
9	1	–	180	390	–	200	433.3

Item	Specification							
	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	144.4	300	650
	8	2	156	324	702	173.3	360	780
	9	2	–	360	780	–	400	866.7
Maximum number of non-overlapping channels	**A (A regulatory domain):** • 2.412 to 2.462 GHz; 11 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; 11 channels • 5.180 to 5.320 GHz; 8 channels • 5.500 to 5.720 GHz; 12 channels • 5.745 to 5.825 GHz; 5 channels **C (C regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.745 to 5.825 GHz; 5 channels **D (D regulatory domain):** • 2.412 to 2.462 GHz; 11 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; 13 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; 13 channels • 5.250 to 5.350 GHz; 4 channels			**K (K regulatory domain):** • 2.412 to 2.472 GHz; 13 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; 11 channels • 5.180 to 5.320 GHz; 8 channels • 5.745 to 5.825 GHz; 5 channels **Q (Q regulatory domain):** • 2.412 to 2.472 GHz; 13 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; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.660 to 5.700 GHz; 3 channels • 5.745 to 5.805 GHz; 4 channels **S (S regulatory domain):** • 2.412 to 2.472 GHz; 13 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; 11 channels • 5.280 to 5.320 GHz; 3 channels				

Item	Specification	

	• 5.725 to 5.825 GHz; 4 channels
	
	 G (G regulatory domain):
	 • 2.412 to 2.472 GHz; 13 channels
	 • 5.745 to 5.865 GHz; 7 channels
	
	 H (H regulatory domain):
	 • 2.412 to 2.472 GHz; 13 channels
	 • 5.180 to 5.320 GHz; 8 channels
	 • 5.745 to 5.825 GHz; 5 channels
	
	 I (I regulatory domain):
	 • 2.412 to 2.472 GHz; 13 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
		
		 Z (Z regulatory domain):
		 • 2.412 to 2.462 GHz; 11 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: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Item	Specification	
Available transmit power settings	**2.4 GHz** 20 dBm (100 mW) 17 dBm (50 mW) 14 dBm (25 mW) 11 dBm (12.5 mW) 8 dBm (6.25 mW) 5 dBm (3.13 mW) 2 dBm (1.56 mW) –1 dBm (0.78 mW)	**5 GHz** 20 dBm (100 mW) 17 dBm (50 mW) 14 dBm (25 mW) 11 dBm (12.5 mW) 8 dBm (6.25 mW) 5 dBm (3.13 mW) 2 dBm (1.56 mW) –1 dBm (0.78 mW)

Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Item	Specification
Integrated antennas	• 2.4 GHz, gain 2 dBi • 5 GHz, gain 3 dBi
Interfaces	• 1 x 10/100/1000BASE-T autosensing (RJ-45) • Three 10/100/1000BASE-T ports (local Ethernet ports), including one PoE out port: ◦ PoE out provides 802.3af when access point is powered by Cisco local power supply (AIR-PWR-D=)
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): 6 x 4 x 1.5 in (152.4 x 101.6 x 37.7mm)
Weight	• Access point without mounting bracket or any other accessories: 13 oz (365 g)

Item	Specification
Environmental	• Operating ◦ Temperature: 32° to 104° F (0° to 40° C) ◦ Humidity: 10% to 90% (non-condensing) ◦ Max. altitude: 9843 ft (3,000 m) @ 40° C • Non-operating (storage and transportation) ◦ Temperature: -22° to 158° F (-30° to 70° C) ◦ Humidity: 10% to 90% (non-condensing) ◦ Max. altitude: 15,000 ft (4,500 m) @ 25° C
System	• 512 MB DRAM • 128 MB flash • 710 MHz quad-core
Input power requirements	• 44 to 52V DC
Power draw	• 8.5W (no PoE out and no USB)
PoE output	• 802.3af: 15.4W at port
Physical security	• Kensington lock slot
Accessories	• Physical security kit: AIR-SEC-50= (sold separately), with 50 pcs. security screws used to secure the access point onto wall-mounting bracket, 50 pcs. RJ-45 caps and 2 pcs. unlock keys used to block physical access to Ethernet ports
Warranty	Limited Lifetime Hardware Warranty
Compliance	• Safety: ◦ UL 60950-1 ◦ CAN/CSA-C22.2 No. 60950-1 ◦ UL 2043 ◦ IEC 60950-1 ◦ EN 60950-1 • Radio approvals: ◦ FCC Part 15.247, 15.407 ◦ RSS-247 (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 50385 • IEEE standards: ◦ IEEE 802.11a/b/g, 802.11n, 802.11h, 802.11d ◦ IEEE 802.11ac • Security: ◦ 802.11i, WPA3, WPA2, WPA ◦ 802.1X ◦ AES • Extensible Authentication Protocol (EAP) types:

Item	Specification
	◦ 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) • Multimedia: ◦ Wi-Fi Multimedia (WMM) • Other: ◦ FCC Bulletin OET-65C ◦ RSS-102

[1] MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, and the coding rate and data rate values.

[2] A Guard Interval (GI) between symbols helps receivers overcome the effects of multipath delay spreads.

Table 3.   RF specifications

Transmit power and receive sensitivity (1815t)					
		2.4-GHz Radio		**5-GHz Radio**	
	Spatial Streams	**Total TX Power (dBm)**	**RX Sensitivity (dBm)**	**Total TX Power (dBm)**	**RX Sensitivity (dBm)**
802.11/11b					
1 Mbps	1	17	–98	NA	NA
11 Mbps	1	17	–89	NA	NA
802.11a/g					
6 Mbps	1	20	–94	17	–94
24 Mbps	1	20	–87	20	–87
54 Mbps	1	20	–78	18	–78

Transmit power and receive sensitivity (1815t)					
		2.4-GHz Radio		5-GHz Radio	
	Spatial Streams	Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)
802.11n HT20					
MSC0	1	20	-93	20	-93
MSC4	1	20	-83	18	-82
MSC7	1	20	-75	16	-75
MSC8	2	20	-90	20	-90
MSC12	2	20	-80	18	-79
MSC15	2	20	-72	16	-72
802.11n HT40					
MSC0	1			20	-90
MSC4	1			18	-79
MSC7	1			16	-72
MSC8	2			20	-87
MSC12	2			18	-76
MSC15	2			16	-69
802.11ac VHT20					
MSC0	1			20	-93
MSC4	1			18	-82
MSC7	1			16	-75
MSC8	1			15	-71
MSC0	2			20	-90
MSC4	2			18	-79
MSC7	2			16	-72
MSC8	2			15	-68

Transmit power and receive sensitivity (1815t)					
		2.4-GHz Radio		5-GHz Radio	
	Spatial Streams	Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)
802.11ac VHT40					
MSC0	1			20	−90
MSC4	1			18	−79
MSC7	1			16	−72
MSC8	1			15	−68
MSC9	1			15	−66
MSC0	2			20	−87
MSC4	2			18	−76
MSC7	2			16	−69
MSC8	2			15	−65
MSC9	2			15	−63
802.11ac VHT80					
MSC0	1			20	−87
MSC4	1			18	−77
MSC7	1			16	−69
MSC8	1			15	−65
MSC9	1			15	−63
MSC0	2			20	−84
MSC4	2			18	−74
MSC7	2			16	−66
MSC8	2			15	−62
MSC9	2			15	−60

Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Ordering information

Table 4 provides ordering information for the Cisco Aironet 1815t Access Point. To place an order, visit the Cisco Ordering homepage. To download software, visit the Cisco Software Center.

Table 4. Ordering information

Product name	Part number
Cisco Aironet 1815t	• AIR-AP1815t-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2 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 https://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.

Cisco Wireless LAN Services

Realize the full business value of your technology investments faster with intelligent, customized services from Cisco and our partners. Backed by deep networking expertise and a broad ecosystem of partners, Cisco Wireless LAN Services enable you to deploy a sound, scalable mobility network that enables rich media collaboration while improving the operational efficiency gained from a converged wired and wireless network infrastructure based on the Cisco Unified Wireless Network. Together with partners, we offer expert plan, build, and run services to accelerate your transition to advanced mobility services while continuously optimizing the performance, reliability, and security of that architecture after it is deployed.

For more details, visit: https://www.cisco.com/c/en/us/products/wireless/service-listing.html.

Cisco Wireless LAN Services

- AS-WLAN-CNSLT: Cisco Wireless LAN Network Planning and Design Service
- AS-WLAN-CNSLT: Cisco Wireless LAN 802.11n Migration Service
- AS-WLAN-CNSLT: Cisco Wireless LAN Performance and Security Assessment Service

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.
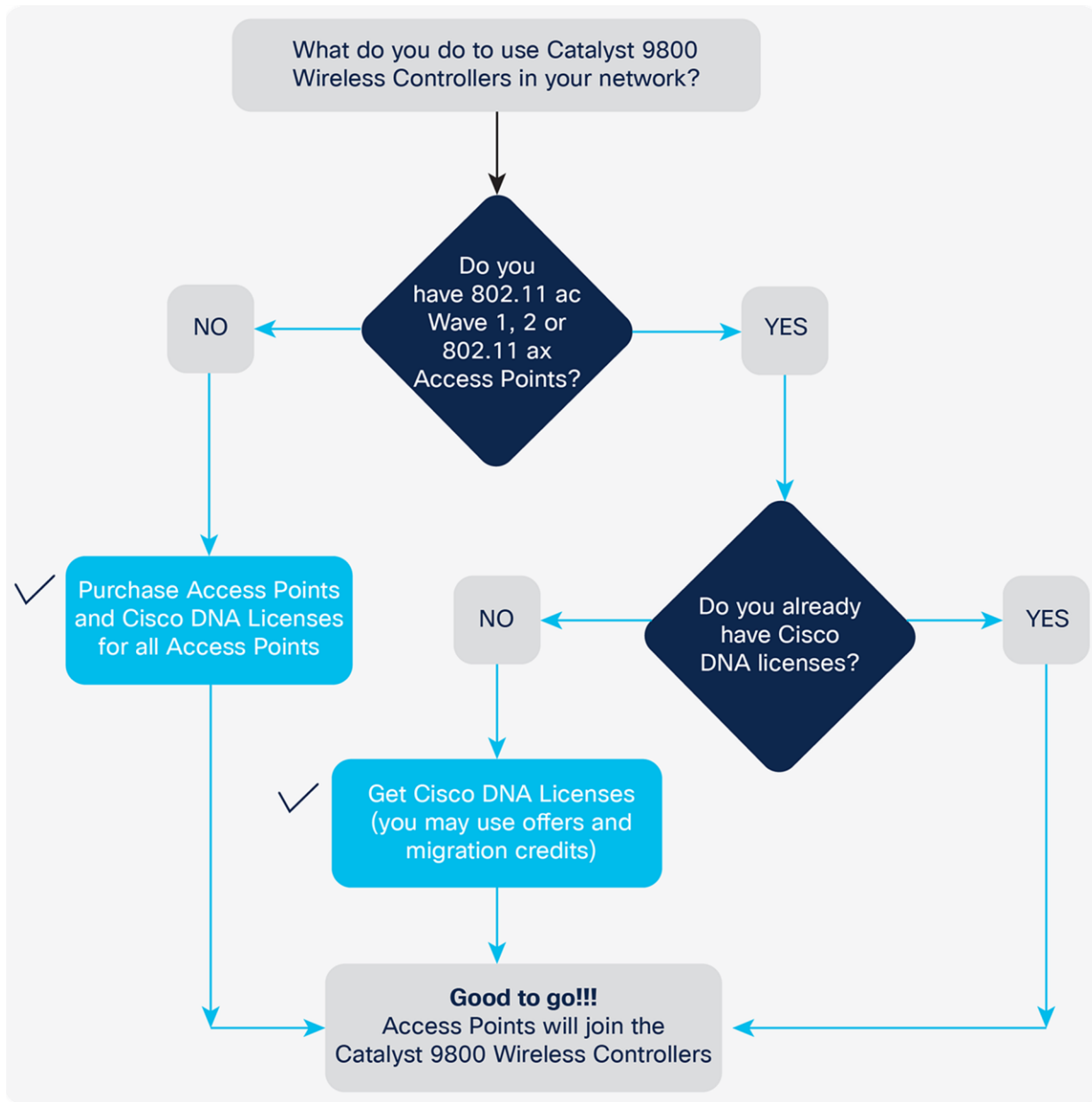
Figure 2.
Determining license requirements for connecting to Cisco Catalyst 9800 Series Wireless Controllers

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: https://www.cisco.com/c/m/en_us/products/software/dna-subscription-wireless/en-sw-sub-matrix-wireless.html?oid=porew018984.

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 mailer group at ask-catalyst9800licensing.

Warranty information

The Cisco Aironet 1815t Access Point comes 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 is defect-free for 90 days. For more details, visit: https://www.cisco.com/go/warranty.

Find warranty information on Cisco.com at the Product Warranties page.

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 the following table:

Table 5.   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.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.

For more information

For more information about the Cisco Aironet 1815t Access Point, visit https://www.cisco.com/c/en/us/products/wireless/aironet-1815-series-access-points/index.html.

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