


# Cisco Aironet 1040 Series Access Points


<p><b>Performance with Investment Protection</b></p> <ul style="list-style-type: none"> <li>• Six times faster than 802.11a/g networks</li> <li>• Backward-compatible with 802.11a/b/g clients</li> </ul>
<p><b>Easy Installation and Power Efficient</b></p> <ul style="list-style-type: none"> <li>• 802.11n performance with existing PoE switches</li> <li>• Sleek design blends into a variety of indoor environments</li> </ul>
<p><b>Secure Interoperability</b></p> <ul style="list-style-type: none"> <li>• 802.11n compliant</li> <li>• Intel Connect with Centrino Certified</li> </ul>
<p><b>Simplified Network Management</b></p> <ul style="list-style-type: none"> <li>• Controller-based or standalone deployment options</li> </ul>
<p><b>Secure Connections</b></p> <ul style="list-style-type: none"> <li>• Supports rogue access point detection and denial of service attacks</li> <li>• Management frame protection detects malicious users and alerts network administrators</li> </ul>
<p><b>Greater Network Capacity</b></p> <ul style="list-style-type: none"> <li>• Dynamic frequency selection 2 (DFS-2) compliant</li> </ul>
<p><b>Easy-to-Install, Multipurpose Mounting Bracket</b></p> <ul style="list-style-type: none"> <li>• Designed for easy replacement of existing access points</li> <li>• UL 2043 plenum rated for above ceiling installation options or suspended from drop ceilings</li> <li>• Locks for theft protection</li> </ul>



The Cisco® Aironet® 1040 Series Access Point is an enterprise-class, entry-level 802.11n access point designed to address the wireless connectivity needs of small and medium-sized enterprises.

## Business Ready 802.11n Performance

With 2x2 multiple-input multiple-output (MIMO) technology providing at least six times the throughput of existing 802.11a/g networks, the Cisco Aironet 1040 Series offers the performance advantage of 802.11n enterprise-class quality at an entry-level price for small and medium-sized enterprises.

As part of the Cisco Unified Wireless Network, the 1040 Series provides low total cost of ownership and investment protection by integrating seamlessly with the existing network.

## RF Excellence

Building on the Cisco Aironet heritage of RF excellence, the 1040 Series delivers secure and reliable wireless connections. Enterprise-class chipsets and optimized radios deliver a robust mobility experience with:

- Optimized antenna and radio designs: Consistent network transmit and receive for optimized rate versus range
- Radio resource management (RRM): Automated self-healing optimizes the unpredictability of RF to reduce dead spots and help ensure high-availability client connections
- [BandSelect](#) improves 5-GHz client connections in mixed client environments
- [VideoStream](#) uses multicast to improve rich-media applications

## Environmentally Responsible

Designed for sustainability, the Cisco Aironet 1040 Series offers 802.11n performance with standard 802.3af Power over Ethernet (PoE). At only 12.95 watts of power, the 1040 Series combines the power of dual-radio 802.11n with the efficiency of standard PoE. The sleek industrial design of the 1040 Series blends seamlessly into any indoor enterprise environment.

For quicker staging and installation, you can order the 1040 Series in multiunit eco-packs, which offer 10 controller-based or 5 standalone access points in a single, easy-to-open carton. Eco-packs reduce product packaging by 50 percent, preserving natural resources and reducing emissions. By eliminating unnecessary components and offering digital instead of paper documentation, the 1040 Series eco-packs will save over 2200 trees per year, which is equal to the amount of power required to heat over 65 homes for an entire year.

The Cisco Aironet 1040 Series is a component of the Cisco Unified Wireless Network, which can scale to up to 18,000 access points with full Layer 3 mobility across central or remote locations on the enterprise campus, in branch offices, and at remote sites.

Cisco Aironet 1040 Series Access Points come with a Limited Lifetime Hardware Warranty that includes 10-day advance hardware replacement.

## Product Specifications

Table 1 lists the product specifications for Cisco Aironet 1040 Series Access Points.

**Table 1.** Product Specifications for Cisco Aironet 1040 Series Access Points

Item	Specification
<b>Part Numbers</b>	<p><b>Cisco Aironet 1040 Series Access Point</b></p> <ul style="list-style-type: none"> <li>• AIR-LAP1042N-x-K9: Dual-band Controller-based 802.11a/g/n</li> <li>• AIR-LAP1041N-x-K9: Single-band Controller-based 802.11g/n</li> <li>• AIR-AP1042N-x-K9: Dual-band Standalone 802.11a/g/n</li> <li>• AIR-AP1041N-x-K9: Single-band Standalone 802.11g/n</li> <li>• AIR-LAP1042-xK9-10: Eco-pack (dual-band 802.11a/g/n) 10 quantity controller-based access points</li> <li>• AIR-AP1042-xK9-5: Eco-pack (dual-band 802.11a/g/n) 5 quantity standalone access points</li> </ul> <p><b>Regulatory domains: (x = regulatory domain)</b></p> <p>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: <a href="http://www.cisco.com/go/aironet/compliance">http://www.cisco.com/go/aironet/compliance</a>.</p> <p>Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.</p>
<b>Software</b>	<ul style="list-style-type: none"> <li>• Cisco Unified Wireless Network Software Release 7.0 or later</li> <li>• Cisco IOS® Software Release to follow (available in Q4CY10)</li> </ul>
<b>802.11n</b>	<ul style="list-style-type: none"> <li>• 2x2 multiple-input multiple-output (MIMO) with two spatial streams</li> <li>• Maximal ratio combining (MRC)</li> <li>• 20- and 40-MHz channels</li> <li>• PHY data rates up to 300 Mbps</li> <li>• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)</li> <li>• 802.11 dynamic frequency selection (DFS) (Bin 5)</li> <li>• Cyclic shift diversity (CSD) support</li> </ul>

Item	Specification				
<b>Data Rates Supported</b>	<b>802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps</b>				
	<b>802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps</b>				
	<b>802.11n data rates (2.4 GHz and 5 GHz):</b>				
	<b>MCS Index<sup>1</sup></b>				
	<b>GI<sup>2</sup> = 800ns</b>				
	<b>GI = 400ns</b>				
	<b>20-MHz Rate (Mbps)</b>				
	<b>40-MHz Rate (Mbps)</b>				
	<b>20-MHz Rate (Mbps)</b>				
	<b>40-MHz Rate (Mbps)</b>				
	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	
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	144.4	300	
<b>Frequency Band and 20-MHz Operating Channels</b>	<p><b>A Regulator Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul> <p><b>C Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul> <p><b>E Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.500 to 5.700 GHz; 11 channels</li> </ul> <p><b>I Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> </ul> <p><b>K Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.500 to 5.620 GHz; 7 channels</li> <li>• 5.745 to 5.805 GHz; 4 channels</li> </ul>				
	<p><b>N Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul> <p><b>P Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> </ul> <p><b>S Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul> <p><b>T Regulatory Domain:</b></p> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.280 to 5.320 GHz; 3 channels</li> <li>• 5.500 to 5.700 GHz; 11 channels</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul>				
<b>Note:</b> This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.					

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

<sup>2</sup> GI: A Guard Interval (GI) between symbols helps receivers overcome the effects of multipath delays.

Item	Specification			
<b>Maximum Number of Nonoverlapping Channels</b>	<b>2.4 GHz</b> <ul style="list-style-type: none"> <li>802.11b/g: <ul style="list-style-type: none"> <li>20 MHz: 3</li> </ul> </li> <li>802.11n: <ul style="list-style-type: none"> <li>20 MHz: 3</li> </ul> </li> </ul>		<b>5 GHz</b> <ul style="list-style-type: none"> <li>802.11a: <ul style="list-style-type: none"> <li>20 MHz: 21</li> </ul> </li> <li>802.11n: <ul style="list-style-type: none"> <li>20 MHz: 21</li> <li>40 MHz: 9</li> </ul> </li> </ul>	
<b>Note:</b> This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.				
<b>Receive Sensitivity</b>	<b>802.11b</b> -89 dBm @ 1 Mb/s -89 dBm @ 2 Mb/s -89 dBm @ 5.5 Mb/s -86 dBm @ 11 Mb/s	<b>802.11g</b> -84 dBm @ 6 Mb/s -84 dBm @ 9 Mb/s -84 dBm @ 12 Mb/s -84 dBm @ 18 Mb/s -83 dBm @ 24 Mb/s -81 dBm @ 36 Mb/s -76 dBm @ 48 Mb/s -75 dBm @ 54 Mb/s	<b>802.11a</b> -88 dBm @ 6 Mb/s -88 dBm @ 9 Mb/s -88 dBm @ 12 Mb/s -88 dBm @ 18 Mb/s -86 dBm @ 24 Mb/s -83 dBm @ 36 Mb/s -78 dBm @ 48 Mb/s -77 dBm @ 54 Mb/s	
	<b>2.4-GHz</b> <b>802.11n (HT20)</b> -86 dBm @ MCS0 -85 dBm @ MCS1 -84 dBm @ MCS2 -82 dBm @ MCS3 -78 dBm @ MCS4 -74 dBm @ MCS5 -72 dBm @ MCS6 -71 dBm @ MCS7 -85 dBm @ MCS8 -83 dBm @ MCS9 -81 dBm @ MCS10 -78 dBm @ MCS11 -75 dBm @ MCS12 -71 dBm @ MCS13 -69 dBm @ MCS14 -68 dBm @ MCS15	<b>802.11n (HT40)</b> -83 dBm @ MCS0 -83 dBm @ MCS1 -81 dBm @ MCS2 -78 dBm @ MCS3 -75 dBm @ MCS4 -70 dBm @ MCS5 -69 dBm @ MCS6 -68 dBm @ MCS7 -83 dBm @ MCS8 -80 dBm @ MCS9 -78 dBm @ MCS10 -74 dBm @ MCS11 -71 dBm @ MCS12 -67 dBm @ MCS13 -65 dBm @ MCS14 -64 dBm @ MCS15	<b>5-GHz</b> <b>802.11n (HT20)</b> -89 dBm @ MCS0 -89 dBm @ MCS1 -88 dBm @ MCS2 -85 dBm @ MCS3 -82 dBm @ MCS4 -77 dBm @ MCS5 -75 dBm @ MCS6 -74 dBm @ MCS7 -88 dBm @ MCS8 -87 dBm @ MCS9 -84 dBm @ MCS10 -81 dBm @ MCS11 -78 dBm @ MCS12 -73 dBm @ MCS13 -72 dBm @ MCS14 -70 dBm @ MCS15	<b>5-GHz</b> <b>802.11n (HT40)</b> -76 dBm @ MCS0 -76 dBm @ MCS1 -76 dBm @ MCS2 -76 dBm @ MCS3 -76 dBm @ MCS4 -73 dBm @ MCS5 -71 dBm @ MCS6 -70 dBm @ MCS7 -74 dBm @ MCS8 -74 dBm @ MCS9 -74 dBm @ MCS10 -74 dBm @ MCS11 -74 dBm @ MCS12 -69 dBm @ MCS13 -67 dBm @ MCS14 -66 dBm @ MCS15
<b>Maximum Transmit Power</b>	<b>2.4GHz</b> <ul style="list-style-type: none"> <li>802.11b <ul style="list-style-type: none"> <li>20 dBm with one antenna</li> </ul> </li> <li>802.11g <ul style="list-style-type: none"> <li>20 dBm with two antenna</li> </ul> </li> <li>802.11n (HT20) <ul style="list-style-type: none"> <li>20 dBm with two antennas</li> </ul> </li> </ul>		<b>5GHz</b> <ul style="list-style-type: none"> <li>802.11a <ul style="list-style-type: none"> <li>20 dBm with two antennas</li> </ul> </li> <li>802.11n non-HT duplicate mode <ul style="list-style-type: none"> <li>20 dBm with two antennas</li> </ul> </li> <li>802.11n (HT20) <ul style="list-style-type: none"> <li>20 dBm with two antennas</li> </ul> </li> <li>802.11n (HT40) <ul style="list-style-type: none"> <li>20 dBm with two antennas</li> </ul> </li> </ul>	
<b>Note:</b> The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.				
<b>Available Transmit Power Settings</b>	<b>2.4GHz</b> 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)		<b>5GHz</b> 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)	
<b>Note:</b> The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for				

Item	Specification
specific details.	
<b>Integrated Antenna</b>	<ul style="list-style-type: none"> <li>• 2.4 GHz, gain 4.0 dBi, horizontal beamwidth 360°</li> <li>• 5 GHz, gain 3.0 dBi, horizontal beamwidth 360°</li> </ul>
<b>Interfaces</b>	<ul style="list-style-type: none"> <li>• 10/100/1000BASE-T autosensing (RJ-45)</li> <li>• Management console port (RJ-45)</li> </ul>
<b>Indicators</b>	<ul style="list-style-type: none"> <li>• Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors</li> </ul>
<b>Dimensions (W x L x H)</b>	<ul style="list-style-type: none"> <li>• Access point (without mounting bracket): 8.7 x 8.7 x 1.84 in. (22.1 x 22.1 x 4.7 cm)</li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>• 2.3 lbs (1.04 kg)</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Nonoperating (storage) temperature: -22 to 185°F (-30 to 85°C)</li> <li>• Operating temperature: 32 to 104°F (0 to 40°C)</li> <li>• Operating humidity: 10 to 90% percent (noncondensing)</li> </ul>
<b>System Memory</b>	<ul style="list-style-type: none"> <li>• 128 MB DRAM</li> <li>• 32 MB flash</li> </ul>
<b>Input Power Requirements</b>	<ul style="list-style-type: none"> <li>• AP1040: 44 to 57 VDC</li> <li>• Power Supply and Power Injector: 100 to 240 VAC; 50 to 60 Hz</li> </ul>
<b>Powering Options</b>	<ul style="list-style-type: none"> <li>• 802.3af Ethernet Switch</li> <li>• Cisco AP1040 Power Injectors (AIR-PWRINJ4=)</li> <li>• Cisco AP1040 Local Power Supply (AIR-PWR-B=)</li> </ul>
<b>Power Draw</b>	<ul style="list-style-type: none"> <li>• AP1040: 12.95 W</li> </ul> <p><b>Note:</b> When deployed using PoE, the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the interconnecting cable. This additional power may be as high as 2.45W, bringing the total system power draw (access point + cabling) to 15.4W.</p>
<b>Warranty</b>	Limited Lifetime Hardware Warranty
<b>Compliance</b>	<p><b>Standards</b></p> <ul style="list-style-type: none"> <li>• <b>Safety:</b> <ul style="list-style-type: none"> <li>◦ UL 60950-1</li> <li>◦ CAN/CSA-C22.2 No. 60950-1</li> <li>◦ UL 2043</li> <li>◦ IEC 60950-1</li> <li>◦ EN 60950-1</li> </ul> </li> <li>• <b>Radio approvals:</b> <ul style="list-style-type: none"> <li>◦ FCC Part 15.247, 15.407</li> <li>◦ RSS-210 (Canada)</li> <li>◦ EN 300.328, EN 301.893 (Europe)</li> <li>◦ ARIB-STD 33 (Japan)</li> <li>◦ ARIB-STD 66 (Japan)</li> <li>◦ ARIB-STD T71 (Japan)</li> <li>◦ AS/NZS 4268.2003 (Australia and New Zealand)</li> <li>◦ EMI and susceptibility (Class B)</li> <li>◦ FCC Part 15.107 and 15.109</li> <li>◦ ICES-003 (Canada)</li> <li>◦ VCCI (Japan)</li> <li>◦ EN 301.489-1 and -17 (Europe)</li> <li>◦ EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC</li> </ul> </li> <li>• <b>IEEE Standard:</b> <ul style="list-style-type: none"> <li>◦ IEEE 802.11a/b/g, IEEE 802.11n, IEEE 802.11h, IEEE 802.11d</li> </ul> </li> <li>• <b>Security:</b> <ul style="list-style-type: none"> <li>◦ 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA</li> <li>◦ 802.1X</li> <li>◦ Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP)</li> </ul> </li> <li>• <b>EAP Type(s):</b> <ul style="list-style-type: none"> <li>◦ Extensible Authentication Protocol-Transport Layer Security (EAP-TLS)</li> </ul> </li> </ul>

Item	Specification
	<ul style="list-style-type: none"> <li>◦ EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2)</li> <li>◦ Protected EAP (PEAP) v0 or EAP-MSCHAPv2</li> <li>◦ Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST)</li> <li>◦ PEAPv1 or EAP-Generic Token Card (GTC)</li> <li>◦ EAP-Subscriber Identity Module (SIM)</li> <li>• <b>Multimedia:</b> <ul style="list-style-type: none"> <li>◦ Wi-Fi Multimedia (WMM™)</li> </ul> </li> <li>• <b>Other:</b> <ul style="list-style-type: none"> <li>◦ FCC Bulletin OET-65C</li> <li>◦ RSS-102</li> </ul> </li> </ul>

## Service and Support

Realize the full business value of your Cisco® Unified Wireless Network more quickly with intelligent, personalized services from Cisco and our partners. Cisco Services offer proven wireless architectures aligned to your business goals and tightly integrated with media-rich, real-time mobility applications. With our breadth and depth of expertise, we support your success every step of the way as you deploy, manage, and scale integrated wireless solutions for optimized performance, security, and management. Sharing knowledge and leading practices, we can help you create a secure, mobile, and interactive business environment to provide a foundation for innovation, agility, and differentiation.

Cisco recommends the following services for the Cisco Aironet 1040 Series Access Points implementation:

### Cisco Wireless LAN 802.11n Readiness Assessment Service

Prevent common challenges and reduce deployment costs by determining the readiness of your wired and wireless infrastructure.

### Cisco Wireless LAN 802.11n Migration Service

Simplify the migration to high-performance, next-generation 802.11n.

### Cisco Wireless LAN Optimization Service

Evolve your 802.11n network to meet ever-changing network demands through planning and assessments, design, performance tuning, and ongoing support for system changes.

For more information about Cisco 802.11n planning and deployment services, visit:

<http://www.cisco.com/go/wirelesslanservices>.

## For More Information

For more information about the Cisco Aironet 1040 Series, visit: <http://www.cisco.com/go/wireless> or contact your local account representative.




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