AIR-CT8540-K9

3RU AireOS controller supporting up to 6,000 APs / 64,000 clients / 40 Gbps. End-of-Life; migrate to Catalyst 9800-80.

Cisco Aironet 8540 Wireless Controller (EOL)

The Cisco Aironet 8540 Wireless Controller was the flagship AireOS controller, supporting up to 6,000 access points and 64,000 clients with 40 Gbps of aggregate throughput. It provided 8x 10/25G SFP+ plus 8x 40/100G QSFP ports and ran Cisco AireOS. Cisco announced End-of-Life for the 8540 (dates per the official EOL bulletin), with the recommended migration path to the Catalyst 9800-80 controller on IOS XE, which matches or exceeds the 8540's scale with the modern IOS XE feature set, model-driven programmability and Catalyst Center automation.

Specification	Value
Lifecycle	End-of-Life (EOL) - see Cisco EOL bulletin
Migration target	Catalyst 9800-80 (IOS XE)
Form factor	3RU hardware controller (AireOS)
AP support	Up to 6,000 access points
Client support	Up to 64,000 wireless clients
Throughput	40 Gbps
Network ports	8x 10/25G SFP+ + 8x 40/100G QSFP
Power supply	Dual redundant AC PSU
Software	Cisco AireOS (legacy wlan model)

- 6,000 AP / 64,000 client / 40 Gbps flagship AireOS controller.
- Recommended successor is the Catalyst 9800-80 on IOS XE.
- AireOS legacy software - plan migration to Catalyst 9800.
- Buyers should confirm spare / support availability given EOL status.

Metric	AIR-CT8540-K9
AP support	Up to 6,000
Client support	Up to 64,000
Throughput	40 Gbps
Network ports	8x 10/25G SFP+ + 8x 40/100G QSFP
Power (typical)	538 W
Heat dissipation	1,836 BTU/hr

Metric	AIR-CT8540-K9
Software	Cisco AireOS
Migration	Catalyst 9800-80 recommended

Action	Detail
Plan	Audit current AP estate / licenses on the 8540
Migrate	Move to Catalyst 9800-80 controller
Tools	Cisco migration tooling / co-existence options
Licensing	Re-license APs on Catalyst 9800 (per-AP DNA)
Decommission	Follow Cisco EOL / RMA procedure after migration

Cisco wireless platforms support the following capabilities as part of the Cisco wireless software release that runs on the platform.

Capability	Support
IEEE standards	802.11a/b/g/n/ac/ax (Wi-Fi 6/6E); 802.11d/e/h/i/k/r/u/v/w
MIMO / spatial streams	2x2:2, 4x4:4, 8x8:8 depending on platform (MU-MIMO and OFDMA)
Band steering	Automatic band steering and load balancing (RRM / DCA)
WPA3 security	WPA3-Personal / Enterprise, Enhanced Open, SAE / OWE transition mode
Fast roaming	802.11r (FT), 802.11k (RRM), 802.11v (BSS Transition)
Application visibility	Cisco AVC, NBAR2-based deep packet inspection
Telemetry	Model-driven telemetry; gNMI, gRPC; streaming telemetry to DNA Center
CleanAir / RF	Cisco CleanAir spectrum analysis (RF interference detection)
Mesh / FlexConnect	Wireless mesh and FlexConnect branch deployments (controller mode)
Guest services	Cisco Identity Services Engine (ISE) integration; web authentication
Location services	CMX / Cisco Spaces / DNA Spaces location services integration
IoT radio	BLE 5.x radio and Zigbee (platform-dependent) for IoT services

Cisco wireless platforms include Radio Resource Management (RRM), application visibility, and streaming telemetry for efficient large-scale Wi-Fi operations.

Capability	Description
Radio Resource Management (RRM)	Cisco RRM with DCA, TPC, CHDM for automatic RF optimization
BandSelect	Automatic band steering of dual-band clients to 5 GHz
Optimized Roaming	RADIUS-assisted client roaming decisions

Capability	Description
Application Visibility and Control (AVC)	NBAR2-based application recognition and QoS marking
Bonjour services	Cisco Bonjour gateway / services directory integration
Streaming telemetry	gNMI / gRPC streaming telemetry to DNA Center / Cisco Spaces
Wi-Fi 6E awareness	6 GHz spectrum support with AFC (Automated Frequency Coordination)
Guest portals	Centralized guest web authentication via DNA Center / ISE
Location services	Cisco Spaces / CMX location services, asset tracking
Spectrum analysis	Cisco CleanAir / RF analysis for interference mitigation
Energy efficiency	Wi-Fi 6 / 6E Target Wake Time (TWT) and 802.3az Energy Efficient Ethernet
Mesh / FlexConnect	Cisco wireless mesh and branch FlexConnect deployments

Catalyst 916x access points and the Catalyst 9800 controllers that manage them fully support IEEE 802.11ax (Wi-Fi 6 / Wi-Fi 6E). The technology features below are delivered by 802.11ax radios.

802.11ax Feature	Description
OFDMA	Orthogonal Frequency-Division Multiple Access for efficient multi-client uplink / downlink
MU-MIMO	Multi-user MIMO up to 4x4:4 on supported radios for concurrent client streams
1024-QAM	Higher modulation for up to ~40% more throughput than Wi-Fi 5
6 GHz (6E)	Dedicated 6 GHz band with new 6E channels, less interference (where enabled)
TWT	Target Wake Time for client power saving and IoT battery life
BSS Coloring	Improved spatial reuse in dense deployments
Enhanced Open (OWE)	Opportunistic Wireless Encryption for open networks
WPA3	WPA3-Personal / Enterprise with GCMP-256 and SAE
OFDMA uplink	Coordinated uplink scheduling for lower latency
Spatial reuse	Adaptive power control for high-density venues
CleanAir	Spectrum analysis on the radio (RF interference detection)
Backhaul	mGig uplink (2.5G / 5G) to avoid radio-to-wire bottleneck

Robust RF management and client security are core to enterprise Wi-Fi. The platform (controller + AP) delivers the following RF and security capabilities.

Capability	Description
RRM (Radio Resource Management)	Automatic channel (DCA) and power (TPC) optimization

Capability	Description
BandSelect	Steering dual-band clients to the less congested 5 GHz band
CleanAir	Proactive spectrum analysis and interference mitigation
WPA3 / Enhanced Open	Modern encryption and secure open networks
802.1X / AAA	Enterprise authentication with RADIUS / ISE integration
Fast roaming	802.11r FT, 802.11k neighbor reports, 802.11v BSS transition
Client analytics	Client 360, RF health and history analytics
Guest access	Centralized web-auth guest portals
FlexConnect	Branch AP mode with local switching / survivability
Mesh	Wireless mesh backhaul for extended coverage
mDNS / Bonjour	Service discovery across subnets (Bonjour gateway)
IoT	BLE / Zigbee radio support on select APs for IoT services

Catalyst 9800 controllers provide a centralized wireless control plane built on Cisco IOS XE. The platform-level capabilities below are common to the 9800 family.

Platform Feature	Description
Software foundation	Cisco IOS XE (shared with Catalyst switching)
AP management	CAPWAP local / FlexConnect modes for Catalyst APs
WLAN policies	Per-WLAN security, QoS, and access policies
RF management	RRM / DCA / TPC / CleanAir on the managed radios
Client services	Client 360 analytics, history and health
Programmability	NETCONF/YANG, RESTCONF, gNMI/gRPC streaming telemetry
Automation	Catalyst Center (DNA) intent-based workflows
Location	Cisco Spaces / DNA Spaces location and analytics
Observability	Model-driven telemetry, streaming to collectors
Security	WPA3, ISE integration, AVC, policy-based access
Mobility	Mobility groups, guest anchoring, N+1/N+N
AP scale	Tiered per model (9800-L / 9800-40 / 9800-80 / 9800-CL)

Catalyst 9800 controllers and the APs they manage can be deployed in several architectures for resilience and flexible branch operations.

Architecture	Description
N+1 / N+N redundancy	Standby controllers take over APs on primary failure
SSO (Stateful Switchover)	Active / standby pair with synchronized state (hardware models)

Architecture	Description
Mobility groups	Controllers in a mobility group share client roaming / guest state
Guest anchoring	Guest traffic anchored to a designated controller / DMZ
FlexConnect	Branch APs keep serving locally if WAN / controller link fails
Mesh	AP mesh backhaul extends wireless reach to hard-to-wire areas
Clustering	Controller clustering for scale-out (per-software version support)
Split-tunnel / local switching	FlexConnect local switching to keep branch traffic local
Central / local auth	Central AAA or local EAP for WLAN authentication
Software upgrades	Rolling AP upgrades with minimal client impact (N+1 image management)

Accessories, mounting kits and deployment accessories for AIR-CT8540-K9 are available from Cisco and authorized partners.

Accessory	Description
Mounting bracket	Standard AIR-AP-BRACKET or vendor-specific mounting kit
Power adapter	Cisco MA-PWR-30W or MA-PWR-50WAC (for APs that require DC power)
PoE source	IEEE 802.3at / 802.3bt Power-over-Ethernet midspan or switch uplink
Console / management	RJ-45 console cable for controller local CLI access
External antenna	External antenna for -E / -I external-AP models (where applicable)
Spare PSU (controllers)	Hot-swappable AC / DC PSU for hardware controllers (where applicable)
Stacking / clustering	Controller clustering / SSO for hardware platforms (where supported)
Software license	Cisco DNA / Network Essentials or Advantage tier
Smart Net Total Care	Optional service contract for hardware replacement

The platform complies with the following interoperability, safety and environmental standards. Compliance is verified by independent testing laboratories.

Category	Standard
IEEE 802.11 standards	802.11a/b/g/n/ac/ax; 802.11d/e/h/i/k/r/u/v/w; WMM, WMM-PS
WPA3 / security	WPA3-Personal/Enterprise, SAE, OWE, GCMP-256; 802.1x with RADIUS / TACACS+
Networking	RFC 1812 IPv4, RFC 4291 IPv6, RFC 4861 ND; CAPWAP (RFC 5415/5416)
QoS	802.1p, DSCP (RFC 2474), WMM (Wi-Fi Multimedia)
Management	SNMPv2c/v3, NETCONF/YANG, RESTCONF, gNMI/gRPC telemetry, HTTPS WebUI
Time sync	NTPv4 (RFC 5905); AP time sync via CAPWAP / 1588v2
Safety	UL/CSA/IEC/EN 62368-1, UL/IEC/EN 60950-1, AS/NZS 60950.1

Category	Standard
EMC / EMI	FCC 47 CFR Part 15 Class B (residential APs) or Class A (enterprise APs), EN 55032/CISPR 32, EN 55024/55035, EN 300 386
Environmental	RoHS 2011/65/EU, WEEE 2012/19/EU; operating/storage altitude per datasheet
RF regulatory	FCC Part 15 Subpart C / E / Y (US), EN 301 893 / EN 300 328 (EU), TELEC (Japan), RSS-Gen (Canada)

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