FortiAP High Density Series

FortiAP High Density Series

Fortinet's acquisition of Everest Networks, a pioneer in high-density wireless solutions, brings unmatched scalability and performance to Fortinet's secure networking portfolio. Originally designed to deliver carrier-grade Wi-Fi in stadiums, arenas, and other highly congested environments, Everest's patented technology now powers Fortinet's next-generation access points—delivering ultra-high user capacity, low-latency throughput, and seamless integration with Fortinet's security fabric.

Built for performance-critical deployments, Fortinet's high-density wireless solutions combine custom RF designs, advanced antenna arrays, and real-time analytics, ensuring exceptional user experience even in the most challenging RF conditions.

Highlights

- Overhead Hyper Directional Access Points
- Multi Radio High Density Wireless Solution
- Software Defined Reconfigurable Coverage
- Web-based intuitive "Single pane of glass" management interface

Hardware Offerings		Indoor Use	Outdoor Use
802.11be Wi-Fi 7			
FAP-HD-444KW	Wireless Outdoor High Density Wide Reconfig AP - Four radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual-band 5/6 GHz config modes supported)	—	✓
FAP-HD-444KN	Wireless Outdoor High Density Narrow Reconfig AP - Four radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual-band 5/6 GHz config modes supported)	—	✓
FAP-HD-224KR	Wireless Outdoor High Density Ultra Narrow Fixed Right Beam AP - Two radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual 5 GHz)	—	✓
FAP-HD-224KL	Wireless Outdoor High Density Ultra Narrow Fixed Left Beam AP - Two radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual 5 GHz)	—	✓
802.11ax Wi-Fi 6E			
FAP-HD-431G	Wireless Indoor High Density AP - Three radio 4×4 streams (Wi-Fi 6E IEEE 802.11ax Tri-band 2.4/5/6 GHz)	✓	—

AP	Radios	Band Support	Software Reconfig	Type	Streams/ Radio	Total Streams
FAP-HD-431G	3	2.4/5/6 GHz	—	Indoor	4×4	12
FAP-HD-444KW	4	5/6 GHz	✓	Outdoor/Wide	4×4	16
FAP-HD-444KN	4	5/6 GHz	✓	Outdoor/Narrow	4×4	16
FAP-HD-224KR	2	5 GHz	—	Outdoor/Ultra Narrow Right	2×2	4
FAP-HD-224KL	2	5 GHz	—	Outdoor/Ultra Narrow Left	2×2	4

FortiAP-HD-431G

Highlights

- Concurrent tri-radio 802.11ax 4×4 :4 with PHY rate up to 8.407 Gbps
- MIMO and MU-MIMO support
- Up to 200 associated devices per AP
- 5 Gbps backhaul: 2x 10/100/1000/2500/5000 Ethernet ports
- Internal high-performance antennas
- Enhanced multiple security features
- Ceiling and wall mount

Ultra High Density

Fortinet provides the industry's leading Wi-Fi solutions addressing today's most pressing ultra-high density (UHD) challenges, such as high user engagement high network capacity, fast throughput, and low total cost of ownership (TCO). Our solutions leverage the Fortinet Wi-Fi platform, designed and built specifically for UHD venues such as stadiums, arenas, convention centers, shopping malls, transport hubs, auditoriums, campuses, and smart cities.

An Industry Leader

A complementary component of the Fortinet platform is the FortiAP-HD-431G, an indoor-rated, medium-capacity access point (AP), primarily employed for enterprise-grade low- to medium-density environments such as small offices, retail outlets, office branches, hospitality, classrooms and non- public service areas.

Concurrent Triple-Radio For Up To 8.4 Gbps

The FortiAP-HD-431G leverages the combined power of three 802.11ax radios operating in 4×4:4 MU-MIMO mode over all available Wi-Fi frequency bands 2.4 GHz, 5 GHz, and 6 GHz. The FortiAP-HD-431G enables concurrent triple-radio operation without impacting the radio performance for an aggregate PHY throughput of 8.407 Gbps.

The FortiAP-HD-431G also provides additional capabilities such as advanced radio resource management, active multi-radio client load balancing, and assisted roaming, which are fully supported and managed by the Fortinet WLAN controller. Through a simple and clear user interface, the FortiAP-HD-431G can be easily and quickly configured, managed, and monitored, through the Fortinet WLAN controller with minimal user interaction, providing operational efficiency and system scalability (up to 1000 APs) without compromise.

Integrated Enterprise Security

The FortiAP-HD-431G features integrated, easy-to-configure security technologies providing secure connectivity for employees and guests. Employing the latest 802.11i advanced security features and encryption, with WPA3 authentication, the FortiAP-HD-431G delivers the level of security required in an enterprise or crowded event environment.

Active Client Roaming And Load Balancing

Our patent-pending load balancing algorithms performs traffic management to optimize client associations, throughput, and roaming. Based on 802.11k and 802.11v protocols, the algorithm dynamically balances users between intra- and inter-AP radios to maximize radio, client, and network performance and capacity.

Specifications

	FortiAP-HD-431G
Performance and Capacity	
Max. Associated Devices	Up to 200
Active Devices	Up to 99+ with up to 1 Mbps per device
Peak PHY Rates	6 GHz: 4804 Mbps (MCS 11, 160 MHz) 5 GHz: 2402 Mbps (MCS 11, 80 MHz) 2.4 GHz: 1201 Mbps (MCS 11, 40 MHz) Total: 8.407 Gbps Backhaul: 5 Gbps (1× 5 Gbps Ethernet ports)
Advanced Radio Technology	
Radios Per AP	Radio 1: 802.11/n/ac/ax 6 GHz Radio 2: 802.11/n/ac/ax 5 GHz Radio 3: 802.11b/g/n/ax 2.4 GHz
MIMO Streams (per radio)	MU-MIMO: multiple spatial streams to be allocated to different clients simultaneously on both download and upload directions
Max Tx Power (varies by country code, band, MCS)	2.4 GHz: 23 dBm 5 GHz: 23 dBm 6 GHz: 23 dBm
Rx Sensitivity	802.11n (MCS0, HT20): -91 dBm 802.11ac (MCS8, VHT20): -88 dBm 802.11ax (MCS0, HE20): -90 dBm
Features	TPC, DFS, TxBF, SGI MRC, MLD, CDD, STBC, LDPC
Antenna Characteristics	
Max Physical Antenna Gain	2.4 GHz: 5 dBi 5 GHz: 6 dBi 6 GHz: 5 dBi
Wi-Fi Specifications	
Supported standards	802.11a/b/g/n/ac/ax
Supported Modulation Type Rates	802.11b: BPSK, QPSK, CCK 802.11a/g/n: BPSK, QPSK, 16/64-QAM 802.11ac: BPSK, QPSK, 16/64/256-QAM 802.11ax: BPSK, QPSK, 16/64/256/1024-QAM
Channelization	20/40/80/160 MHz Radio 2.4 GHz : 2400-2495 MHz Radio 5 GHz: 5150-5250 MHz, 5725-5850 MHz Radio 6 GHz: 5925-6425 MHz, 6425-6525 MHz, 6525-6875 MHz, 6875-7125 MHz
Security	Wi-Fi Protected Access (WPA), 802.11i (WPA2), WPA3, TLS, IEEE 802.1X
Encryption	AES. CBC, CCM, CCMP128,256

	FortiAP-HD-431G
Power	
Max Input Power	25 W
Max PoE Power Consumption	< 23 W
DC Power Consumption	20.4W @ 12V (external power adapter)
Input PoE Power Requirement	42.5-56 Vdc, 600 mA, 25.5 W
Max PoE Power Consumption	25.5 Watts Max (1.45 BTU/Minute)
DC Power Requirements	12 Vdc, 2500 mA, 30 W
Max DC Power Consumption	25.5 Watts Max (2.05 BTU/Minute)
Physical Interfaces	
Ethernet	1× 10/100/1000/2500/5000 Mbps GbE
Power	PoE 802.3at (Type I), DC Jack (12Vdc)
Reset Button	✓
Diagnostic LEDs	Power, radios, LAN
Physical Characteristics	
Dimensions (LxWxH)	205 × 205 × 33 mm (8.07 × 8.07 × 1.33 in)
Weight	0.63 kg (1.5 lbs)
Environmental	
Operating Temperature	0˚C to 40°C (32°F to 122°F)
Storage Temperature	-10°C to 70°C (14°F to 158°F)
Operating Humidity	10% to 95% non-condensing
Wireless and Traffic Management	
	802.11e QoS, 802.11k RRM 802.11r Fast BSS transition (FT) 802.11v Wireless Network Management 802.11ae Prioritization of Management Frames
Wireless and Traffic Features	Airtime fairness, client load balancing, Dynamic radio management (per client, radio, AP)
Regulatory and Safety	
Radio	FCC Subpart B, Subpart C Part 15.247, Subpart E 15.407 CE EN300.328, EN301.893, EN 50385, EN 55032, EN 55024

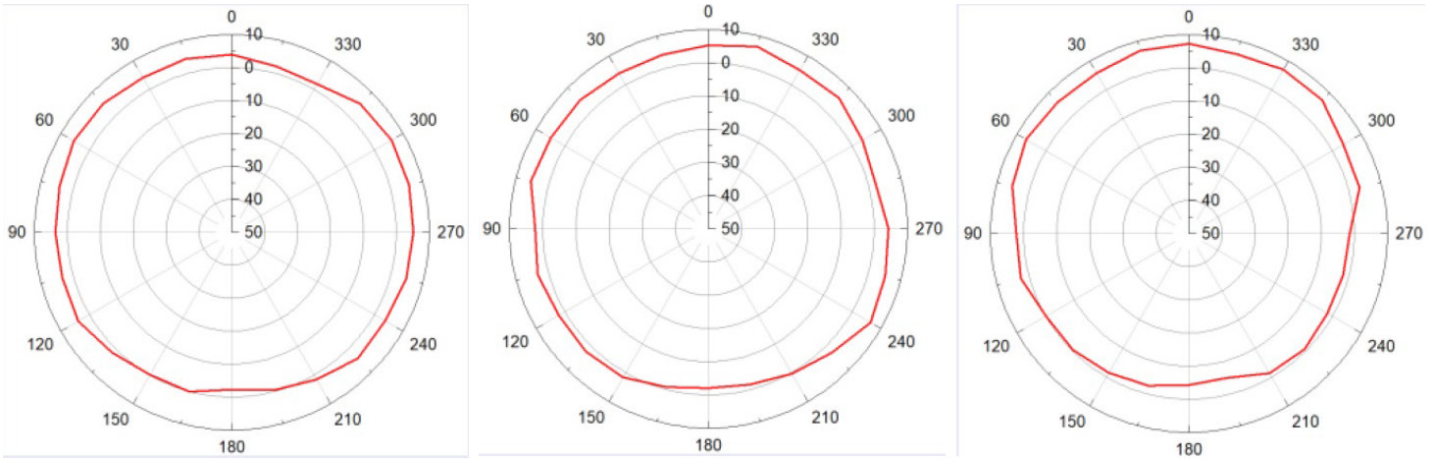
* Frequency selection, transmit power, and certain communication features may be limited to comply with regional regulatory requirements. Operation in the 6 GHz band is subject to country-specific regulations and restrictions.

Antenna Radiation Patterns

FAP-HD-431G

The following provides information on deployment options for optimal coverage from the FAP-HD-431G Wireless Access Point. The design of the FAP-HD-431G Wireless Access Point allows for greater flexibility of mounting options. Regardless of the mounting position, the AP provides a true hemispherical radiation pattern that allows for a greater coverage area with few dead spots. Shown below is a typical view of the elevation (z-plane) coverage pattern for a ceiling mounted FAP-HD-431G.

Horizontal mounting position coverage patterns (2.4 GHz, 5 GHz, 6 GHz)



FortiAP-HD -444Kx and -224Kx Series

Highlights

- Concurrent quad-radio 802.11be 4×4:4
- PHY wireless rate up to 17.3 Gbps
- 16 concurrent MIMO streams
- Up to 2048 associated devices per AP
- Up to 200+ active devices per AP
- 15 Gbps backhaul RJ-45 GbE
- Built-in antennas: wide/narrow/directional beams
- Patented beamforming + shaping technology
- Simultaneous polarization and pattern diversity
- 5/6 GHz 4×4:4 per radio for:

  4×4 MU-MIMO UEs per radio

  4 concurrent SU-MIMO UEs per radio
- Small and compact size for overhead mount
- IP67: outdoor, indoor, and industrial

Ultra High Density

Fortinet provides the industry's leading Wi-Fi solutions addressing today's ultra-high density (UHD) challenges, such as multi-devices per user, high capacity, fast throughput, low latency, and low total cost of ownership (TCO). Our solutions leverage the Fortinet Wi-Fi platform, designed and built specifically for UHD venues such as stadiums, arenas, meeting centers, shopping malls, transport hubs, auditoriums, campuses, and smart cities.

An Industry First… Again

Fortinet's Wi-Fi solutions utilize the high performance Wi-Fi 7 Series APs in the 5/6 GHz band (AFC standard power): 444KW for short-range, 444KN for mid-range, and 224Kx for long range. Designed as a single enclosure for overhead mounting, the Series is built on Fortinet's pioneering, field-proven, and next-generation products exhibiting industry firsts: 1) quad Wi-Fi 7 802.11be radios, 2) patented antenna technology for UHD venues, 3) multi-radio beamforming and shaping, 4) 16 MIMO streams, 5) 15 Gbps backhaul, and 6) small form factor.

Built From The Ground Up

The Series employs the industry's only four Wi-Fi 7 radios configurable in two modes: 1) 3× 5 GHz and 1× 6 GHz or, 2) 2× 5 GHz and 2× 6 GHz. With minimal internal radio interference along with using 2× 6 GHz radios, the Series utilizes all 1.74 GHz of bandwidth in 5/6 GHz bands, providing the highest and most flexible capacity in the industry.

In addition, the Series employs patented multi-antennas exhibiting directional, reconfigurable, beamforming and shaping, optimized multi-beams. This reach enables a variety of venue-adaptable antenna patterns to achieve focused signals to intended users for best coverage while reducing interference to unintended users, two key factors in successful UHD deployments. Furthermore, all multi-antennas provide polarization and pattern diversity for efficient spatial and frequency reuse capabilities.

Finally, the Series takes advantage of key Wi-Fi 7 features such as DL/UL OFDMA, TWT, BSS coloring, Preamble Puncturing (future), and MLO (future). In combination with the above features, the Series attains highest user engagements, best-in-class capacity along with unmatched flexibility, installation simplicity and speed, and low TCO.

The Series also provides advanced radio resource management, active multi-radio client load balancing, and assisted roaming, which are fully supported by Fortinet's WLAN controller. Through its simple and clear user interface, the Series are easily and quickly configured, managed, monitored, and assessed with minimal user interaction, providing operational efficiency and system scalability.

Series models include four SKUs:

FAP-HD-444KW

FAP-HD-444KN

FAP-HD-224KR

FAP-HD-224KL

Specifications

	FortiAP-HD-444Kx-224Kx Series
Performance and Capacity	
Max. Associated Devices	Up to 2048
Active Devices	Up to 200+
Peak PHY Rates	5 GHz: 2.882 Gbps 6 GHz: 5.765 Gbps Total: 14.4 Gbps (mode 1) and 17.3 Gbps (mode 2)
Advanced Radio Technology	
Radios Per AP	5 GHz [mode 1 or mode 2]: 3x and 2x 6 GHz [mode 1 or mode 2]: 1x and 2x
MIMO	4×4 (SU-MIMO or MU-MIMO)
MIMO Streams (per radio)	SU-MIMO: 4 streams for 4×4 5/6 GHz devices Max. 1441 Mbps per stream Max. 5765 Mbps (5/6 GHz at 160 MHz channel) MU-MIMO (5/6 GHz): 4 streams for 4 concurrent devices
Features	OFDMA, TWT, BSS color, AFC, TPC, DFS, TxBF, SGI. Future: MLO, PP, MRC, MLD, CDD, STBC, LDPC
Max Tx Power (varies by country code, band, MCS)	5 GHz: 26 dBm 6 GHz: 26 dBm
Rx Sensitivity	802.11n/ac (MCS0, HT20/VHT20): -93 dBm 802.11ax/be (MCS0, EH20/EHT20): -93 dBm
Antenna Characteristics	
Characteristics	Band-optimized, reconfigurable Internal and integrated Directional and reconfigurable Pattern, polarization, spatial diversity
Patterns (El x Az)	5 GHz: [15˚ 30˚ 45˚] x 30˚ 6 GHz: [20˚ 45˚] x 30˚ 5 GHz scan range: 70˚ 6 GHz range: +/-10˚
Max Physical Antenna Gain	5 GHz: 11.33 dB and 17.0 dB 6 GHz: 13.1 dB
Wi-Fi Specifications	
Supported Standards	IEEE 802.11a/b/g/n/ac/ax/be
Supported Rates	802.11b: 1 - 11 Mbps 802.11a/g: 1 - 54 Mbps 802.11n: 6.5 - 600 Mbps (MCS0-31, 1-4 SS) 802.11ac Wave 2: 6.5 to 1.733 Gbps (MCS0-9, 1-4 SS) 802.11ax HE: VHT20/40/80/160 802.11be EHT: EHT20/40/80/160/320
Supported Channels (based on country code)	5.15-5.25 GHz: 36-48 (FCC: U-NII-1/IC/ETSI) 5.25-5.35 GHz: 52-64 (FCC: U-NII-2A/IC/ETSI) 5.47-5.725 GHz: 100-140 (FCC: U-NII-2C/IC/ETSI) 5.725-5.850 GHz: 149-165 (FCC: U-NII-3/IC) 5.625–6.425 GHz: 1-93 (FCC: U-NII-5) 6.525–6.885 GHz: 117-185 (FCC: U-NII-7)
Channelization	20/40/80/160 MHz

	FortiAP-HD-444Kx-224Kx Series
Security (pending)	Wi-Fi Protected Access (WPA) IEEE 802.11i (WPA2, WPA3, RSN) Transport Layer Security (TLS) Datagram Transport Layer Security IEEE 802.1X Encryption: AES, CBC, CCM CCMP128,256
Power	
Max Input Power (per port)	POE+: 25.5 W @ 42.5 - 56 VDC 4PPoE: 30 W @ 42.5 - 56 VDC 4PPoE: 60 W @ 42.5 - 56 VDC
Max Power Consumption	51 W
Physical Interfaces	
Ethernet	1× 10 Gbps + 1× 5 Gbps Auto-sensing PoE 802.3at (Type I) [802.3af] PoE+ 802.3at (Type II) [802.3at] 4P PoE++ 802.3bt LLDP
Physical Characteristics	
Dimensions (LxWxH)	444 mm x 344 mm x 82 mm 17.5 in x 13.5 in x 3.2 in
Weight	1.6 Kg (3.5 lbs)
Environmental	
Operating Temperature	-40˚C to 55°C (-40°F to 131°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F). Below -20°C: up to 20 min. for min internal operating temp of -20°C
Operating Humidity	5% to 95% non-condensing
Operating Altitude	3000 m
Surge Immunity:	1 kVa
Lightning Protection	-4 kV (with optional ext. primary protection)
Additional Features	Air vent valve for balancing humidity and pressure UV resistant Corrosion: IP67 rated (water, dust, smoke)
Wireless and Traffic Management	
Standards (pending)	802.11e QoS 802.11k RRM 802.11r Fast BSS transition (FT) 802.11v Wireless Network Management 802.11ae Prioritization of Management Frames
Wireless and Traffic Features (pending)	Airtime fairness Client load balancing Dynamic radio management based on client, radio, and AP metrics
Interfaces	WLAN controller: WMS and AC
Certification and Compliance	
Wi-Fi Alliance (pending)	Wi-Fi Certified n, ac, ax, be Wi-Fi Protected Access (WPA2, WPA3) Protected Management Frames Voice-Enterprise WMM® (Wi-Fi Multimedia™)
Regulatory and Safety (pending)	
Emissions (EMI/EMC)	FCC Part 15, Class B ICES-003 issue 6, Class B
Radio	FCC Part 15c, part 15e (US)
Surge	IEC 61000-4-5 Edition 2.0 2014, EN61000-4-5:2014
Safety	UL2043
Reliability	
MTBF	184,874 hours (calculated)
MTTR	30 minutes

* Frequency selection, transmit power, and certain communication features may be limited to comply with regional regulatory requirements. Operation in the 6 GHz band is subject to country-specific regulations and restrictions.

Specifications

FEATURE	FAP-HD-444KW	FAP-HD-444KN	FAP-HD-224KR | FAP-HD-224KL
Wi-Fi Radios	4 Highest for UHD	4 Highest for UHD	2
5/6 GHz Radios	Mode 1: 3/1 Mode 2: 2/2	Mode 1: 3/1 Mode 2: 2/2	2/0
Total number of streams	16 Highest for UHD	16 Highest for UHD	4
Max Channel BW	160 MHz	160 MHz	80 MHz
Max PHY rate	17.3 Gb/s Highest for UHD	17.3 Gb/s Highest for UHD	3 Gb/s
Max associated users	2048 Highest for UHD	2048 Highest for UHD	1024
Max concurrent active users	200+ Highest for UHD	200+ Highest for UHD	100+
Max 5 GHz Antenna Gain	7.15 dBi	11.33 dBi	17 dBi
Max 6 GHz Antenna Gain	5.7 dBi	13.1 dBi	n/a
Antenna Beamwidths (El x Az)	110° x 110°	[15° 30° 45°] x 30°	15° x 17°
Antenna Scan Range	360°	70° Largest for UHD	0° / 15° +/- 7.5°
Polarization	V & H	V & H	V & H
Diversity	Spatial/Angular	Angular/Beam	N/A
Coverage Range	Up to 75 ft	Up to 150 ft	Up to 250 ft
6 GHz AFC Standard Power (GPS + external antenna)	✓	✓	N/A
Max Power Consumption	51 W	51 W	33 W
Dimensions	12×12×3 in 31×31×7.6 cm Smallest UHD AP	18×14×3 in 44×34×8 cm Smallest UHD AP	18×14×3 in 44×34×8 cm
Weight	3.6 kg / 7.9 lbs Lightest UHD AP	4.0 kg / 8.8 lbs Lightest UHD AP	4.0 kg / 8.8 lbs

* Frequency selection, transmit power, and certain communication features may be limited to comply with regional regulatory requirements. Operation in the 6 GHz band is subject to country-specific regulations and restrictions.

Highlights

- Web based intuitive 'Single pane of glass' management interface
- Auto discovery and configuration of FortiAP-HD Wi-Fi access points
- Bulk tools to configure and manage access points and software upgrades
- Customizable dashboard with pre-defined network reports and analytics
- Client performance data and analytics
- Stacked multi-floor providing direct view of AP status and metrics, and direct access to configuration and monitoring
- Customizable alerts and event notification
- Advanced 'Event Analytics' for UHD environments such as stadiums, arenas, and concert halls
- Automatic event report generation with user-selectable time-based graphs such as network users, throughput, and total data
- Advanced features such as client load balancing, fast roaming, and carrier Wi-Fi offload
- RESTful APIs for third party integration
- Compatible with TR-069 and TR-181 standards

FortiAP-HD WLAN Controller

Wireless Management System

Fortinet provides the industry's leading Wi-Fi solutions addressing today's most pressing ultra-high density (UHD) challenges, such as high user engagement, high network capacity, fast throughput, and low total cost of ownership (TCO). Our solutions leverage the FortiAP High Density (FortiAP-HD) Wi-Fi platform, designed and built specifically for UHD venues such as stadiums, arenas, convention centers, shopping malls, transport hubs, auditoriums, campuses, and smart cities.

An Industry First

A foundational component of the Fortinet platform is the FortiAP-HD WLAN controller, a fully-featured controller and wireless management system for WLAN networks. Available as a software-suite, the FortiAP-HD WLAN controller is specifically designed for UHD networks with speed, simplicity, and efficiency in mind. The FortiAP-HD WLAN controller prominent benefits such as quick and ease of network deployment, effortless access point (AP) configuration, efficient network management, effective performance monitoring and tracking, and real-time network visualization, allow it to handle the smallest to the largest networks with 1000 APs and 100 000 users.

Built From The Ground Up

For a speedy network deployment, the FortiAP-HD WLAN controller enables APs to be auto-discovered and configured either automatically, in bulk, or using importable custom configurations, so that even the largest networks are operational in a few minutes.

For an effortless network configuration and management, the FortiAP-HD WLAN controller features a simple browser-based single pane of glass interface, available on multiple platform including mobile devices. The FortiAP-HD WLAN controller also provides an intuitive, clear, and tidy interface while integrating simple and efficient workflows

For an effective network performance monitoring and tracking, the FortiAP-HD WLAN controller provides a visually appealing and customizable dashboard for a real-time view of the network analytics in a pre-configured, chart-based, and time-trending manner. Additionally, the FortiAP-HD WLAN controller provides drill-down statistics from a network-level to the device-level for deep RF and data metrics analysis, and user-defined event-specific data archiving.

For real-time network visualization, the FortiAP-HD WLAN controller includes a dynamic multi-floor maps view showing AP locations and key parameters, real-time network metrics using heat maps, and threshold-based AP color-coding for fault analysis.

Empowered by the FortiAP-HD WLAN controller software architecture for fast, agile, and lag-free operation, the FortiAP-HD WLAN controller provides all the necessary tools and data to manage, monitor, and optimize the network performance via a clean and easy-to-navigate user interface.

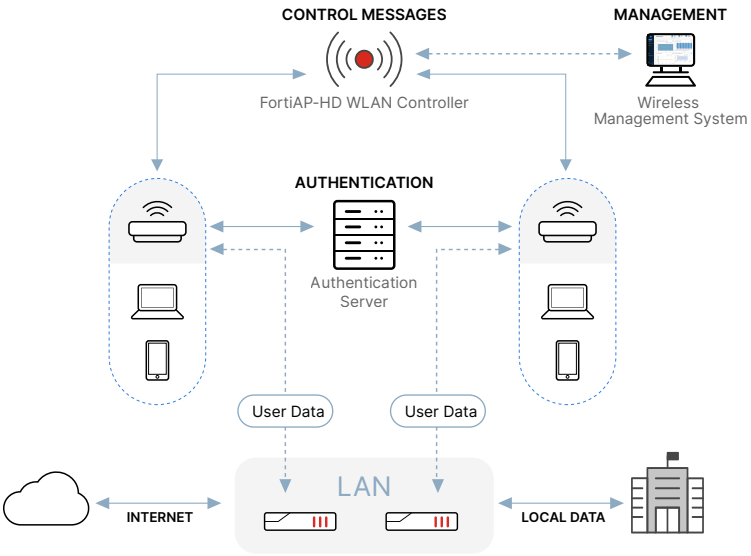
FortiAP-HD WLAN Controller

Simple And Intuitive User Interface

The FortiAP-HD WLAN controller, a browser-based wireless management system available as a software suite, offers a clean, modern, and sleek single pane of glass interface for managing FortiAP-HD-based WLAN systems. In addition, the FortiAP-HD WLAN controller simplifies the deployment and management of APs for both small (1 to 64 APs) and large networks (64 to 100 APs). Furthermore, network administrators can quickly configure all system, network, security and radio parameters, including transmit power, channel assignment, and antenna settings. Configurations for events requiring different network and radio parameters can also be conveniently stored and retrieved or archived for auditing and historical tracking.

System Dashboard

The FortiAP-HD WLAN controller provides a rich, intuitive, and visually appealing dashboard for network administrators to get an overall and comprehensive view of the entire wireless network. The dashboard displays a variety of pre-defined and customizable reports and analytics which can be easily re-arranged on the dashboard based on user preferences. Pre-defined dashboard chart-based and time-trending reports include, for example, AP and client health, concurrent clients and visitors over time, throughputs and data transferred over time.



Split Architecture

The FortiAP-HD WLAN controller integrates seamlessly within the existing network in the venue. Furthermore, a split control plane architecture is employed where all user traffic is switched locally at the access points allowing APs to serve users even in the event of losing connectivity with the FortiAP-HD WLAN controller. Since only management and control traffic are sent to the FortiAP-HD WLAN controller via a secure and encrypted tunnel, the split architecture provides significant scalability, flexibility, and reliability in deployment options.

Scalability

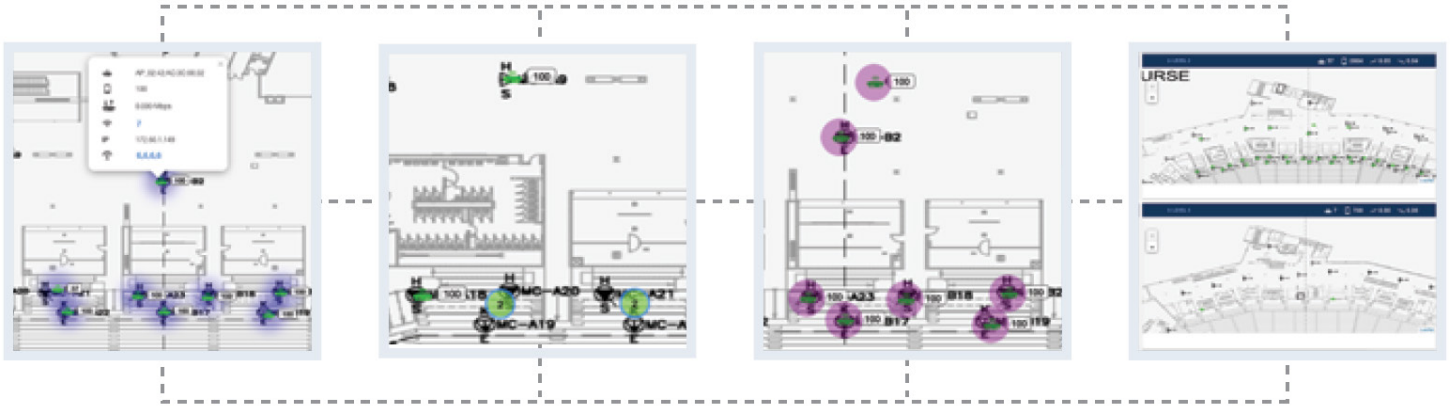
A single FortiAP-HD WLAN controller management system supports up to 1000 access points and 100 000 clients while also supporting up to 256 wireless networks.

Maps

The FortiAP-HD WLAN controller offers an exceptional maps feature providing a visual layer for users to efficiently manage and monitor a large number of APs.

Users can upload custom floor plans and directly import APs onto a map. The maps view provides a quick overview of the operational APs status via a color-coded system allowing users to quickly identify areas of concern.

The FortiAP-HD WLAN controller maps view also provides an intuitive and comprehensive visualization of the most important network performance metrics in real-time, such as client load and AP throughput, either on a per-AP basis for a detailed view or using heat maps for a broader view. In addition, the FortiAP-HD WLAN controller maps feature also simplifies monitoring a large set of APs by clustering nearby APs together with the ability to zoom in and out of each cluster to quickly identify APs that might require attention. When critical action is required, an APs configuration parameters and performance data are seamlessly accessible in a single pane of glass within the maps avoiding multiple navigation transitions and thus saving valuable time. Finally, the maps view provides a timeline and historical visibility into network performance for a powerful and fast behavioral analysis.



Alerts

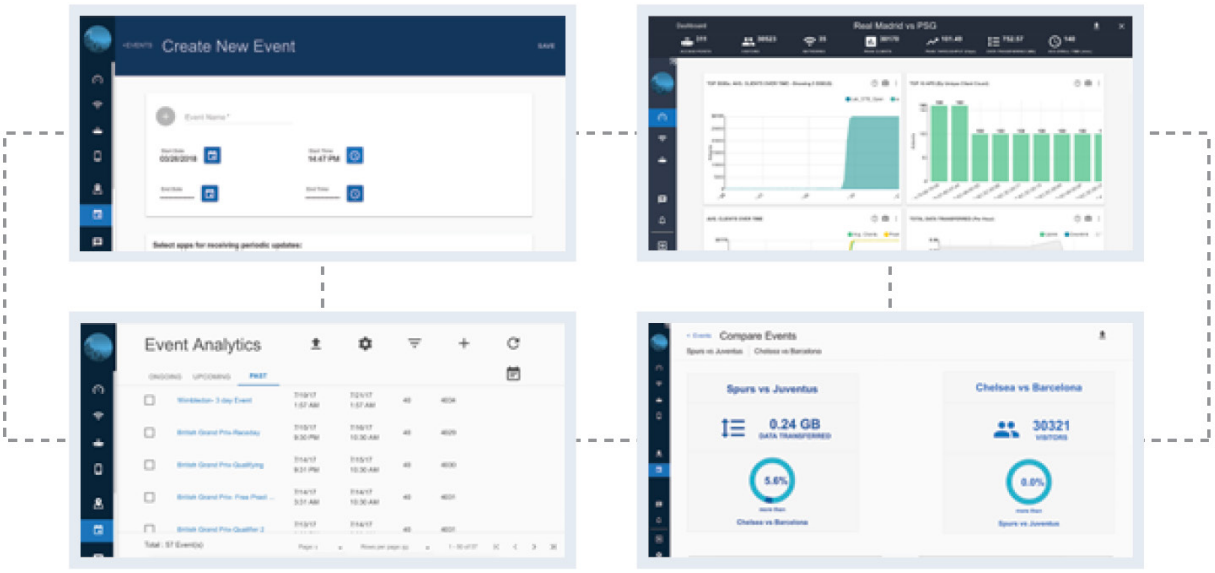
The FortiAP-HD WLAN controller Alerts feature allows users to track alarms and events. The Alert visualization interface allows network managers to historically view the type and frequency of configured alarms and events.

Real-Time Client Monitoring

The FortiAP-HD WLAN controller provides detailed client information in real-time including, device type, association time, signal strength, and throughput. The FortiAP-HD WLAN controller also provides operators the ability to track particular clients and gather their data analytics such as recent AP associations, time stamps, and roaming analysis.

Events Analytics

The FortiAP-HD WLAN controller introduces a novel and powerful Event Analytics feature, built specifically for venues hosting events such as stadiums, convention centers and arenas. Administrators can upload events calendar once, and let The FortiAP-HD WLAN controller track, analyze, report, and store analytics for each event. At the end of each event, a dashboard and detailed reports are instantly available for review, analysis, comparison, and report generation.



Client Load Balancing

The FortiAP-HD WLAN controller integrates, together with the access points, an advanced client load balancing solution to optimize network performance and ensure best quality of experience to each user. The solution features dynamic discovery of neighboring access points to optimize client connectivity and AP load.

Carrier Offload

The FortiAP-HD WLAN controller provides a Carrier Offload feature that allows traffic to be offloaded to the Wi-Fi network from the MNO anchor network. The mobile device in the carrier network automatically detects the presence of carrier-specific SSID, then connects to the Wi-Fi network, and gets authenticated by the carrier authentication infrastructure. Finally, various metering reports are provided for the carrier.

Northbound APIs

The FortiAP-HD WLAN controller provides a well-defined RESTful API set for third party applications to integrate. The APIs provide detailed information on network-wide status, statistics, and analytics, and can be used to build or integrate with powerful third-party reporting and alerting applications. The payloads are encoded in JSON, and APIs offer a compressed payload version as well to optimize network bandwidth consumption when fetching statistics in large deployments.

Specifications

	FortiAP-HD WLAN Controller
Capacity	
Access Points	Up to 1000
Concurrent Devices	Up to 100 000
Wireless Networks	Up to 256
Applications	
Captive Portal	Integrates with well-known third party captive portal providers
Hotspot	802.11u
Voice	802.11e WMM
Carrier Offload (on-boarding)	Supported
User Analytics	Available
Security	
Standards	WPA-2 and WPA-3 802.11i
Encryption	AES
Authentication	802.11X Captive portal
Access Control	Client isolation Client blocklist
Quality of Service	
Traffic Prioritization	Supported (DSCP to wireless queues mapping)
Client Load Balancing	Supported
Wireless Multi-media	Supported
Management	
Configuration	Out-of-the-box web-based UI Tools for bulk configuration of APs
AP Provisioning	Auto-provisioning using staging servers
MAPs	Upload multiple custom floor plans One click AP configuration and monitoring Search and filter by AP name Heat maps for client density, throughput, and radio utilization Timeline
Analytics	Granular data available Daily Persistent event analytics reports
APIs	REST APIs with JSON encoding Compression support for bulk fetches
Alerts	Available
Minimum Server Appliance Requirements	
VM	8 CPU cores
RAM	16 GB
Hard Disk	320 GB

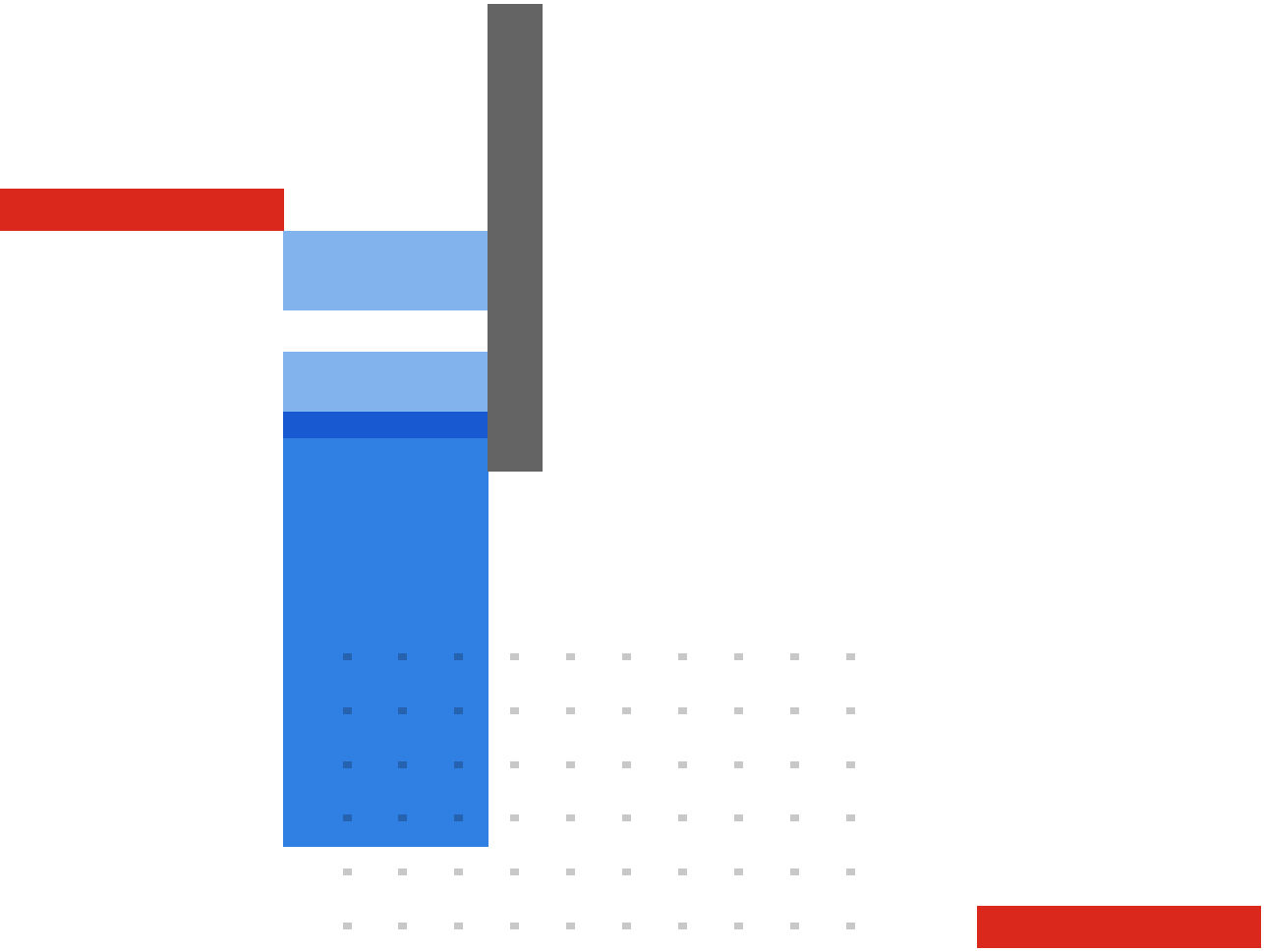
Ordering Information

Product	SKU	Description
FortiAP-HD 431G	FAP-HD-431G	Wireless Indoor High Density AP - Three radio 4×4 streams (Wi-Fi 6E IEEE 802.11ax Tri-band 2.4/5/6 GHz) [Note: 6 GHz band not available in all regulatory domains], internal antennas, 1× 10/100/1000/2500/5000 GbE. 802.3at PoE supported. Use of the 6 GHz band subjects to regional regulatory authority approval.
	FC-10-HD431-247-02-DD	Forticare Premium Support.
FortiAP-HD-444KW	FAP-HD-444KW	Wireless Outdoor High Density Wide Reconfig AP - Four radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual-band 5/6 GHz config modes supported) [Note: 6 GHz band not available in all regulatory domains], internal antennas, 1× 10 Gbps. 1× 5 Gbps. 802.3bt PoE supported. Use of the 6 GHz band subjects to regional regulatory authority approval.
	FC-10-HD4KW-247-02-DD	Forticare Premium Support.
FortiAP-HD-444KN	FAP-HD-444KN	Wireless Outdoor High Density Narrow Reconfig AP - Four radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual-band 5/6 GHz config modes supported) [Note: 6 GHz band not available in all regulatory domains], internal antennas, 1× 10 Gbps. 1× 5 Gbps. 802.3bt PoE supported. Use of the 6 GHz band subjects to regional regulatory authority approval.
	FC-10-HD4KN-247-02-DD	Forticare Premium Support.
FortiAP-HD-224KR	FAP-HD-224KR	Wireless Outdoor High Density Ultra Narrow Fixed Right Beam AP - Two radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual 5 GHz) internal antennas, 1× 10 Gbps. 1× 5 Gbps. 802.3bt PoE supported.
	FC-10-HD2KR-247-02-DD	Forticare Premium Support.
FortiAP-HD-224KL	FAP-HD-224KL	Wireless Outdoor High Density Ultra Narrow Fixed Left Beam AP - Two radio 4×4 streams (Wi-Fi 7 IEEE 802.11be Dual 5 GHz) internal antennas, 1× 10 Gbps. 1× 5 Gbps. 802.3bt PoE supported.
	FC-10-HD2KL-247-02-DD	Forticare Premium Support.
FortiAP-HD WLAN Controller	LIC-WMS-HD-SW	WMS High Density Software Per Site.
	FC-10-HDWMS-248-02-DD	Forticare Premium Support.

Visit https://www.fortinet.com/resources/ordering-guides for related ordering guides.

Fortinet Corporate Social Responsibility Policy

Fortinet is committed to driving progress and sustainability for all through cybersecurity, with respect for human rights and ethical business practices, making possible a digital world you can always trust. You represent and warrant to Fortinet that you will not use Fortinet's products and services to engage in, or support in any way, violations or abuses of human rights, including those involving illegal censorship, surveillance, detention, or excessive use of force. Users of Fortinet products are required to comply with the Fortinet EULA and report any suspected violations of the EULA via the procedures outlined in the Fortinet Whistleblower Policy.



FORTINET

www.fortinet.com

September 16, 2025

FAP-HD-DAT-R03-20250916