ZYXEL

NAP303

802.11ac Dual-Radio Smart Antenna 3x3 Nebula Cloud Managed Access Point

The Zyxel Nebula NAP303 802.11ac Dual-Radio Smart Antenna 3x3 Nebula Cloud Managed Access Point is a high-performance 3x3 802.11ac Wi-Fi AP capable of delivering combined data rates of up to 1.75 Gbps. Featuring Smart Antenna technology, the NAP303 perfectly solves coverage problems by adjusting antenna patterns adaptively to fit different wireless environments. The NAP303's industry-leading RF output power and sensitivity jointly offer greater coverage and better performance to networks. The ultra-fast capabilities makes NAP303 perfect for interference-laden environments, such as conference rooms, airports, educational facilities and other high-density venues.

Every Nebula AP has been engineered for cloud management. Based on the NETCONF standard, all data traffics between the cloud and APs are exchanged using secure transports to ensure transaction-safe configuration on all Nebula devices. Furthermore, with the intuitive management interface, administrators are able to control all the APs quickly even without training.

Benefits

Zero-touch deployments

The Zyxel Nebula APs auto-configure themselves after installation, and then automatically connect to the Nebula cloud to join the network; so auto-configuration, provision, monitoring and diagnostics can be performed anytime, anywhere. This simplifies network setup and enables deployment of Nebula APs to a remotely located network even by non-IT professionals.

- Cloud-managed, dual-radio 3x3 MIMO 802.11ac AP
- Supports combined data rates of up to 1.75 Gbps
- Smart antenna provides breakthrough performance
- Self-configuration and zero-touch deployment
- Enterprise-class security and RF optimization
- Dynamic Channel Selection, Load Balancing and Smart Client Steering
- Industry-leading receive sensitivity at as low as -102 dBm
- Tool-less bracket design simplifies installation

nebula

Smart antenna technology

Featuring more than 700 optimized antenna patterns, the Smart Antenna can continuously calculate the ideal physical-layer path for each individual client. This feature not only offers the best possible signals by shaping to various patterns, but also mitigates interference from other wireless clients. With the advance technology, the Zyxel NAP303 can handle a variety of tough deployments such as high-capacity, high-performance and interference-laden environments.

Best-in-class coverage and performance

Different from other 802.11ac APs, the Zyxel NAP303 stands out with its best-in-class coverage and performance thanks to its unique RF design. The AP's three-stream hardware configuration provides power of up to 30 dBm and unparalleled receive sensitivity of as low as -102 dBm. The Smart Antenna technology doubles the NAP303's performance over conventional internal antennas, and it performs three times (3x) better than legacy 802.11n APs as well.

Optimized wireless experience

The Zyxel Nebula NAP303 delivers optimized wireless experience for users with comprehensive wireless features such as Dynamic Channel Selection (DCS), Load Balancing, and Smart Client Steering, etc. DCS avoids interference from co-channeling and overlapping channels continuously, while Load Balancing and Smart Client Steering which features Band Select and Balance for more spectrum to provide more stable, reliable wireless connections.
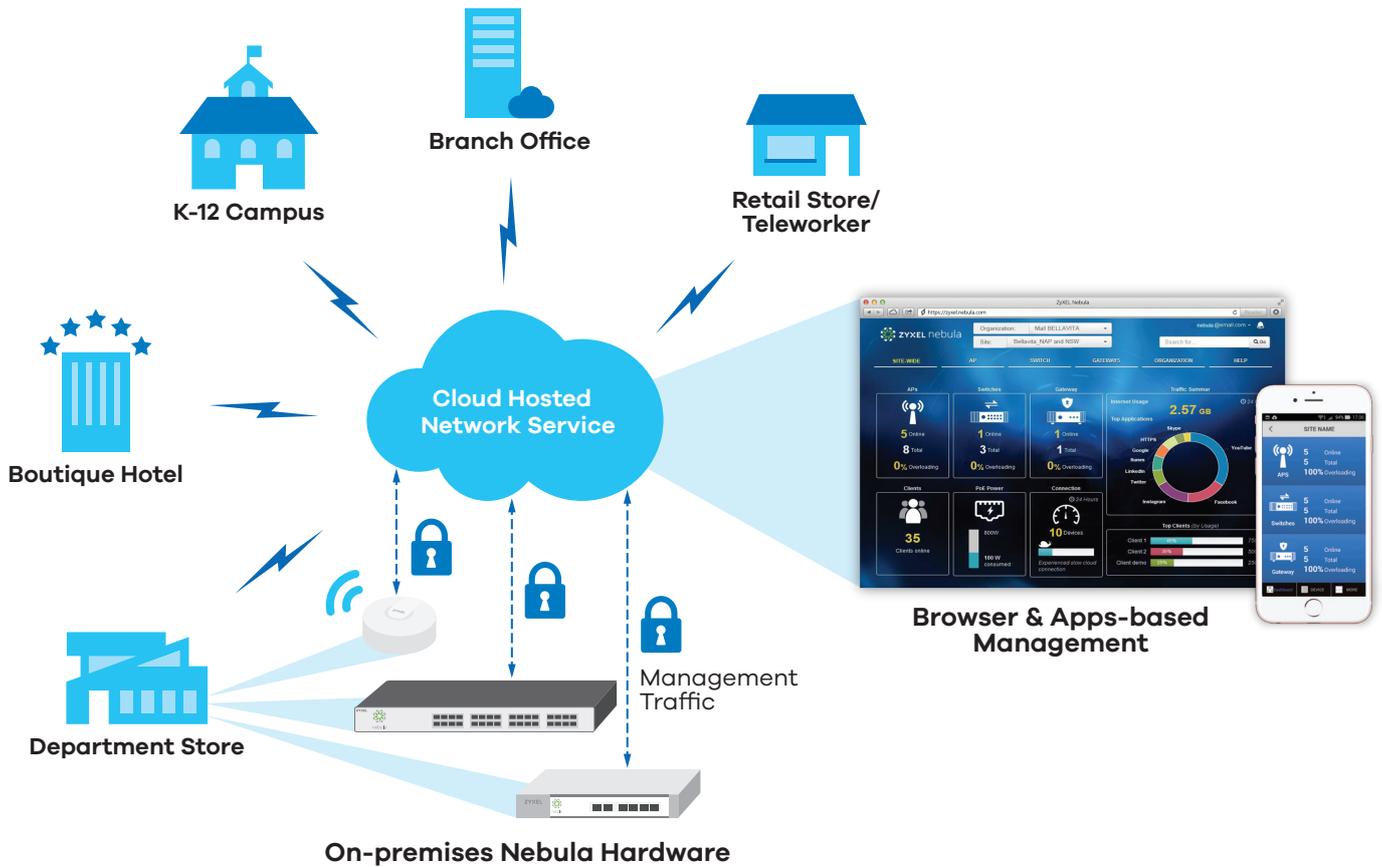
Enterprise-class security

The Zyxel Nebula NAP303 Access Point inherits the NETCONF protocol for secure configuration changes. In terms of authentication and data encryption, it supports WPA2 enterprise protection and a wide range of Extensible Authentication Protocol (EAP) types, including EAP SIM for smartphones. Besides, the NAP303 also features access control and Layer-2 isolation for privacy protection. The comprehensive security features ensure NAP303 to deliver enterprise-grade protection to the entire network.

Monitor AP usage and client report by different time intervals and view historical status record via the intuitive management interface

Applications Diagram

Nebula cloud management architecture

K-12 Campus

Branch Office

Boutique Hotel

Cloud Hosted Network Service

Retail Store/ Teleworker

Browser & Apps-based Management

Department Store

Management Traffic

On-premises Nebula Hardware

Robust Hardware

Robust, reliable hardware
Ordered shielding frames prevent electromagnetic interference, while covers manage heat through thermal pads to mitigate overheating.
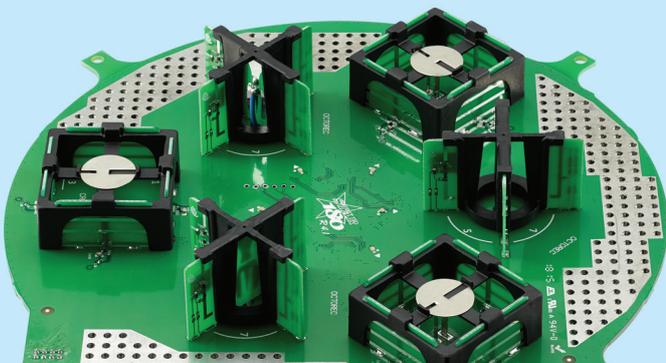
Zyxel Smart Antenna

- Over 700 optimized antenna patterns create the best path for clients at a range of angles.
- NAP303 delivers true ultra-fast wireless performance by eliminating the need for beam-forming through individual wireless client support.

Specifications

Model	NAP303
Product name	802.11ac Dual-Radio Smart Antenna 3x3 Nebula Cloud Managed Access Point

RF Specifications		
Frequency band	2.4 GHz (IEEE 802.11 b/g/n) • USA (FCC): 2.412 to 2.462 GHz • Europe (ETSI): 2.412 to 2.472 GHz • Taiwan (TW): 2.412 to 2.462 GHz	5 GHz (IEEE 802.11 a/n) • USA (FCC): 5.15 to 5.35 GHz; 5.725 to 5.850 GHz • European (ETSI): 5.15 to 5.35 GHz; 5.470 to 5.725 GHz • Taiwan (TW): 5.15 to 5.35 GHz; 5.725 to 5.850 GHz
802.11n/ac premium features	• 3x3 Multiple-Input Multiple-Output (MIMO) with three spatial streams • Maximal Ratio Combining (MRC) • 20-, 40- and 80-MHz channels • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)	• Cyclic Delay Diversity (CSD) support • Maximum Likelihood Demodulation (MLD) support • Low Density Parity Check (LDPC) support

Conducted typical transmit output power (dBm)	FCC 11b/g	29
	FCC 11g/n	29
	FCC 11a	30
	FCC 11n/a (ac)	30
	EU 11b/g	15
	EU 11g/n	15
	EU 11a	23
	EU 11n/a (ac)	23

Antenna system	6 embedded smart antenna
Antenna gain	2.4 GHz, 4 dBi; 5 GHz, 6 dBi
Support data rate	• 802.11a/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps • 802.11n: up to 450 Mbps in MCS23 (40 MHz) • 802.11ac: up to 1300 Mbps in MCS9 (80 MHz)
Receive sensitivity	Min. Rx sensitivity up to to -102 dBm

Interfaces	
Number of 10/100/1000M LAN	2
Console port	RJ-45 serial
PoE	Yes
PoE power draw	17.04 W

WLAN Features	
WLAN maximum throughput	Up to 900 Mbps

Wireless Security	
WEP	Yes
WPA/WPA2-PSK	Yes
WPA/WPA2-Enterprise	Yes
WLAN access control list	Yes
EAP types	EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-FAST, EAP-AKA and EAP-SIM
IEEE 802.1X	Yes
Number of SSID	16

Wireless Security	
MAC filtering	Yes
Layer-2 isolation	Yes
RADIUS authentication	Yes
Captive portal	Yes
Network	
VLANs	Yes
DHCP client	Yes
QoS (PG)	
WMM	Yes
WMM power save	Yes
DiffServ marking	Yes
Management	
Cloud managed	Yes
ZON utility	Support
Smart connect	Neighbor device discovery
Others	
Plenum rating	Yes
Kensington lock support	Yes
Input power	DC input: 12 VDC 2 A; PoE: 802.3at compliant (Power adapter is sold separately)
MTBF (hr)	1,202,489
Standard Compliance	
Ethernet	IEEE 802.3, IEEE 802.3u, IEEE 802.11ab IEEE 802.3au, IEEE 802.3az, IEEE 802.3at
PoE	IEEE 802.3at*
WLAN	• 802.11b: DBPSK, DQPSK, CCK • 802.11g: BPSK, QPSK, 16-QAM, 64-QAM • 802.11a: BPSK, QPSK, 16-QAM, 64-QAM • 802.11n: BPSK, QPSK, 16-QAM, 64-QAM • 802.11ac: BPSK, QPSK, 64-QAM, 256-QAM
Certifications	
Radio	FCC Part 15C, FCC Part 15E, ETSI EN 300 328, EN 301 893, LP0002
EMC	FCC Part 15B, EN 301 489-1, EN 301 489-17, EN55022, EN55024, EN61000-3-2/-3, EN60601-1-2, BSMI CNS13438
Safety	EN 60950-1, IEC 60950-1, BSMI CNS14336-1

Physical Specifications		
Item	Dimensions (WxDxH)(mm/in.)	236 x 227 x 62/9.28 x 8.95 x 2.43
	Weight (g/lb.)	982/2.17
Packing	Dimensions (WxDxH)(mm/in.)	308 x 323 x 127/12.13 x 12.72 x 5.00
	Weight (g/lb.)	1,743/3.85
Included accessories		Ceiling mount plate; Mounting screws
Environmental Specifications		
Operating	Temperature	0°C to 50°C/32°F to 122°F
	Humidity	10% to 90% (non-condensing)
Storage	Temperature	-40°C to 70°C/-40°F to 158°F
	Humidity	10% to 90% (non-condensing)

* Compatible with 802.3af mode with restricted function: 1x3 MIMO with 1 spatial stream.

Power Module

Part Number	Description
ACCESSORY-ZZ0101F	Universal power adapter (12 V/2 A)

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