ZyXEL

The All-in-One, Intelligent WLAN Controller

- **Centralized management for up to 64* APs**
- **ZyMesh mitigates complex, inconvenient cabling Wi-Fi deployments**
- **Comprehensive features for WLAN performance optimization and always-on Wi-Fi connectivity**
- **Seamless integration with external AD, LDAP, RADIUS authentication**
- **User-friendly authentication by QR code facilitates keyboard-less mobile devices accessing Internet**

* Management of 64 APs is supported with firmware version V4.10 or above

ZyXEL green

NXC2500
Wireless LAN Controller

Delivering a good wireless LAN service that stands up to the demands of connecting users to the rapid evolution application is not easy. The latest BYOD (Bring Your Own Device), mobility and smart handheld technology all present scalability, manageability and functionality challenges to business Wi-Fi installations. To enable businesses to addressing these challenges ZyXEL has developed the NXC2500, an all-in-one, intelligent Wireless LAN Controller. The ZyXEL NXC2500 is designed to provide resellers and businesses with a solution that works as an AP planning, deployment, monitoring and maintenance solution while offering management, authentication and guest access within an all-in-one device.

Benefits

Adaptive and resilient Wi-Fi deployments

Surpassing the mesh networking technology, ZyMesh creates wireless mesh links with easy configuration, better management and enhanced reliability. ZyMesh eases extending Wi-Fi coverage to places where cabling is difficult. In addition, each repeater APs can have multiple route selections to provide high resilience achieving non-stop Wi-Fi service. In the past, administrators had to assign channel and MAC addresses in each AP while setting up a WDS link to extend Wi-Fi service; now they can make initial provision and centralized management with ZyMesh and ZyXEL NXC2500 controller to manage and deploy networks easily.

Also, ZyXEL APFlex™ simplifies installation by resolving the managed/standalone AP mode configuration, automatically integrating into the network environment with Dynamic Host Configuration Protocol (DHCP), eliminating the need for pre-installation preparation.

Enhanced RF management and WLAN optimization

All wireless networks face a major challenge: ensuring Wi-Fi clients get service levels they'd need. The difficulty to resolve is that different kinds of Wi-Fi clients exist on the network, and these users tend to make their own connectivity and roaming decision.

The ZyXEL NXC2500 features with advanced WLAN optimization technologies that help administrators monitoring and maintaining health of the wireless network easily. Client steering utilizes functions of band select and client signal threshold to match every Wi-Fi client to the best radio of the best AP. Band select sets 5 GHz as the first priority to optimize network connectivity for dual-band clients. Client signal threshold ensures all clients connect to the APs with stronger signal. Auto healing is another WLAN optimization function that deployed APs detect status of nearby APs and adjust power automatically while failure occurred in neighboring AP. Load Balancing feature is able to resolve poor Wi-Fi connectivity due to AP overloaded. Auto healing provides reliable and always-on wireless coverage. The ZyXEL NXC2500 also features dynamic channel selection to optimize Wi-Fi quality and performance while minimizing administration efforts by auto, instant channel selection.

Authentication with simplified management

The ZyXEL NXC2500 uses comprehensive authentication methods to manage Wi-Fi accessibility for devices with AD, LDAP or RADIUS authentication servers. The NXC2500 also provides a built-in RADIUS server, a captive portal server and a DHCP server to facilitate small and medium businesses deploying secured employee and guest access services without any additional server. The user-friendly guest account generator can dynamically create user accounts for guests to log into a customized capital portal via QR code. The NXC2500 also supports applying external customized portal pages which largely benefit the access authentication in hospitality venues like hotels. Also, with IETF standard-based CAPWAP, secured communication can be established between the NXC controller and access points without changing the existing LAN infrastructure. The NXC2500 can offer a secured Wi-Fi network with easy installation for your business.

Feature Highlights

High Scalability

High Scalability

The NXC2500 supports the management of the access points to provide complete wireless LAN functions for the business. As standard the NXC2500 supports the initial management of 8 APs and provides scalability with a maximum supported total up to 64* APs, the "pay-as-you-grow" principle provides reassurance and future proofing for SMBs, hotels and educational institutes to implement secured, centralized wireless LAN networks.

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Comprehensive Access Management

Comprehensive Access Management

The NXC2500 offers easy dynamic account creation and versatile wireless user authentication methods for different application scenarios to provide smooth and secured access. The MAC authentication and customized captive portal adapted to suit the needs of enterprises, hospitability and public venues application. With captive portal via QR code access support, keyboard-less mobile devices are able to access Internet service instantly and securely.

Auto Healing

Auto Healing

The NXC2500 has Auto Healing feature that detects status of neighbor APs and adjust AP power automatically to provide enduring network services. If an AP is not functional, the nearby APs will increase output power to cover the void area. Once the AP outage recovers, the nearby APs decrease output power automatically.

NAT Traversal

NAT Traversal

The NXC2500 can facilitate the connections traversing NAT gateways to solve connection issue for AP and WLAN controller deployed in different subnets and to ensure the highest robustness of WLAN networks.

ZyMesh

ZyMESH

The ZyMesh features of NXC2500 help extending Wi-Fi coverage to places where cable deployment is difficult. In addition, each repeater APs has multiple route selections to provide non-stop Wi-Fi services. ZyMesh enables to make auto provision and manage for multiple APs easily and centrally.

Secured Wireless Edge

Secured Wireless Edge

The NXC2500 features with multiple network security functions to provide the most robust protection for the wireless network edge. The rogue AP containment and detection ensures to block malicious AP, while industry-standard WPA/WPA2-Enterprise authentication, a variety of Extensible Authentication Protocol (EAP) frameworks and built-in firewall feature enables secure access against unauthorized or malicious activities in enterprise network.

Client Steering

Client Steering

Client Steering sets 5 GHz as priority for dual-band devices to overcome heavy loading on 2.4 GHz, while client signal threshold transfer devices to APs with stronger signal. With these two functions, the NXC2500 ensures better radio resource usage to provide max wireless network performance for users.
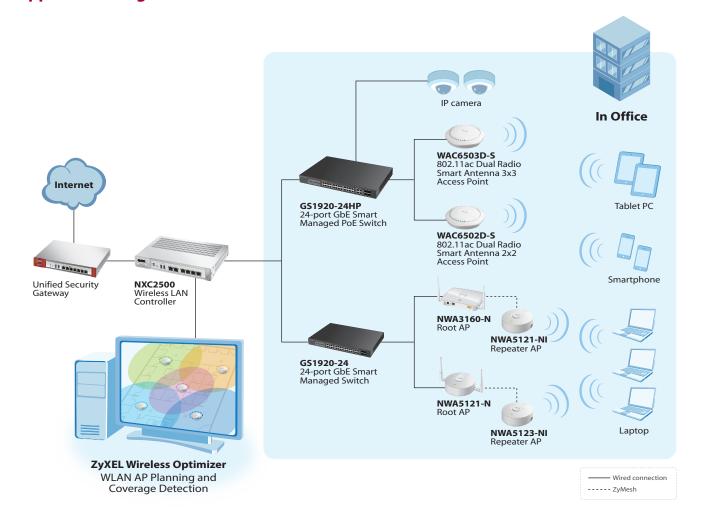
ZyXEL Wireless Optimizer

ZyXEL Wireless Optimizer

The NXC2500 supports ZyXEL Wireless Optimizer (ZWO) to simplify planning, deployment and management of business Wi-Fi without costly on-site survey tools and additional sensors or location servers.

Application Diagram

Internet

Unified Security Gateway

NXC2500
Wireless LAN Controller

IP camera

WAC6503D-S
802.11ac Dual Radio
Smart Antenna 3x3
Access Point

WAC6502D-S
802.11ac Dual Radio
Smart Antenna 2x2
Access Point

GS1920-24HP
24-port GbE Smart
Managed PoE Switch

GS1920-24
24-port GbE Smart
Managed Switch

NWA3160-N
Root AP

NWA5121-NI
Repeater AP

NWA5121-N
Root AP

NWA5123-NI
Repeater AP

In Office

Tablet PC

Smartphone

Laptop

ZyXEL Wireless Optimizer
WLAN AP Planning and
Coverage Detection

———— Wired connection
- - - - - ZyMesh

Specifications

Model	NXC2500
Product name	Wireless LAN Controller
Port Density	
10/100/1000 Mbps LAN ports	6
USB port	2
Performance	
Throughput (Gbps)	1
Managed AP number (default/max.)	8/64*
Fanless	Yes
WLAN Features	
Wireless security (WPA/WPA2-PSK, Enterprise)	Yes
Dynamic channel selection	Yes
Wireless multicast setting	Yes
AP load balancing	Yes
AP planning and site-survey	Yes (AP planning and coverage detection)
ZyMesh	Licensed service
Band select	Yes
Client signal threshold	Yes
Auto healing	Yes
Security Features	
IEEE 802.1X	Yes
IEEE 802.11w	Yes**
Layer-2 isolation	Yes
Web authentication	Yes
MAC filtering	Yes
RADIUS authentication	Yes
Microsoft AD authentication	Yes
LDAP authentication	Yes
Embedded RADIUS server	Yes (512 user)
Rogue AP detection	Yes
Identity-based user security management	Yes
Wireless intrusion detection	Rogue AP detection and containment
Control and Provisioning	
Managed AP discovery	Broadcast/DHCP option/DNS/Manual
CAPWAP	Yes
AP data forwarding mode support	Distributed (local bridge) and Centralized (data tunnel)
Management interface	HTTP/HTTPS/Telnet/SSH/SNMP
Output power control	Yes
Wire/wireless packet capture	Yes
Network	
VLANs	Yes
DHCP client	Yes
DHCP relay, server	Yes
NAT	Yes
Static routing	256
Policy routing	256

Management of 64 APs is supported with firmware version V4.10 or above
*** Supports on firmware version V4.20 or above*

Model	NXC2500
Access Control	
MAC filter list	Yes
MAC authentication	Internal and external RADIUS
Guest account generator	Yes (512 user)
Customizable web login portal	Yes
QoS	
WMM/power save	Yes
DiffServ marking	Yes
AP load balancing	Yes
Management Features	
CLI with SSH	Yes
Web UI with SSL	Yes
myZyXEL.com 2.0	Yes*
SNMP	v1, v2c, v3
Multi-level administration roles	Admin, guest operator
User/Application Management	
Authentication	RADIUS/Microsoft AD/LDAP/Local
Local user database	Yes (512)
User/group policy	Yes
Authentication by QR code	Yes*
Captive portal	Yes
External portal page	Yes
Page upload	Yes
Other	
System diagnostic tool	Yes
ZyXEL Wireless Optimizer	Supported
Certification	
EMC	• FCC Part 15B • CE EN55022, EN55024 • ERP Lot 6 • C-tick AS/NZSCISPR22 • BSMI CNS13438
Safety	• LVD EN60950-1: A12 • BSMI CNS14336
Power Requirements	
Power supply	12 VDC, 100 - 240 VAC
Max. power consumption (watt)	10.57
Physical Specifications		
Item	Dimensions (WxDxH)(mm/in.)	242.0 x 175.39 x 35.5/9.53 x 6.9 x 1.4
	Weight (kg/lb.)	1.254/2.76
Packing	Dimensions (WxDxH)(mm/in.)	395 x 238 x 101/15.55 x 9.37 x 3.98
	Weight (kg/lb.)	2.49/5.49
Included accessories		• Power adapter • Rack mounting kit
Environmental Specifications		
Operating	Temperature	0°C to 40°C/32°F to 104°F
	Humidity	5% to 95% (non-condensing)
Storage	Temperature	-20°C to 70°C/-4°F to 158°F
	Humidity	5% to 95% (non-condensing)
MTBF (hr)		815,464

* Supports on firmware version V4.20 or above

Access Point Compatibility List

Series	WAC6500 Series*	NWA3000-N Series	NWA5000 Series	NWA5120 Series
	Unified Pro Access Point	Unified Pro Access Point	Managed Access Point	Unified Access Point
Model	WAC6503D-S WAC6502D-S WAC6502D-E WAC6553D-E	NWA3160-N NWA3560-N NWA3550-N	NWA5160N NWA5560-N NWA5550-N	NWA5121-NI NWA5121-N NWA5123-NI NWA5301-NJ
Functions				
Auto provisioning over WAN & LAN	Yes	Yes	Yes	Yes
CAPWAP	Yes	Yes	Yes	Yes
Auto channel selection	Yes	Yes	Yes	Yes
AP load-balancing	Yes	Yes	Yes	Yes
Monitoring mode	Yes	Yes	Yes	Yes
Rogue AP detection	Yes	Yes	Yes	Yes
Rogue AP containment	Yes	Yes	Yes	Yes
Packet capture	Yes	Yes	Yes	Yes
Data forwarding	Local bridge/Data tunnel	Local bridge/Data tunnel	Local bridge/Data tunnel	Local bridge
ZyMesh	Yes**	Yes	Yes	Yes

* WAC6500 series AP is supported with firmware version V4.20 or above
** ZyMesh on firmware V4.20 for WAC6500 series is beta function. The official support is scheduled for future release

Other Information

License

Item	Description
Managed AP scalability	The NXC2500 Managed AP License increases the number of APs that can be managed by the NXC2500 WLAN controller by increments of 8 APs at a time. The maximum number of APs supported is 64*.
ZyMesh	This license enables the ZyMesh function on the NXC2500.

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