



## The All-in-One, Intelligent WLAN Controller

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

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

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 WiFi 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 WiFi deployments

Surpassing the mesh networking technology, ZyMesh creates wireless mesh links with easy configuration, better management and enhanced reliability. ZyMesh eases extending WiFi coverage to places where cabling is difficult. In addition, each repeater APs can have multiple route selections to provide high resilience achieving non-stop WiFi service. In the past, administrators had to assign channel and MAC addresses in each AP while setting up a WDS link to extend WiFi 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 WiFi clients get service levels they'd need. The difficulty to resolve is that different kinds of WiFi 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 WiFi 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 WiFi connectivity due to AP overloaded. Auto healing provides reliable and always-on wireless coverage. The ZyXEL NXC2500 also features dynamic channel selection to optimize WiFi quality and performance while minimizing administration efforts by auto, instant channel selection.



**ZyXEL one network**  
Redefining network integration

**NXC2500**  
**Wireless LAN Controller**

### Authentication with simplified management

The ZyXEL NXC2500 uses comprehensive authentication methods to manage WiFi 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 WiFi network with easy installation for your business.

### ZyXEL One Network experience

Aiming for relieving our customers from repetitive operations of deploying and managing a network, ZyXEL One Network is designed to simplify the configuration, management, and troubleshooting, allowing our customers to focus on the business priorities. ZyXEL One Network presents an easy-to-use tool, ZyXEL One Network Utility (ZON Utility), to realize speed network setup. ZyXEL Smart Connect\* allows ZyXEL networking equipment to be aware and recognize each other and further facilitating the network maintenance via one-click remote functions such as factory reset or power cycling. ZyXEL One Network redefines the network integration across multiple networking products from switch to WiFi AP to WLAN controller and to Gateway. network with easy installation for your business.

\*ZyXEL Smart Connect is supported on selected models. Please refer to specifications for more detail.

## 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.

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



Comprehensive Access Management

### Comprehensive Access Management

The NXC2500 offers easy dynamic account creation and versatile wireless user authentication methods to provide smooth and secured access. The MAC authentication and customized captive portal adapted to suit the needs of enterprises and hospitality. 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.



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.



ZyMESH

### ZyMesh

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



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.



**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 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.



**ZON Utility**

### ZyXEL One Network Utility

To streamline the management process, the NXC Series comes with the ZyXEL One Network (ZON) utility, allowing administrators to assign IP addresses to multiple WLAN controllers through just one platform. Administrators can avoid the hassle logging into each WLAN controller to change the default IP addresses before physical installation.

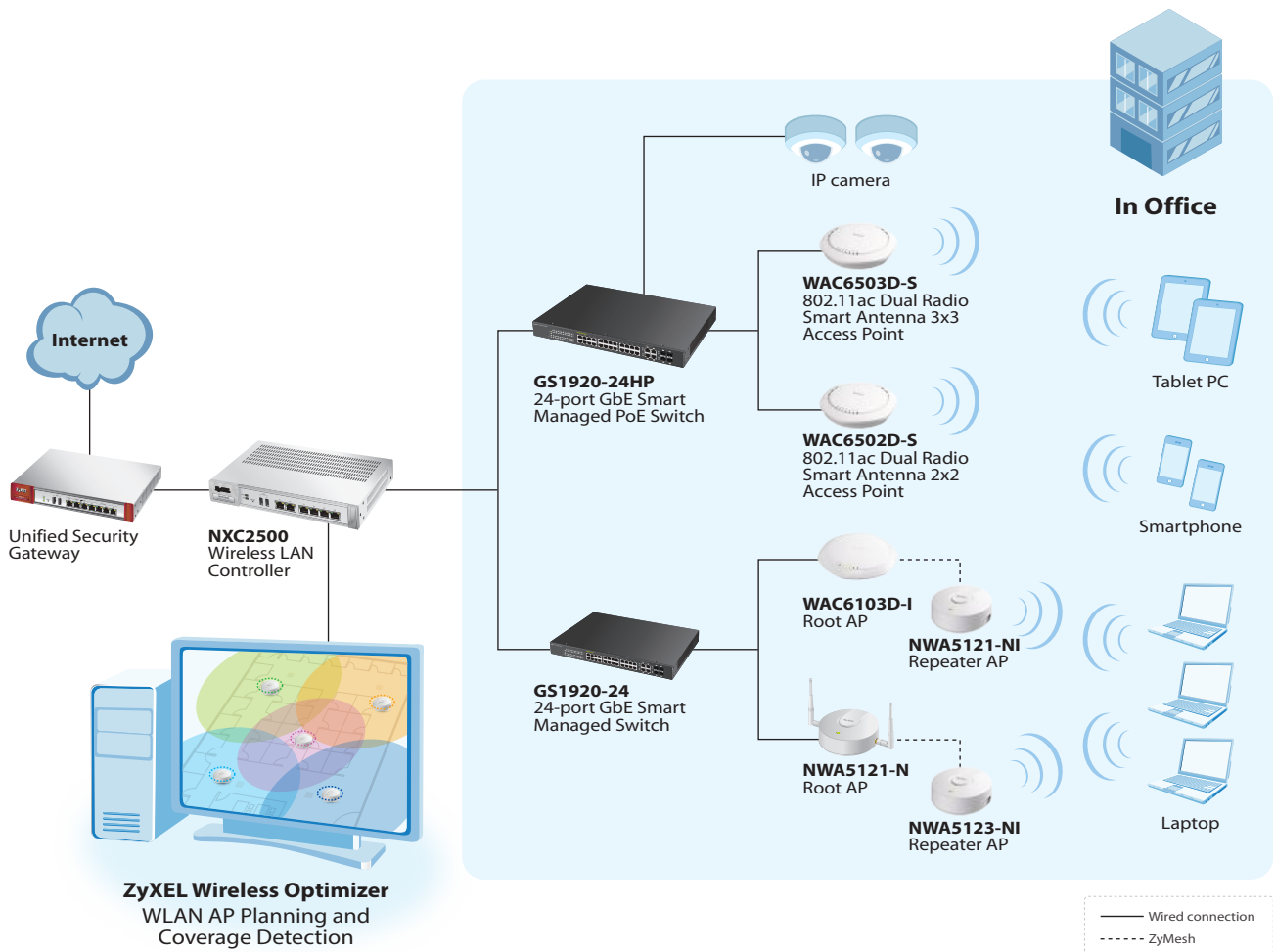


**ZyXEL Wireless Optimizer**


### ZyXEL Wireless Optimizer

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

## Application Diagram



## Specifications

Model	NXC2500	
Product name	Wireless LAN Controller 	
<b>Port Density</b>		
10/100/1000 Mbps LAN ports	6	
USB port	2	
<b>Performance</b>		
Throughput (Gbps)	1	
Managed AP number (default/max.)	8/64	
Fanless	Yes	
<b>WLAN Features</b>		
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	
Fast roaming	Pre-authentication, PMK caching and 802.11r/k/v	
<b>Security Features</b>		
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	
<b>Control and Provisioning</b>		
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	
<b>Network</b>		
VLANs	Yes	
DHCP client	Yes	
DHCP relay, server	Yes	
NAT	Yes	
Static routing	256	
Policy routing	256	

<b>Model</b>	<b>NXC2500</b>	
<b>Access Control</b>		
<b>MAC filter list</b>	Yes	
<b>MAC authentication</b>	Internal and external RADIUS	
<b>Guest account generator</b>	Yes (512 user)	
<b>Customizable web login portal</b>	Yes	
<b>QoS</b>		
<b>WMM/power save</b>	Yes	
<b>DiffServ marking</b>	Yes	
<b>AP load balancing</b>	Yes	
<b>Management Features</b>		
<b>CLI with SSH</b>	Yes	
<b>Web UI with SSL</b>	Yes	
<b>myZyXEL.com 2.0</b>	Yes	
<b>SNMP</b>	v1, v2c, v3	
<b>Multi-level administration roles</b>	Admin, Limited Admin and Guest Manager	
<b>ZyXEL One Network</b>		
<b>ZON Utility</b>	<ul style="list-style-type: none"> <li>• Discovery of ZyXEL switches, APs, WLAN controllers and gateways</li> <li>• Centralized and batch configurations               <ul style="list-style-type: none"> <li>▪ IP configuration</li> <li>▪ Device factory reset</li> <li>▪ Firmware upgrade</li> <li>▪ One-click quick association with ZyXEL AP Configurator (ZAC)</li> <li>▪ IP renew</li> <li>▪ Device locating</li> <li>▪ Password configuration</li> <li>▪ Device reboot</li> <li>▪ Web GUI access</li> </ul> </li> </ul>	
<b>User/Application Management</b>		
<b>Authentication</b>	RADIUS/Microsoft AD/LDAP/Local	
<b>Local user database</b>	Yes (512)	
<b>User/group policy</b>	Yes	
<b>Authentication by QR code</b>	Yes	
<b>Captive portal</b>	Yes	
<b>External portal page</b>	Yes	
<b>Page upload</b>	Yes	
<b>Other</b>		
<b>System diagnostic tool</b>	Yes	
<b>ZyXEL Wireless Optimizer</b>	Supported	
<b>Certification</b>		
<b>EMC</b>	<ul style="list-style-type: none"> <li>• FCC Part 15B</li> <li>• CE EN55022, EN55024</li> <li>• ERP Lot 6</li> <li>• C-tick AS/NZSCISPR22</li> <li>• BSMI CNS13438</li> </ul>	
<b>Safety</b>	<ul style="list-style-type: none"> <li>• LVD EN60950-1: A12</li> <li>• BSMI CNS14336</li> </ul>	
<b>Power Requirements</b>		
<b>Power supply</b>	12 VDC, 100 - 240 VAC	
<b>Max. power consumption (watt)</b>	10.57	
<b>Physical Specifications</b>		
<b>Item</b>	<b>Dimensions (WxDxH)(mm/in.)</b>	242.0 x 175.39 x 35.5/9.53 x 6.9 x 1.4
	<b>Weight (kg/lb.)</b>	1.254/2.76
<b>Packing</b>	<b>Dimensions (WxDxH)(mm/in.)</b>	395 x 238 x 101/15.55 x 9.37 x 3.98
	<b>Weight (kg/lb.)</b>	2.49/5.49
<b>Included accessories</b>	<ul style="list-style-type: none"> <li>• Power adapter</li> <li>• Rack mounting kit</li> </ul>	
<b>Environmental Specifications</b>		
<b>Operating</b>	<b>Temperature</b>	0°C to 40°C/32°F to 104°F
	<b>Humidity</b>	5% to 95% (non-condensing)
<b>Storage</b>	<b>Temperature</b>	-20°C to 70°C/-4°F to 158°F
	<b>Humidity</b>	5% to 95% (non-condensing)
<b>MTBF (hr)</b>	815,464	

## Access Point Compatibility List

Series	WAC6500 Series	WAC6300 Series	WAC6100 Series	WAC5300 Series	NWA5120 Series
	Unified Pro Access Point	Unified Pro Access Poin	Unified Pro Access Point	Unified Access Point	Unified Access Point
<b>Model</b>	WAC6503D-S WAC6502D-S WAC6502D-E WAC6553D-E WAC6552D-S	WAC6303D-S	WAC6103D-I	WAC5302D-S	NWA5123-AC NWA5123-AC HD NWA5121-NI NWA5121-N NWA5123-NI NWA5301-NJ
<b>Functions</b>					
<b>Auto provisioning over WAN &amp; LAN</b>	Yes	Yes	Yes	Yes	Yes
<b>CAPWAP</b>	Yes	Yes	Yes	Yes	Yes
<b>Auto channel selection</b>	Yes	Yes	Yes	Yes	Yes
<b>AP load-balancing</b>	Yes	Yes	Yes	Yes	Yes
<b>Rogue AP detection</b>	Yes	Yes	Yes	Yes	Yes
<b>Packet capture</b>	Yes	Future support	Yes	Future support	Yes*
<b>Data forwarding</b>	Local bridge/ Data tunnel	Local bridge/ Data tunnel	Local bridge/ Data tunnel	Local bridge	Local bridge
<b>ZyMesh</b>	Yes	Future support	Yes	Future support	Yes*

\*Future support on NWA5123-AC HD

## Other Information

### Managed AP License

Model	Part number	Description	Note
<b>NXC5500</b>	LIC-AP-ZZ0004F	E-iCard AP Upgrade License 8 APs for NXC5500	The maximum number of APs supported is 1024
	LIC-AP-ZZ0005F	E-iCard AP Upgrade License 64 APs for NXC5500	
<b>NXC2500</b>	LIC-AP-ZZ0003F	E-iCard AP Upgrade License 8 APs for NXC2500	The maximum number of APs supported is 64
	LIC-AP-ZZ0006F	E-iCard AP Upgrade License 32 APs for NXC2500	

### ZyMesh License

Model	Part number	Description
<b>NXC5500</b>	LIC-MESH-ZZ0002F	This license enables the ZyMesh function on the NXC5500
<b>NXC2500</b>	LIC-MESH-ZZ0001F	This license enables the ZyMesh function on the NXC2500

For more product information, visit us on the web at [www.ZyXEL.com](http://www.ZyXEL.com)



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