NETGEAR® PROSAFE®

ProSafe® 20-AP Wireless Controller WC7520

Data Sheet

Reliable, Secure and Scalable Wireless Controller for Mid-sized Businesses, Schools and Hospitals

The NETGEAR ProSafe 20-AP Wireless Controller WC7520 offers a high-performance and fully-featured Wireless LAN architecture to meet the demands of medium-sized businesses, schools, and hospitals with thousands of users. Focusing on ease-of-use, the WC7520 Controller simplifies wireless deployments and network management with best-in-class wireless reliability, coverage, and performance. The scalable WC7520 Controller enables businesses to grow their wireless network as needed with a dramatic return on investment, with optional licenses that support their changing needs. Via licensing upgrades, the ProSafe Wireless Controller scales up to 50 access points (AP). For larger deployments, the WC7520 Controller is stackable up to three units, supporting up to 150-APs, including controller redundancy. Meeting the next generation needs of larger installations, the WC7520 Controller delivers central wireless management, integrated wireless mobility, robust top-end security and rich converged services such as L2/L3 fast roaming, guest access captive portal and Voice over Wi-Fi support. Built to last, the WC7520 Controller is backed by a Lifetime Warranty and delivers enterprise-class connectivity and secure wireless LAN functionality.

Scalable Architecture

The WC7520 Controller natively supports 20 APs and is upgradable in 10-AP increments up to a total of 50 APs via WC7510L licenses. Stackable up to three controllers, a WC7520 Controller stack can support 150 access points with a single interface. Importantly, the WC7520 offers redundancy for always-on reliability and peace of mind.

Centralized Management

Deployed as an overlay on the existing wired network infrastructure, the NETGEAR ProSafe 20-AP Wireless Controller simplifies the network management by providing a single point of management for the entire wireless network. Easy to set up, the WC7520 Controller discovers all supported access points in the network, even across VLANs and subnets. Once identified, the access points are provisioned to dependent access points in minutes. Building floor plans can be used to visualize live coverage and heat maps of the wireless network.

Robust Security

With identity-based security features such as support for RADIUS, Active Directory and internal or external AAA server, NETGEAR ProSafe 20-AP Wireless Controller truly unifies wired and wireless access without compromising on security. Management VLAN is configurable and up to 8 security configuration profiles (SSID, 802.11i security, VLAN, ACLs, radio parameters) can be active. Rogue AP detection permits rogue APs classification (friendly or hostile). Standard RADIUS compliance enables support for third-party authentication and billing system implementation. Scheduled wireless on/off times permits the wireless network to be completely unavailable during specified non-business hours.

Guest Access, Captive Portal and Logging

Guest access allows restricted access to the network, using an integrated captive portal. Two methods of entry are provided, either assisted or self certified. In the assisted model, the receptionist can create a user name and password for guests in the GUI and the WC7520 Controller hosts a captive portal where guests can enter their pre-configured credentials to gain access to the network. Alternatively, the WC7520 Controller hosts a guest portal where guests can register themselves before entering the network. Backend VLAN policies ensure restricted access to guests, prohibiting them any access to the sensitive data on the corporate network. Guest activity logs are available.

24/7 TECHNICAL SUPPORT*

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Email: info@NETGEAR.com

NETGEAR PROSAFE LIFETIME WARRANTY* NBD* 3-year on-site service

RF Management and Hole Detection

With integrated RF planning tools, an administrator can input floor plans, building dimensions, and desired coverage. The planning tools compute the predicted RF characteristics of the building, and display predicted coverage. Automatic control of AP transmit power and channel allocation ensures coverage by minimizing interferences. Automatic WLAN healing after loss of AP or due to RF interferences adapts the power and channel of the other APs around the area. Scheduled automatic channel allocation authorizes enterprise-class reliable Wireless experience.

Load Balancing and Rate Limiting

Automatic load balancing of clients across APs is provided based on number of clients per AP, and signal strength threshold/data rate threshold of clients on the BSS. Rate limiting is provided by SSID. Load balancing and rate limiting ensure fair bandwidth allocation among all clients for robust wireless connectivity.

Fast Roaming and Voice Over Wi-Fi

The NETGEAR ProSafe 20-AP Wireless Controller supports rapid mobility across VLANs and subnets including 802.11i pre-authentication and fast roaming support (FRS). Seamless L2 and L3 roaming provides support for latency-sensitive applications such as video, audio and voice over wireless. Wi-Fi Multimedia (WMM) advanced prioritization extends Wi-Fi's high-quality end-user experience to voice applications (VoWi-Fi).

Heat Maps and Triangulation

AP heat maps by wireless band, wireless channel and signal strength allows real-time view of the wireless network status. Administrators can easily locate known APs, rogue APs, and associated clients on the heat map directly from the monitoring page.

Monitoring and Reporting

The WC7520 has a heartbeat mechanism between the controller and the AP. It is monitored based on several factors, such as RF interference, clients, error levels, etc.

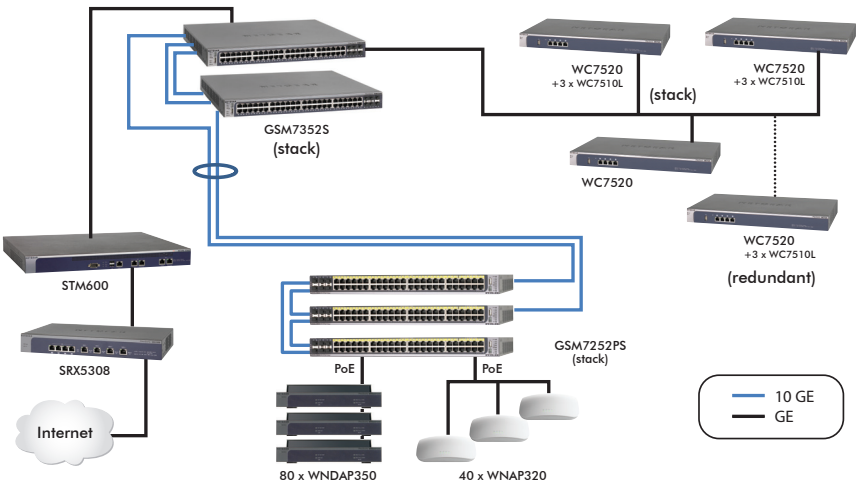
Each AP is constantly monitored (number of clients, traffic load, RF interference, packet error levels and retransmission statistics). Statistics provide reliable metrics per AP, per client, per floor and for the entire wireless network.

Performance

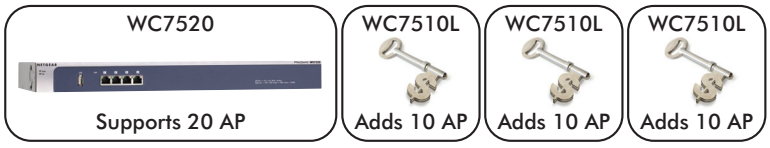
The best of centralized and distributed architectures are implemented by the NETGEAR ProSafe 20-AP Wireless Controller for outstanding Wireless-N performance. Local traffic is automatically switched at the access points level for fastest processing, when roamed L3 traffic is processed at the controller level with advanced data control. Real-time applications such as VoWi-Fi require perfect inter subnet/inter VLAN mobility: WC7520 encryption tunneling delivers enterprise-class fast roaming without any impact on Layer 2/Layer 3 performance.

Supported Access Points

Supporting standard NETGEAR access points, the WC7520 Controller enables customers to select the right access points for their needs, even mixing models to provide the right coverage. The standard access points are converted to dependent access points. Supported models include professional-class ProSafe access points WNAP210, WNAP320 (single band) and WNDAP350, WNDAP360 (dual band), all with Power over Ethernet capabilities and lifetime warranties.



Example of Wireless-N configuration with 120 access points (AP) and one redundant controller.

TECHNICAL SPECIFICATIONS														
SYSTEM INFORMATION AND LIMITS														
Wireless Controller Model Number	WC7520 ProSafe 20-AP Wireless Controller													
Supported AP Models	• WNDAP360 ProSafe Dual Band 802.11n Wireless Access Point • WNDAP350 ProSafe Dual Band 802.11n Wireless Access Point • WNAP320 ProSafe 802.11n Wireless Access Point • WNAP210 ProSafe 802.11n Wireless Access Point													
Supported Modes	• Wireless-A/B/G/N													
Maximum AP Supported per Controller	• 20 (default) • 50 with 3 x Incremental 10-AP License Upgrades (WC7510L)													
Maximum Controllers that Can Be Stacked Together	3													
Maximum AP Supported per Stacked Setup	150													
Maximum Profile Groups per Controller	• 8 • Each access point belongs to only one profile group													
Maximum Security Profiles (SSID) per Profile Group	• 8 per radio (2.4 GHz; 5 GHz) • 16 with WNDAP350													
Maximum Security Profiles (SSID) per Controller	128 (assuming WNDAP350/WNDAP360 and 8 security profiles per radio)													
Maximum Security Profiles per Network (3 Controllers)	512													
Maximum Rogue APs Detectable per Controller	512													
Maximum Floorplans per Controller	• 3 (default) • Additional floorplans possible with USB local storage (up to a maximum of 18 floorplans)													
Number of Captive Portals per Controller	1													
Maximum Clients per AP	• WNAP210: up to 32 clients; WNAP320: up to 64 clients • WNDAP350 and WNDAP360: up to 64 clients per radio (128 clients total)													
Maximum Clients per Controller	None other than maximum clients per AP													
L2 Mobility	L2 fast roaming support between the APs													
L3 Mobility	L3 fast roaming support with encrypted tunnelling between the APs and the controller													
Maximum VLANs per Controller	• 64 VLANs for SSIDs • 1 configurable management VLAN													
Controller Redundancy	• VRRP-based N+1 redundancy with failover • 1:1 when one cold redundant Controller and one production Controller are configured to form a Redundancy group • 1:2 or 1:3 when one cold redundant Controller is added to a Stack of 2 or 3 production Controllers • Licenses on the redundant controller need - at least - to match those on each protected production controller													
LICENSE CONFIGURATIONS														
Per Controller: Up to 50 Access Points (AP) with Appropriate Licenses														
Per Stack: Up to 150 Access Points (AP) with Appropriate Licenses														
CONFIGURATION EXAMPLES - WIRELESS A/B/G/N DEPLOYMENT														
Number of Access Points - up to:	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Number of Wireless Controllers (WC7520)	1	1	1	1	2	2	2	2	2	3	3	3	3	3
Number of 10-AP Incremental License Upgrades (WC7510L)	0	1	2	3	2	3	4	5	6	5	6	7	8	9
IP AND VLANS CONFIGURATION														
DHCP Server/Relay	• Integrated DHCP server • Multiple DHCP server/pool can be added for different VLANs (up to 64)													
VLANs for the Wireless Controller	One management VLAN (configurable VLAN ID)													
VLANs Access Points / Multiple SSIDs	64 VLANs													
VLANs Deployment	The Wireless Controller must have IP connectivity with the access points through the management VLAN. If the Controller and the APs are on different management VLANs, external VLAN routing must allow IP connectivity between the Controller and the APs.													

RF PLANNING AND MONITORING	
Integrated Deployment Planning	• Hierarchical view of the network: Floor maps upload and floor maps dimensions input • Automated RF planning algorithm: Computed number of APs required to cover a floor plan • Theorical cloud coverage indicated for each AP for positionning assistance on the floor plan
RF Monitoring	• Coverage computing per floor plan • Alert for any detected coverage holes with mitigation options with neighboring APs • Rogue AP/blacklisted clients triangulation
RF MANAGEMENT	
Automatic Channel Allocation	• Channel automatic distribution to reduce interference • Auto-channel allocation takes into consideration the AP location, interferences, and neighborhood maps for each AP • Modifiable list of corporate channels to be used • Scheduled mode for auto-channel allocation • Automatic mode available in case of high level of interference
Automatic Power Control	• Optimum transmit power determination based on coverage requirements • Automatic power control mode available • Neighborhood scan of RF environment to minimize neighboring AP interference and leakage across floors
Coverage Hole Detection	• Automatic mode • Down APs or compromised RF environment detection with alerts • Self healing: Automatic neighboring AP power increase to fill in for coverage losses
Load Balancing	• AP load monitoring and overload prevention • Client redirection to lightly loaded neighboring APs
Fast Roaming	• Seamless rapid mobility across VLAN and subnets • Includes 802.11i pre-auth and fast roaming • Fast roaming support accross L2, and L3 for video, audio and voice over wireless client
QUALITY OF SERVICE	
WMM Quality of Service	WMM (802.11e) prioritizes traffic for both upstream traffic from the stations to the access points (station EDCA parameters) and downstream traffic from the access points to the client stations (AP EDCA parameters)
WMM Queues in Decreasing Order of Priority	• Voice: The highest priority queue with minimum delay, which makes it ideal for applications like VoIP and streaming media • Video: The second highest priority queue with low delay is given to this queue. Video applications are routed to this queue • Best effort: The medium priority queue with medium delay is given to this queue. Most standard IP application will use this queue • Background: Low priority queue with high throughput. Applications, such as FTP, which are not time-sensitive but require high throughput can use this queue
WMM Power Save Option	WMM power save helps conserve battery power in small devices such as phones, laptops, PDAs, and audio players using IEEE® 802.11e mechanisms
Rate Limiting	• Rate limit per SSID set as a percentage of total available bandwidth
WIRELESS SECURITY	
Client Authentication Protocols	• Open, WEP, WPA/WPA2-PSK • 802.11i/WPA/WPA2 Enterprise with standard interface to external AAA/RADIUS Server • Local ACLs (512 MAC) • MAC ACLs based on local AAA Server or external Radius Server
Distinct AAA Server per SSID	Yes
RADIUS Accounting Protocol	Per Client tracking for: • Bytes Tx/Rx • Connect/disconnect time
LDAP-based Authentication	• Standard interface to external LDAP server/Microsoft® Active Directory Server
Integrated AAA Server	Local database authentication based on WC7520 internal AAA Server
Guest Access	• Integrated captive portal available for client authentication in a security profile • Password based authentification mode: Local user store available, receptionist assigned user name/password • External Radius server mode: External RADIUS authentication for the captive portal clients • Open authentication mode: Guest auto registration with email address • Extraction of logs of guest activity
Captive Portal	Configurable portal page, including image files
Rogue Access Points	• Rogue AP definition: AP with radio SSID oberved by any of the managed APs and seen transmitting on same L2 wired network • Detection and mapping of up to 512 rogue APs

WIRELESS NETWORK MONITORING	
Monitoring Summary	Summary of managed access points status, rogue access points detected, wireless stations connected, Wireless Controller information and wireless network usage
Managed Access Points	AP status for the managed access points and details that includes configuration settings, current wireless settings, current clients and detailed traffic statistics
Rogue Access Points	• Rogue access points reported • Rogue access points in same channel • Rogue access points in interfering channels
Wireless Clients	• Clients statistics and details per AP, per SSID, per floor, per location • Blacklisted clients, roaming clients
Wireless Network Usage	Network usage statistics display plots of average received/transmitted network traffic per managed access point. Three different plots show Ethernet, Wireless 802.11 b/bg/ng and 802.11 a/na mode traffic separately
Heat Maps	• Live coverage and visualization heat maps • Location visualization and device tracking
DHCP Leases	DHCP details for wireless clients
MANAGEMENT	
Management Interface	HTTP, SNMP v1/v2c, telnet, Secure Shell (SSH)
Logging and Reporting	• If available syslog server on the network, the Wireless Controller can send all logs. Logs are also available on the GUI and ready to download (log export file) • Email alerts for events as per configuration to mutiple email addresses
Diagnostics	Managed access points ping
Maintenance	Save/restore configuration, restore to factory defaults, admin password change, add user (read-only), firmware upgrade via Web browser for the Wireless Controller and the managed access points
Dual Boot Image	Supported
SNMP	SNMP v1/v2c
IEEE AND IETF RFC STANDARDS	
Wired IEEE Standards	• IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T • IEEE 802.1Q VLAN tagging
Wired IEEE Standards	• IEEE 802.11a, 802.11b, 802.11g, 802.11n • WMM (from 802.11e)
RFC - System Facilities	• RFC 1001 Protocol standard for a NetBIOS service on a TCP/UDP transport: Concepts and methods • RFC 1002 Protocol standard for a NetBIOS service on a TCP/UDP transport: Detailed specifications • RFC 1155 Management information for TCP/IP networks • RFC 1305 Network Time Protocol (Version 3) Specification, Implementation and Analysis • RFC 2131 DHCP • RFC 3768 Virtual Router Redundancy Protocol (VRRP) • RFC 768 UDP • RFC 791 IP • RFC 792 ICMP • RFC 793 TCP • RFC 826 ARP
RFC - Security and AAA	• WPA-PSK, WPA2-PSK • RFC 1321 MD5 Message – Digest Algorithm • RFC 1851 Triple DES Algorithm • RFC 2246 TLS Protocol Version 1.0 • RFC 2404 HMAC-SHA-1-96 • RFC 3280 Internet X.509 PKI Certificate and CRL certificate • RFC 3377 Lightweight Directory Access Protocol (v3): Technical Specification • RFC 3565 Use of the Advanced Encryption Standard (AES) Encryption Algorithm in Cryptographic Message Syntax • RFC 4346 TLS Protocol version 1.1
IEEE AND IETF RFC STANDARDS	
RFC - Management	• SNMP v1, v2c • RFC 364 syslog • RFC 854 telnet • RFC 1156 MIB • RFC 1157 SNMP • RFC 1213 MIB II • RFC 1350 TFTP • RFC 2616 HTTP • RFC 3164 The BSD Syslog Protocol • Enterprise private MIBs

HARDWARE	
Gigabit RJ45 Ports LAN	Switch 4-port 10/100/1000
Flash Memory/RAM	8 MB + 2 GB CF/1 GB DDR2
USB Port	1 port for USB storage • More floor heat maps • Extended statistics history
Major Regulatory Compliance	FCC Class A, CE, WEEE, RoHS
Storage and Operating Temperatures	Operating temperature 0°-45° C (32°-113° F), Storage temperature -20°-70° C (-4°-158° F)
Humidity	Operation 90% Maximum Relative, Storage 95% Maximum Relative
Electrical Specifications	100-240V, AC/50-60Hz, Universal Input, DC 5V/8A (internal power supply)
Dimensions (W x H x D) cm	26.1 x 4.3 x 44
Dimensions (W x H x D) in	10.3 x 1.7 x 17.3
Weight kb/lb	2.912/6.4
System Requirements	Internet Explorer® 5.0 or higher or Mozilla Firefox® 1.0 or higher
Package Contents	ProSafe 20-AP Wireless Controller (WC7520), Ethernet cable, power cord, installation guide, resource CD
Warranty	ProSafe Lifetime Warranty† Next business day onsite hardware replacement support, 3 years (included)**
ORDERING INFORMATION - CONTROLLER	
North America	WC7520-100NAS
Europe	WC7520-100EUS
Asia	WC7520-100AUS
ORDERING INFORMATION - LICENSES	
Incremental 10-AP License Upgrade	WC7510L-10000S
PROSUPPORT SERVICE PACKS	
OnCall 24x7, Category 3	PMB0333
XPressHW, Category 3	PRR0333-100 (Australia only)

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† Basic technical support provided for 90 days from date of purchase.

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