Networking services are now becoming more imperative for small businesses to take advantage of easy communication and effective services. The ZyXEL SBG3600-N and SBG3500-N Series are the “multi-WAN gateway” that provides high-speed Internet access for business users. Featuring VDSL2/ADSL2+ functionality, one GbE WAN with Small Form Pluggable (SFP) interface and a built-in LTE module, these devices offer flexible multiple-WAN connectivity to adopt various Internet interfaces. It also enhances network performance for small businesses to pursue the ultimate success.

Benefits

Multi-WAN connectivity with load balancing and failover
The ZyXEL SBG3600-N/SBG3500-N Series provides multiple WAN interfaces, including LTE, DSL, fiber, and Gigabit Ethernet, for load balancing and WAN backup. Service providers can flexibly offer WAN services of the highest availability in one single box for small business owners to enjoy non-stop services. Powered by the load balancing and fail-over mechanisms among multiple WANs, it maximizes WAN stability for mission-critical Internet applications with benefits of the integrated bandwidth.

High availability reinforced with 3G and LTE mobile WAN
It would be a disaster when fixed-lines get interrupted due to the difficulty maintaining the infrastructure. The ZyXEL SBG3600-N Series is embedded with a LTE module providing the flexibility to switch the WAN connection from DSL or Ethernet to LTE WAN dynamically as a fail-over backup when needed. With 3G/4G USB dongle support, both the SBG3600-N and SBG3500-N Series are able to take advantage of the 3G/4G WAN backup to ensure high availability required for stable networks.

Increased bandwidth and flexible range
The advanced VDSL2/ADSL2+ bonding* and dual-personality Ethernet WAN functionalities enable service providers to increase bandwidth and extend coverage. With the available copper lines, service providers can take advantage of VDSL2/ADSL2+ bonding to not only provide higher speeds for the existing subscribers, but also improve the user experience for those who are far away from the cabinet with stable, sufficient bandwidth regardless of the distance. Besides, if fiber lines are preferred, the ZyXEL SBG3600-N/SBG3500-N Series can use the Small Form Pluggable (SFP) interface to connect Fiber Ethernet for distances much longer than Gigabit networks, or simply connect to other Ethernet WAN devices without additional cost laying new fiber.

* VDSL2/ADSL2+ bonding only supported in SBG3500-N/SBG3600-N (Annex A)
Robust security design
Based on Access Control List (ACL) rules, Stateful Packet Inspection (SPI), Denial of Service (DoS) and Distributed Denial of Service (DDoS) measures, the ZyXEL SBG3600-N/SBG3500-N Series provides the first-line defense against hackers, network intruders and other harmful threats. The configurable Demilitarized Zone (DMZ) is another benefit that provides more flexible accessibility while preventing external attacks toward the confidential resources and databases.

Superior performance with 802.11n wireless
With built-in 802.11n technology, the ZyXEL SBG3600-N/SBG3500-N Series is the ultimate solution for exceptional security, speed and coverage. Featuring multiple SSIDs that allow companies to protect sensitive data by separating public Internet access from the company's private LAN for staffs and guests. These features not only provide high quality Wi-Fi access, but also make it easy for companies to share wireless connectivity without compromising security.

Moreover, the ZyXEL SBG3600-N/SBG3500-N Series has been designed to simplify the deployment and management when small businesses plan to build or expand the Wi-Fi network. SBG3600-N/SBG3500-N is with integrated WLAN controller functions capable of managing up to 10 Wi-Fi APs; this gives small businesses a quick flexible approach to meet the growing Wi-Fi demand.

Safe, reliable Virtual Private Network (VPN) connections
The ZyXEL SBG3600-N/SBG3500-N Series allows small businesses to establish stable VPN connections with partners and branch offices; road warriors and telecommuters can use IPSec as well as L2TP or PPTP VPN to safely access corporate networks without maintaining VPN software on their PCs. Designed with VPN HA features to ensure that the VPN connectivity is always on for the business needs.

Inclusive network management
The ZyXEL SBG3600-N/SBG3500-N Series offers two-level login privilege mechanism to differentiate user segments; and the Internet service providers can also define the policies for the limited accounts to easily manage them with the integrated profile database. It also provides TR-069 and simple network management protocols for service providers to conduct remote device management tasks.

Key Applications
## Specifications

### Hardware Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>SBG3600-N</th>
<th>SBG3600-NB</th>
<th>SBG3500-N</th>
<th>SBG3500-NB</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL</td>
<td>VDSL2/ADSL2+ 17a bonding, 2 x RJ-11 (DSL)</td>
<td>VDSL2/ADSL2+ 17a single line, 1 x RJ-45 (DSL)</td>
<td>VDSL2/ADSL2+ 17a bonding, 2 x RJ-11 (DSL)</td>
<td>VDSL2/ADSL2+ 17a single line, 1 x RJ-45 (DSL)</td>
</tr>
<tr>
<td>Ethernet WAN</td>
<td>RJ-45/SFP dual personality</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LAN port</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DMZ</td>
<td>V (LAN selectable)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>USB port</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3G/4G</td>
<td>Embedded LTE module</td>
<td>External mobile USB dongle supported</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### LTE Specifications

<table>
<thead>
<tr>
<th>Standard compliance</th>
<th>3GPP release 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating frequency</td>
<td>LTE Band 3/7/8/20</td>
</tr>
<tr>
<td>Data rate</td>
<td>100 Mbps DL within 20 MHz; 50 Mbps UL within 20 MHz</td>
</tr>
<tr>
<td>RF output power</td>
<td>-23 dBm</td>
</tr>
<tr>
<td>No. of antenna</td>
<td>2 antennas</td>
</tr>
<tr>
<td>Antenna gain</td>
<td>3 dBi</td>
</tr>
</tbody>
</table>

### System Capacity & Performance

- **SPI firewall throughput**: 800 Mbps
- **VPN throughput**: 40 Mbps
- **Max. concurrent IPSec**: 20
- **VLAN interface**: 16

### Wireless Specifications

<table>
<thead>
<tr>
<th>Standard compliance</th>
<th>802.11 b/g/n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless frequency</td>
<td>2.4 GHz</td>
</tr>
<tr>
<td>Radio</td>
<td>1</td>
</tr>
<tr>
<td>SSID number</td>
<td>4</td>
</tr>
<tr>
<td>Maximum transmit power</td>
<td>EU (ETSI) 2.4 GHz</td>
</tr>
<tr>
<td>No. of antenna</td>
<td>2 antennas</td>
</tr>
<tr>
<td>Antenna gain</td>
<td>3 dBi</td>
</tr>
<tr>
<td>Data rate</td>
<td>- 802.11 b/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps</td>
</tr>
<tr>
<td></td>
<td>- 802.11n: up to 300 Mbps in MCS15 (40 MHz; GI = 400 ns)</td>
</tr>
<tr>
<td>Receive sensitivity (2.4 GHz)</td>
<td>- 11 Mbps ≤ -76 dBm; 54 Mbps ≤ -65 dBm</td>
</tr>
<tr>
<td></td>
<td>- HT20 ≤ -64 dBm; HT40 ≤ -61 dBm</td>
</tr>
</tbody>
</table>

### Key Software Features

- **WAN load balancing/failover**: Yes
- **Virtual Private Network (VPN)**: Yes (IPSec, PPTP/L2TP over IPSec)
- **VPN failover/fallback**: Yes
- **Captive portal**: Yes
- **Access control list**: Yes
- **SNMP MIB II**: Yes
- **TR-069**: Yes

### Power Requirements

- **Power input**: 12 VDC, 2 A
- **Max. power consumption (watt)**: 15.3

### Physical Specifications

- **Rack mountable**: Yes
- **Included accessories**: Ethernet cable, DSL cable, Power adapter, Rack mounting kit

### Item

<table>
<thead>
<tr>
<th>Dimensions (WxDxH)(mm/in.)</th>
<th>242 x 170 x 36/9.53 x 6.69 x 1.42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg/lb.)</td>
<td>1.69/3.73</td>
</tr>
</tbody>
</table>

### Packing

<table>
<thead>
<tr>
<th>Dimensions (WxDxH)(mm/in.)</th>
<th>343 x 209 x 75/13.50 x 8.23 x 2.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg/lb.)</td>
<td>2.43/5.36</td>
</tr>
</tbody>
</table>

### Environmental Specifications

- **Operating Temperature**: 0°C to 40°C/32°F to 104°F
- **Humidity**: 10% to 95% (non-condensing)
- **Storage Temperature**: -30°C to 70°C/-22°F to 158°F
- **Humidity**: 10% to 95% (non-condensing)

### Others

- **MTBF (hr)**: 300,000

---

*SPI firewall throughput is based on RFC 2544 (1,518-byte UDP packets)  **VPN throughput is based on RFC 2544 (1,424-byte UDP packets)
Features

Software Features

High Availability WAN
- Fixed-line WAN interface options: VDSL, Ethernet/SFP
- Mobile WAN interface options:
  - SBG3500-N: 3G or 4G dongle supported
  - SBG3600-N: Embedded LTE module, 3G dongle supported
- User configurable multi-WAN load balancing with one WAN for failover/fallback

LTE (SBG3600-N)
- Up to 200 active users in a cell (5 MHz)
- Less than 5 ms user-plane latency
- Enhanced support for end-to-end QoS
- Supports NAT router mode
- DHCP client/server, forwarding
- DNS proxy, DDNS
- Multiple APN
- DNS, DDNS
- Supports NAT router mode
- Enhanced support for end-to-end QoS
- Less than 5 ms user-plane latency
- Up to 200 active users in a cell (5 MHz)

Networking
- NAT, IPv6 support
- PPTP/IPSec/L2TP pass through
- NAT, NAT ALGs
- Firewall & Security
  - Full cone NAT/Symmetric NAT/Restrict Cone NAT, NAT ALGs
  - 20,000 NAT sessions supported
  - Configurable DMZ
  - PPTP/IPSec/L2TP pass through
  - PAP/CHAP/MS-CHAP v1 and v2
  - Stateful packet inspection
  - DoS/DDoS protection
  - URL/key word filtering
  - Access control: up to 256 ACL rules
  - Directional ACL rule support

USB
- FTP file sharing
- Supported file system: FAT16/32, EXT2/3
- Support mobile broadband dongle
- Support WAN package update
- 3G budget control

Wi-Fi Specifications
- IEEE 802.11n compliance, backward compatible with 802.11 b/g
- Dynamic auto channel selection
- WPS on/off configuration in Web GUI
- Multiple number of SSID: Up to 4
- Per-SSID VLAN binding
- WEP data encryption 64/128 bit
- WPA/WPA-PSK with TKIP & AES security type
- WPA2/WPA2-PSK with TKIP & AES security type
- IEEE 802.1x (EAP-MD5, TLS and TTLS)
- 32 MAC filter
- Client connection: A maximum of 32 clients simultaneously connect to the AP
- Adjustable WLAN output power (via CLI, XML)
- Captive portal

WLAN Management
- ZyXEL AP Controller (APC) Lite compliant
- Client RSSI threshold to prevent sticky clients
- Wireless Layer 2 isolation
- RADIUS authentication
- Wi-Fi Multimedia (WMM) wireless QoS
- CAPWAP discovery protocol
- ZyXEL Wireless Optimizer (ZWO) AP planning

System Management
- Two-tier log in
- Dual image firmware protection
- Text based configuration (XML based)
- Support TR-069, TR-098, TR-111, SNMP v1, and v2c
- Syslog
- User management (user data base/profile)

Certification
- CE Certified
  - EMC/RF
  - Safety
  - ErP
  - RoHS 2

Access Point Compatibility List

<table>
<thead>
<tr>
<th>Series</th>
<th>NWA3000-N Series</th>
<th>NWA5000 Series</th>
<th>NWA5120 Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Unified Pro Access Point</td>
<td>Managed Access Point</td>
<td>Unified Access Point</td>
</tr>
<tr>
<td>NWA3160-N</td>
<td>NWA5160-N</td>
<td>NWA5121-N</td>
<td></td>
</tr>
<tr>
<td>NWA3560-N</td>
<td>NWA5560-N</td>
<td>NWA5121-N</td>
<td></td>
</tr>
<tr>
<td>NWA3550-N</td>
<td>NWA5550-N</td>
<td>NWA5123-N</td>
<td></td>
</tr>
</tbody>
</table>

Functions

Central management
- Yes

Auto provisioning
- Yes

Data forwarding
- Local bridge

For more product information, visit us on the web at www.ZyXEL.com

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