



ZYXEL

Your Networking Ally

SD-WAN

Stay ahead of your WAN solutions

Stay Ahead of Your WAN Solution

SD-WAN
Solution Brief

Improve your WAN quality while lowering networking costs



Zyxel Nebula SD-WAN solution

Today there are increasing amount of enterprises with branch offices that are consuming more WAN bandwidth as they are collaborating online applications such as: Skype, WebEx, and many more! As more Internet communication and cloud-based application are adopted, it becomes a critical challenge for how to efficiently optimize WAN bandwidth, manage Internet application usage, and secure the connection between Branches, HQ, and Clients. Here at Zyxel, we believe that this type of technology should be for everyone. We have taken this enterprise approach to develop and tailor a

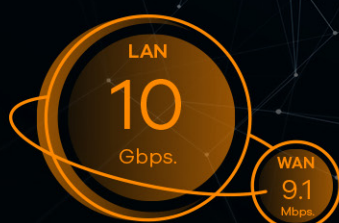
solution to fit the SMB market as well as cater toward Enterprise clients. This approach will vastly improve reliability and performance over traditional VPN (Site to Site) networks. Combining the flexibility of cloud-based technology and its high-speed deployment benefit, Zyxel SD-WAN solution helps IT administrators simplify branch network deployment. Designed to optimize Internet connectivity and applications, the Zyxel SD-WAN also enables ZyWALL VPN Series to support online application growth, efficiency WAN bandwidth usage and increase network agility.

Challenges for SMBS

- Greater reliability on Cloud including private cloud
- Reliable Internet with low-latency
- Faster connectivity and WAN performance improvement
- Increased security with greater scalability and reduced costs (installation and ongoing connectivity)

Challenges for VARs & MSPs

- Maximise on what connectivity is available
- Get easier control over deployment and management
- Reduce complexity, especially routing
- Remove bottlenecks from clients' networks
- Simplify network diversity (LTE/VDSL/Leased Line)
- Gain control over traffic shaping of bandwidth and applications



Fast LAN but slow WAN



Growing Branches & Cloud Usage



Lower Cost Higher Throughput

What Nebula SD-WAN can do?

Nebula Orchestrator Management

Easily switch between standalone gateway mode and our SD-WAN cloud management platform with Nebula Orchestrator, obtain the benefit from a centralized management for site to site connectivity. Nebula Orchestrator will continually measure and monitor all connections to establish the best quality connection. If the best path is better on another connection, it will seamlessly move the connection to give clients the best experience. Remote control and monitoring function from Nebula Orchestrator gives you more flexibility and lowers operation costs. Multi-tier management structure consisting of three level topologies includes Group, Organization and Site, allow configuration functions at each level to automate and simply management.

Cost Effective

SD-WAN improves the performance without extra bandwidth investments along with rock solid reliability of WAN Internet connections so that costly frame relay or MPLS lines are not required.

Greater Agility

SD-WAN is quick to deploy whilst MPLS may take months to install. This means that SD-WAN is lowering the complexity of running a network while simultaneously improving agility and efficiency.



Nebula SD-WAN license & services

Zyxel VPN50/VPN100/VPN300 will be bundled with a free 1 year SD-WAN license. Full features of SD-WAN license include: Orchestrator (cloud or on-premise), Dynamic Path Selection, WAN Optimization, Zero Touch Provision, Auto-VPN, Monitoring (Statistics) and Log. Customers who have already purchased can also receive a free one year SD-WAN license by downloading the new firmware update. Businesses can renew the SD-WAN Pack after the bundled license expires, its adaptation has been answer for most Enterprise deployments to

not only improve site to site connectivity but also reduce overheads often associated with traditional methods like MPLS and T1 ISP services. Alternatively, those seeking orchestrated management without advanced SD-WAN can revert to the Management Pack License. This pack uses Nebula Orchestrator to deliver zero-touch provisioning, VPN, firewall, and more. This excludes some SD-WAN functionality and other features, such as Application Patrol and Content Filtering.

License Packs

License Service	Nebula Orchestrator Basic (Free)	Nebula Orchestrator Management
Nebula Orchestrator	Yes	Yes
Dynamic Path Selection (DPS)	-	Yes
WAN Optimization	-	Yes
Content Filtering	-	Yes
Geo Enforcer	-	Yes
Zero Touch Provisioning (ZTP)	Email/APP	Email/APP/SMS
Auto VPN (Dynamic Mesh VPN)	Yes	Yes
Other (VPN/Firewall function)	Yes	Yes
Monitoring Page Update Frequency	Every 10 min	Every 3 min (3 sec Live Mode)
Storage of Configuration Log	7 days	13 months
Monitoring Data	1 day	30 days

Key features of SD-WAN



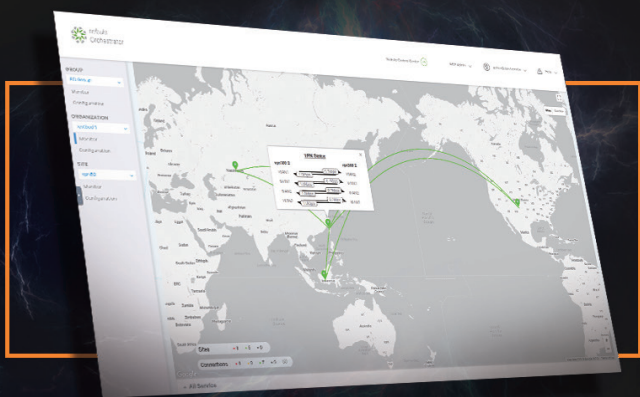
Zero Touch Provisioning (ZTP)

Deploy new branch gateway in minutes, reducing operational time and expense. Take the hassle out of remotely deploying gateways that often need more settings than other devices in their initial configuration. Setup the first network rule within Nebula Orchestrator and then distribute the network settings via our Zero Touch Provisioning (email, SMS or USB) to all subsidiaries/sites through the cloud.



WAN Optimization

WAN Optimization technology increases data transfer efficiencies across WAN, giving reliable WAN quality, optimizing WAN traffic to improve WAN performance between branch offices and corporate headquarters. Each Site to Site connection is optimized by utilising Zyxel's WAN Optimization and combines it with Application Intelligence engine, which identifies more than 3000 protocols and applications, prioritize application by behaviour and user expectation.





Dynamic Mesh VPN

Allow gateways to establish dynamic direct VPN tunnels when traffic flow requests are the bottlenecks in the network. Effortlessly create site-site and client-site VPNs with our Auto VPN (site-to-site; client-to-site) function. Simplify the deployment to client devices with our simple three step process to get remote users connected hassle free. Auto VPN utilizes the native clients on Windows, Mac OS and iOS devices, allowing for an effortless software free installation process for client to site connectivity.



Dynamic Path Selection

Dynamic Path Selection real-time monitors path quality and automatically route mission critical applications to best-quality transmission path, which based on detected network latency, jitter, and packet drop status.



Gain Control over Security

Manage security for all sites via organization profiles to simplify security across all your sites, including: Firewall Rules, Geo Enforcer, Content Filtering and Application Patrol.

• Geo Enforcer

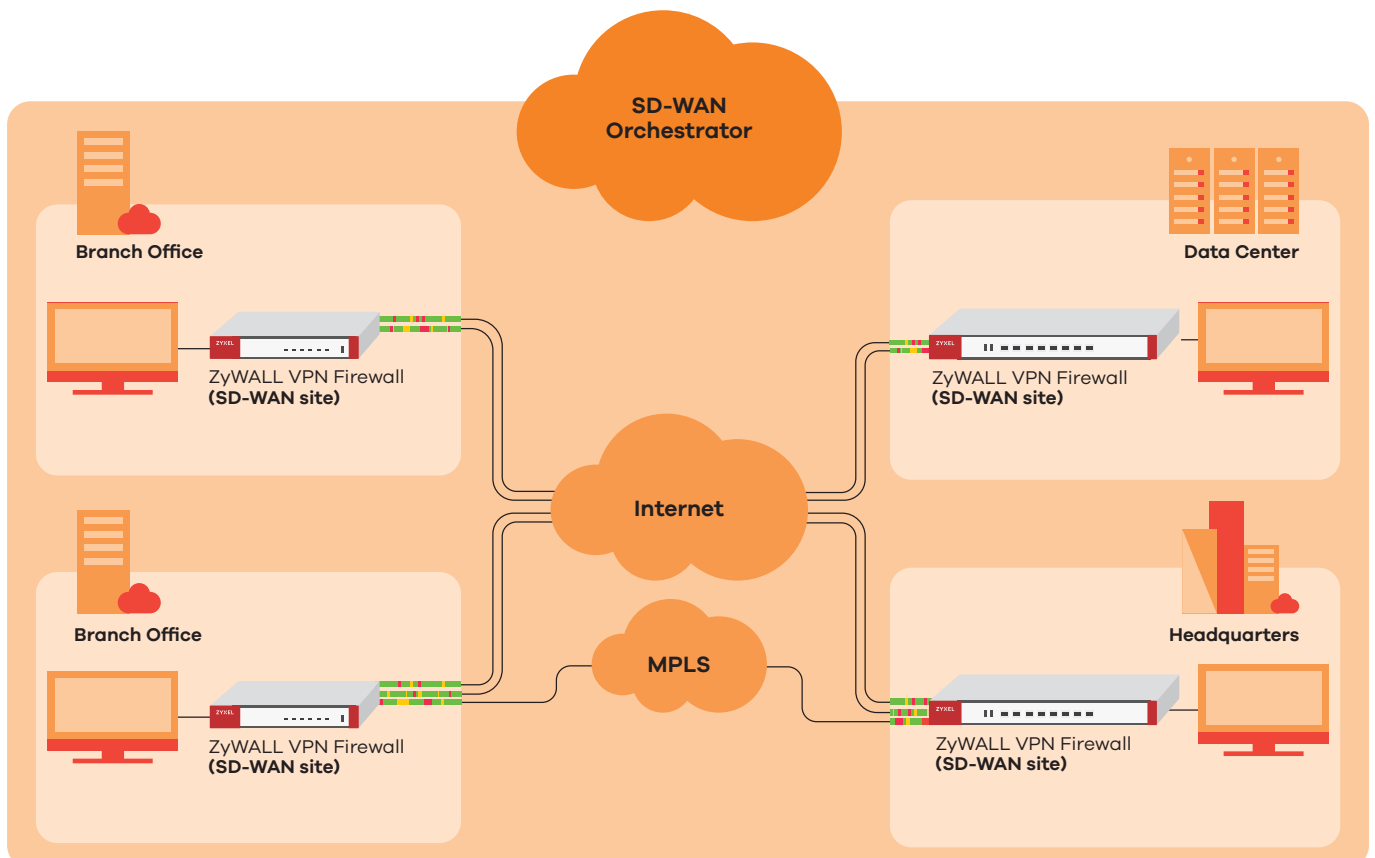
Geo Enforcer is an up-to-date mapping, which identifies the incoming traffic of geographical regions by examining its IP address. Enabling you the ability to filter traffic to and from specific locations.

• Content Filtering

We protect your business from undesirable access to malicious, hacked or inappropriate websites with technologies such as URL filtering, HTTPS domain filter, safe search and Geo IP blocking.

• Application Patrol

Block external threats and manage traffic by applications. Prioritize, throttle and block applications to boost productivity and prevent bandwidth abuse.



SD-WAN supported hardware

VPN50

Includes 1 Year

Nebula Orchestrator SD-WAN & Security Services

- **SD-WAN Interfaces**
4 x LAN/DMZ (1 Configurable)
1 x WAN, 1 x SFP
- **VPN Throughput**
150 Mbps
- **SPI Firewall Throughput**
800 Mbps



VPN100

Includes 1 Year

Nebula Orchestrator SD-WAN & Security Services

- **SD-WAN Interfaces**
4 x LAN/DMZ (1 Configurable)
2x WAN, 1 x SFP
- **SPI Firewall Throughput**
2,000 Mbps
- **VPN Throughput**
500 Mbps



VPN300




Includes 1 Year

Nebula Orchestrator SD-WAN & Security Services

- **SD-WAN Interfaces**
7 x GbE (Configurable)
1 x SFP
- **SPI Firewall Throughput**
2,600 Mbps
- **VPN Throughput**
1,000 Mbps



Feature matrix

Model	ZyWALL VPN50 (SBs)		ZyWALL VPN100 (SMBs)		ZyWALL VPN300 (SMBs)	
Mode	Standalone	Nebula SD-WAN	Standalone	Nebula SD-WAN	Standalone	Nebula SD-WAN
						
Interfaces	4 x LAN/DMZ (GbE), 1 x WAN (GbE), 1 x SFP		4 x LAN/DMZ (GbE), 2 x WAN (GbE), 1 x SFP		7 x GbE (Configurable), 1 x SFP	
Hardware Specifications						
USB3.0 ports	1		2		2	
Console port	Yes (RJ-45)		Yes (DB9)		Yes (DB9)	
Rack-mountable	-		Yes		Yes	
System Capacity & Performance*1						
SPI firewall throughput (Mbps)*2	800	800	2,000	2,000	2,600	2,600
VPN throughput (Mbps)*3	150	150	500	500	1,000	1,000
Max. TCP concurrent sessions*4	400,000	400,000	800,000	800,000	2,000,000	2,000,000
Max. concurrent IPSec VPN tunnels*5	50	50	100	100	300	300
Concurrent SSL VPN users (default/max.)*6	10/50	-	30/200	-	50/300	-
VLAN interface	8	64	16	64	64	64
Concurrent device logins (default/max.)*6*7	64	-	200/300	-	500/800	-
WLAN Management						
Managed AP number (default/max.)*6	4/36	-	4/68	-	-	-
Key Features						
VPN	IKEv2, IPSec, SSL, L2TP/IPSec	IPSec, L2TP/ IPSec	IKEv2, IPSec, SSL, L2TP/IPSec	IPSec, L2TP/ IPSec	IKEv2, IPSec, SSL, L2TP/IPSec	IPSec, L2TP/ IPSec
SSL (HTTPS) inspection	-	-	Yes	-	Yes	-
Appication Patrol	-	Yes, (bundle 1 year License)	-	Yes, (bundle 1 year License)	-	Yes, (bundle 1 year License)
Content filtering **6*8	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)
Geo Enforcer*6	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)	Yes, (bundle 1 year License)
EZ Mode	Yes	-	-	-	-	-
Hotspot Management *6	Yes	-	Yes	-	Yes	-
Ticket printer support*9/ Support Q'ty (max.)	-	-	Yes (SP350E) /10	-	Yes (SP350E) /10	-
Amazon VPC	Yes	-	Yes	-	Yes	-
Facebook WiFi	Yes	-	Yes	-	Yes	-
Device HA Pro*10	-	-	Yes	-	Yes	-
SD-WAN Features*11						
Dynamic Path Selection	-	Yes	-	Yes	-	Yes
WAN Optimization	-	Yes	-	Yes	-	Yes
Zero Touch Provision(ZTP)	-	Yes	-	Yes	-	Yes
Auto VPN	Site-to-Site	Yes	-	Yes	-	Yes
	Client-to-Site	Yes	-	Yes	-	Yes
App Patrol	-	Yes	-	Yes	-	Yes
Content Filter	-	Yes	-	Yes	-	Yes
Geo Enforcer (GeoIP)	-	Yes	-	Yes	-	Yes
Management	-	Yes	-	Yes	-	Yes
Monitor/ Log Storage	-	Yes	-	Yes	-	Yes
Power Requirements						
Power input	12 V DC, 2.0 A max.		12 V DC, 2.5 A max.		12 V DC, 4.17 A max.	
Max. power consumption (watt)	12		13.3		24.1	
Heat dissipation (BTU/hr)	40.92		45.38		82.23	
Physical Specifications						
Item	Dimensions	216 x 143 x 33/	272 x 187 x 36/		300 x 188 x 44/	
	(WxDxH)(mm/in.)	8.50 x 5.63 x 1.30	10.7 x 7.36 x 1.42		16.93 x 7.4 x 1.73	
	Weight (kg/lb.)	0.88/1.94	1.4/3.09		1.65/3.64	
Packing	Dimensions	276 x 185 x 98/	427 x 247 x 73/		351 x 152 x 245/	
	(WxDxH)(mm/in.)	10.87 x 7.28 x 3.86	16.81 x 9.72 x 2.87		13.82 x 5.98 x 9.65	
	Weight (kg/lb.)	1.41/3.11	2.23/4.91		2.83/6.24	
Included accessories	• Power adapter • RJ-45 - RS-232 cable for console connection		• Power adapter • Rack mounting kit (optional, by regions)		• Power adapter • Power cord • Rack mounting kit	

Feature matrix

Model	ZyWALL VPN50 (SBs)		ZyWALL VPN100 (SMBs)		ZyWALL VPN300 (SMBs)	
Mode	Standalone	Nebula SD-WAN	Standalone	Nebula SD-WAN	Standalone	Nebula SD-WAN



Environmental Specifications						
Operating environment	Temperature	0°C to 40°C /32°F to 104°F	0°C to 40°C/32°F to 104°F	0°C to 40°C/32°F to 104°F	0°C to 40°C/32°F to 104°F	0°C to 40°C/32°F to 104°F
	Humidity	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)
Storage environment	Temperature	-30°C to 70°C/-22°F to 158°F	-30°C to 70°C/-22°F to 158°F	-30°C to 70°C/-22°F to 158°F	-30°C to 70°C/-22°F to 158°F	-30°C to 70°C/-22°F to 158°F
	Humidity	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)
MTBF (hr)		44000	529,688.2	529,688.2		
Certifications						
EMC		FCC Part 15 (Class B), IC, CE EMC (Class B), RCM, BSMI	FCC Part 15 (Class B), CE EMC (Class B), C-Tick (Class B), BSMI	FCC Part 15 (Class A), CE EMC (Class A), C-Tick (Class A), BSMI		
Safety		BSMI, UL	LVD (EN60950-1), BSMI	LVD (EN60950-1), BSMI		

Note:

- *: The matrix with firmware ZLD 4.31 and OPAL BE 1.12 or later.
- *1: Actual performance may vary depending on network conditions and activated applications.
- *2: Maximum throughput based on RFC 2544 (1,518-byte UDP packets).
- *3: VPN throughput measured based on RFC 2544 (1,424-byte UDP packets).
- *4: Maximum sessions measured using the industry standard IXIA IxLoad testing tool.
- *5: Including Gateway-to-Gateway and Client-to-Gateway.
- *6: With Zyxel service license to enable or extend the feature capacity.
- *7: This is the recommend maximum number of concurrent logged-in devices.
- *8: SafeSearch function in Content Filtering need to enable SSL inspection firstly and not for small business.
- *9: With Hotspot Management license support.
- *10: ZyWALL VPN100 or above supports Device HA Pro once registered.
- *11: After device upgrading firmware to SD-OS v10.01 and was transformed to SD-WAN mode.
- *12: After upgrading firmware to SD-OS v10.02 or after.

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Watch video tutorials and learn how to setup with Zyxel security products.

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License Finder

Find out different services and licenses to meet your business needs.

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Zyxel Blog

Read articles and learn how to apply with Zyxel security products.

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