ZYXEL
NETWORKS

Unlock networking possibilities with cloud: cybersecurity

January 2026

Nebula cloud networking
Solution guide

hello nebula.

Overview

The Nebula cloud networking and management solution provides centralized control and visibility over all Nebula wired, wireless, security and mobile router hardware – all without the cost and complexity of on-site control equipment or overlay management systems. With a comprehensive product portfolio that can be centrally-managed from the cloud, Nebula offers simple, intuitive and scalable management for all networks.

Highlights

- Intuitive, automated network management interface with continuous feature updates that eliminate training and labor for network implementation, maintenance and support

- Zero-touch provisioning, built-in-multi-tenant, multi-site network management tools accelerate deployment of large networks

- Centralized, unified and on-demand control as well as visibility that reduces additional hardware and software expense

- Free cloud management for the life of the product without the need for ongoing costs

- Access points and switches with NebulaFlex Pro, cybersecurity (UTM) devices and Nebula 5G routers are sold bundled with a Pro Pack license so you can experience advanced cloud management features

- A comprehensive networking product portfolio from a single vendor ensures better product compatibility

- Per-device licensing model with flexible subscriptions provides rich diversity and high flexibility for customers of all sizes

Introduction to Nebula cloud-managed networks

Nebula's networking and security products, including access points, switches, security firewalls and 5G routers are purpose-built for cloud management. They break tradition and come with easy management, centralized control, auto-configuration, real-time web-based diagnostics, remote monitoring and more.

Through Nebula cloud services, firmware and security signature updates are delivered seamlessly, while secure VPN tunnels can be established automatically between different branches over the web with just a few clicks. Based on a secure infrastructure, Nebula is designed with fault-tolerant properties that enable local networks to keep operating during WAN downtimes.

Nebula cloud-managed networking introduces an affordable, effortless approach for network deployments with high security and scalability to provide complete control over Nebula devices and users.

Nebula cloud-managed networking architecture

Nebula provides a networking paradigm for building and managing networks over the internet in the Software as a Service (SaaS) model. SaaS is defined as a way of delivering software for users to access via the internet rather than local installation. In the Nebula architecture, network functions and management services are pushed to the cloud and delivered as a service that provides instant control to the entire network without wireless controllers and overlay network management appliances.

All Nebula devices are built from the ground up for cloud management with the capability to communicate with Nebula's cloud control center through the internet. This TLS-secured connectivity between hardware and the cloud provides network-wide visibility and control for network management using the minimal bandwidth.

Over the cloud, thousands of Nebula devices around the world can be configured, controlled, monitored and managed under a single pane of glass. With multi-site network management tools, businesses are allowed to deploy new branches of any size, while administrators are able to make policy changes any time from a central control platform.

Harnessing the power of AI

AI is transforming product and service development, playing a crucial role in enhancing capabilities and efficiency. In the Nebula ecosystem, AI strengthens its ability to support the growth of its administrators.

Zyxel Networks has long integrated AI into its solutions, collecting and analyzing data from Nebula-managed devices worldwide to automate network performance and security optimization. This process has created a dynamic knowledge base that powers Zyxel Networks' WiFi access points, switches and security appliances. These devices are designed to adapt seamlessly to changing network conditions and workplace environments, ensuring maximum reliability, throughput and protection.

By delivering precise insights and advanced recommendations, AI swiftly identifies potential issues and facilitates the fine-tuning of configurations, reducing complexity and ensuring consistent network performance, saving administrators valuable time.

Incorporating AI into the Nebula framework reinforces its position as a comprehensive, cloud-based solution for efficient and scalable network management.

AI with Intent

Intent is an innovative AI-driven tool designed to enhance the way users interact with Nebula. Integrated into the Nebula platform, Intent enables natural language queries, allowing administrators to ask straightforward questions such as "How's my network today?" or "How do I set up a new wireless network?" and receive detailed responses.

Intent leverages Nebula's robust architecture to deliver immediate and intuitive assistance, reducing the need for extensive technical expertise. As part of an evolving knowledge base, Intent continuously refines its capabilities, offering increasingly accurate guidance on network configuration, device management and overall system performance.

With its dynamic, cloud-driven approach, Intent represents a powerful step forward in simplifying network management and empowering Nebula administrators to achieve seamless operational efficiency.

Nebula Control Center

Our Nebula Control Center (NCC) offers a powerful insight into distributed networks. Its intuitive and web-based interface automatically and continuously illustrates an instant view and analysis of network performance, connectivity and status. Integrated with organization-wide and site-wide management tools, Nebula provides quick and remote access for administrators to ensure the network is up and performing efficiently.

The NCC is also engineered with a number of security tools that provide optimal protection to networks, devices and users. They also deliver the needed information to enforce security and enhance control over the entire Nebula network.

Highlights

- Responsive web design and intuitive user interface with light and dark modes
- Multi-tenant and multi-site view and management
- First-time setup wizard
- Role-based administration privileges
- Real-time and historical monitoring/reporting
- Granular device-based information and troubleshooting tools
- Rich site-wide management tools
- Site-based auto and smart configuration tools
- Powerful organization-wide management tools
- Configuration changing alerts
- Misconfiguration protection against disconnecting the NCC
- Login and configuration auditing
- Flexible firmware management
- Multi-lingual management interface

Some features are not included within the free NebulaFlex Pack. Please refer to the license tables.

Cybersecurity

Cybersecurity devices

Zyxel Networks' cybersecurity (UTM) devices are Nebula cloud managed and further optimize Nebula with holistic security and protection for SMB networks. Our cybersecurity devices are capable of authenticating individuals and devices for all scenarios, especially for remote applications. This enables them to extend and secure your distributed network anywhere, anyhow, easily and affordably. Our cybersecurity devices deliver high performance, ensure comprehensive protection as a self-evolving solution and synchronize your security to fit into all kinds of networks.

Our integrated cloud threat intelligence will automatically stop threats at the network edge by blocking or quarantining, preventing damage to the network. We also provide up-to-the-minute protection with detailed reporting on investigations, threat preventions, active monitoring and high visibility of network activities in today's ever-changing, ever-more-complex network environments.

Highlights

- Higher precision of detection and multi-layered protection to effectively uncover threats

- Best practices for remote access with secure WiFi and VPN management, consolidating and ensuring the same network control and security across multiple sites

- Enhanced security with two-factor authentication (2FA) network access, allowing quick and easy verification of users' identities through edge devices

- High assurance multi-layered protection including IP/URL/DNS reputation filtering, app patrol, web filtering, anti-malware and IPS

- Smart Sync for seamless real-time synchronization between cloud and on-premises protection, maintaining unified security even when cloud access isn't available

- Zero-touch provisioning and pre-configured settings in Nebula, so your cybersecurity device is fully set up and ready before deployment

- Real-time configuration and management through Nebula for easy control and monitoring across your network

USG FLEX 500H

Security Vendor of the Year

USG FLEX 50H

USG LITE 60AX

USG FLEX 700H

USG FLEX H series

Some features are not included within the free NebulaFlex Pack. Please refer to the license tables.

Tolly test reports

In 2025, Tolly – one of the world's leading providers of independent validation and verification services for vendors of ICT products, component and services – conducted a comprehensive evaluation (report #225150) comparing the anti-malware performance of our USG FLEX H series (USG FLEX 100H and USG FLEX 500H) and Ubiquiti's Dream Machine Special Edition (UDM SE). They also conducted a second test (report #225151) comparing the anti-malware efficacy of our USG FLEX 100H with SonicWALL's TZ270.

The findings were clear and consistent: the USG FLEX H models delivered significantly stronger threat-prevention capabilities, blocking an average of almost 92% of malware tests. In contrast, the Dream Machine Special Edition averaged 2% during the testing period.

For the USG FLEX H devices, Tolly had applied the Gold UTM license pack and anti-malware protection, enabling features such as sandboxing, intrusion detection, application control, content filtering and anti-spam. For Ubiquiti's device, they enabled CyberSecure by Proofpoint, Cloudflare feature and Intrusion Prevention. Signature update was on the test date in 2025 and the detection mode was set to 'Notify and Block'. All active detections categories were enabled other than ICMP as no ICMP test traffic was included.

> 66 **The anti-malware efficacy of the Zyxel USG FLEX H-Series was significantly higher than that of the Ubiquiti Dream Machine (UDM).**
>
> Tolly test report
> #225150, 2025

Anti-malware efficacy (detection and blocking rate)

In total, 6,426 malware samples were tested over a 14-day period in July 2025.

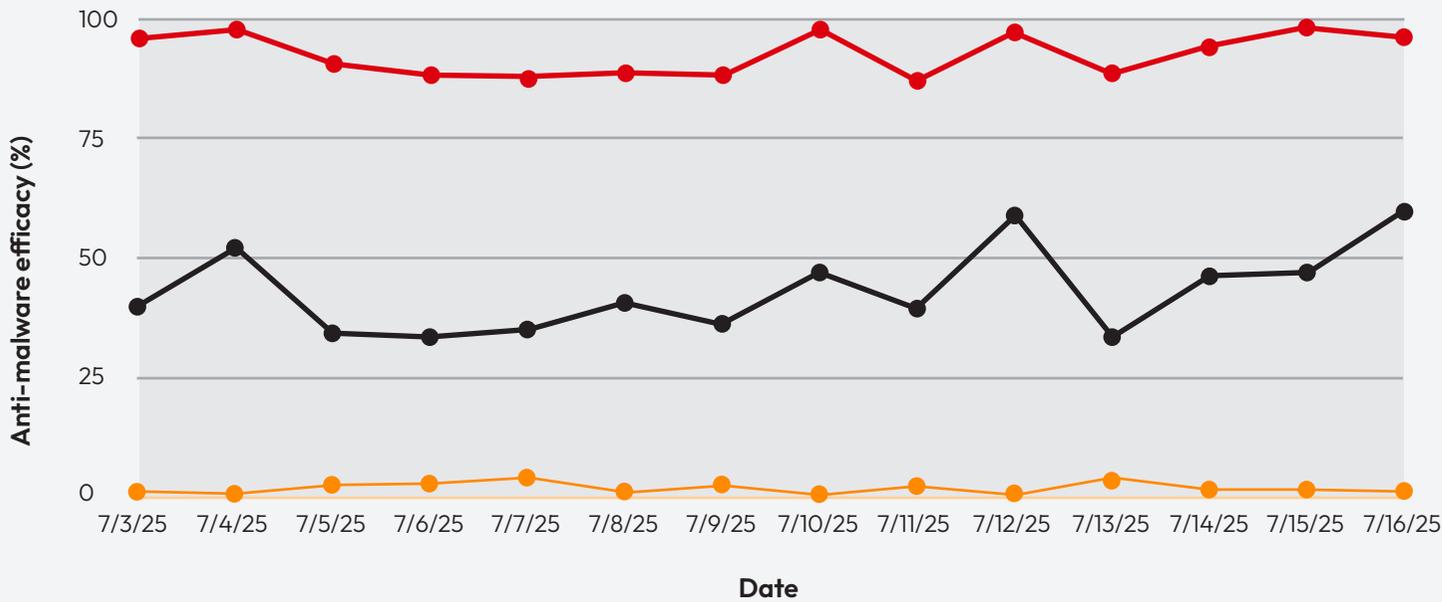|	USG FLEX 500H	USG FLEX 100H	Ubiquiti UDM SE	SonicWALL TZ270
Total number of blocked malware samples	5,886	5,902	131	2,687
% blocked	91.6%	91.8%	2.0%	41.8%

The second Tolly test compared the anti-malware efficacy of the USG FLEX 100H with SonicWALL TZ270 but this time also evaluated the subscription license. Tolly assessed the USG FLEX 100H firewall with the Gold Security UTM Bundle license against the SonicWall TZ270 with the Advanced Protection Security Suite license in terms of anti-malware efficacy, URL filtering efficacy, prices and other key features.

Over the same test period with the same number of malware samples, the results were again convincing. The SonicWALL TZ270 blocked nearly 42% of the samples in comparison to almost 92% by the USG FLEX 100H.

Tolly test reports (continued)

Anti-malware efficacy (detection and blocking rate) results

Anti-malware efficacy (%)

100
75
50
25
0

7/3/25 7/4/25 7/5/25 7/6/25 7/7/25 7/8/25 7/9/25 7/10/25 7/11/25 7/12/25 7/13/25 7/14/25 7/15/25 7/16/25

Date

- Zyxel USG FLEX H series*
- Ubiquiti Dream Machine Special Edition (UDM SE)
- SonicWall TZ270

* Tolly tested USG FLEX 100H and USG FLEX 500H; the results were almost identical.
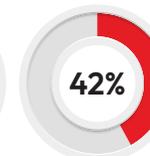Source: Tolly, 2025

Anti-malware efficacy

Detection and blocking rate

92% Zyxel
42% SonicWall
2% Ubiquiti

License costs

Cost of Zyxel license vs SonicWall license

58% cheaper 1-year license
61% cheaper 2-year license

Tolly test reports (continued)

The #225151 test also reviewed malicious URL detection rates. With an average detection rate of nearly 85%, the Zyxel USG FLEX 100H performed significantly better than the SonicWall TZ270, which achieved an average detection rate of 27.1%.

Tolly's analysis also highlighted a significant cost advantage for the USG FLEX 100H, with renewal prices 58% lower for a one-year license and 61% lower for a two-year license.

Both devices offer comprehensive security features, but the USG FLEX 100H supports IP reputation filtering for email and other services, blocking botnet command-and-control traffic and malicious website IPs. The SonicWall TZ270 limits IP reputation functionality to email anti-spam protection. Additionally, the SonicWall TZ270 requires a separate license for support and cloud management, whereas these capabilities are included at no extra cost with Zyxel's Gold Security UTM bundle.

> **Zyxel USG FLEX 100H provided higher anti-malware and URL filtering efficacy with a lower subscription price.**
>
> **Tolly test report**
> #225151, 2025

VIEW THE FULL REPORTS

- Zyxel USG FLEX H-Series vs. Ubiquiti Dream Machine Firewall/gateway Anti-malware Efficacy Evaluation:
  www.tolly.com/publications/225150

- Zyxel USG FLEX 100H vs. SonicWall TZ270 Firewall Anti-malware Efficacy and Subscription License Evaluation:
  www.tolly.com/publications/225151

	Model: USG LITE 60AX	Model: USG FLEX 50H/HP	Model: USG FLEX 100H/HP
SPI firewall throughput (Mbps)[*1]	2,000	2,000	4,000
VPN protocol – VPN throughput (Mbps)[*2]	IKEv2, IPSec – 300	IKEv2, IPSec, SSL – 500	IKEv2, IPSec, SSL – 900
IPS/UTM (Anti-malware & IDP) throughput (Mbps)[*3]		1,000/600	1,500/1,000
Max. concurrent Ipsec/SSL VPN tunnels[*5]	5/-	20/15	50/25
Recommended site-to-site IPSec VPN tunnels	3	5	20
Sandboxing, Anti-malware, IPS, Application patrol, Web filtering, SecuReporter Premium, SPS, SSL Inspection, 2-factor authentication, Geo Enforcer, Collaborative D&R, Device insight[*6]	Malware prevention Intrusion Blocker Dark Web Blocker (TOR)	Yes	Yes
Reputation filter		Yes	Yes
Secure WiFi		Yes	Yes
Interface/Ports	2x 2.5mGig ethernet Mbps (WAN+LAN) 4x 1GbE ethernet WiFi AP 802.11 ax	5x 1GbE ethernet	8x 1GbE ethernet
PoE+ support (802.3at)[*7]	–	Max 30W	Max 30W
Datasheet			

This matrix with firmware uOS1.31 or later. Actual performance may vary depending on system configuration, network conditions and activated applications.
*1: Maximum throughput based on RFC 2544 (1,518-byte UDP packets).
*2: VPN throughput measured based on RFC 2544 (1,424-byte UDP packets).
*3: Anti-malware (with Express mode) and IPS throughput measured using the industry standard HTTP performance test (1,460-byte HTTP packets). Testing done with multiple flows.

*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: On USG Flex 50/100/200 PoE is available only with the related HP model.

	Model: USG FLEX 200H/HP	Model: USG FLEX 500H	Model: USG FLEX 700H
SPI firewall throughput (Mbps)[1]	6,500	10,000	15,000
VPN protocol – VPN throughput (Mbps)[2]	IKEv2, IPSec, SSL – 1,200	IKEv2, IPSec, SSL – 2,000	IKEv2, IPSec, SSL – 3,000
IPS/UTM (Anti-malware & IDP) throughput (Mbps)[3]	2,500/1,800	4,500/3,000	7,000/4,000
Max. concurrent Ipsec/SSL VPN tunnels[5]	100/50	300/150	1,000/500
Recommended site-to-site IPSec VPN tunnels	50	150	300
Sandboxing, Anti-malware, IPS, Application patrol, Web filtering, SecuReporter Premium, SPS, SSL Inspection, 2-factor authentication, Geo Enforcer, Collaborative D&R, Device insight[6]	Yes	Yes	Yes
Reputation filter	Yes	Yes	Yes
Secure WiFi	Yes	Yes	Yes
Interface/Ports	2x 2.5mGig ethernet 6x 1GbE ethernet	2x 2.5mGig ethernet 2x 2.5mGig/PoE+ ethernet 8x 1GbE ethernet	2x 2.5mGig ethernet 2x 10mGig /PoE+ ethernet 8x 1GbE ethernet 2x 10G SFP+
PoE+ support (802.3at)[7]	Max 30W	Max 30W	Max 30W
Datasheet			

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Thinking sustainability

Corporate sustainability is integral to Zyxel Group's mission, earning us accolades since 2009 for sustainable products and corporate responsibility. Our strategy focuses on three dimensions: Green Supply Chain, Green Operations and Green Products. Collaborating with employees, customers and suppliers, we drive environmental initiatives for a sustainable future.

Key initiatives include the Product Carbon Footprint Inventory Plan, which incorporates life cycle thinking into product design to minimize environmental impacts.

Additionally, our advanced carbon calculation platform and assessment tools, launched in 2021, provide data-driven insights to support our net-zero emissions commitment.

To complement these efforts, Zyxel Networks' green marketing strategy combines e-commerce platforms with physical store integration, offering sustainable solutions through Zyxel Marketplace and the European Zyxel Store.

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01/01/2026