



## The Case for Cloud Network Management

Is it right for your organization?



nebula

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## The Case for Cloud Network Management

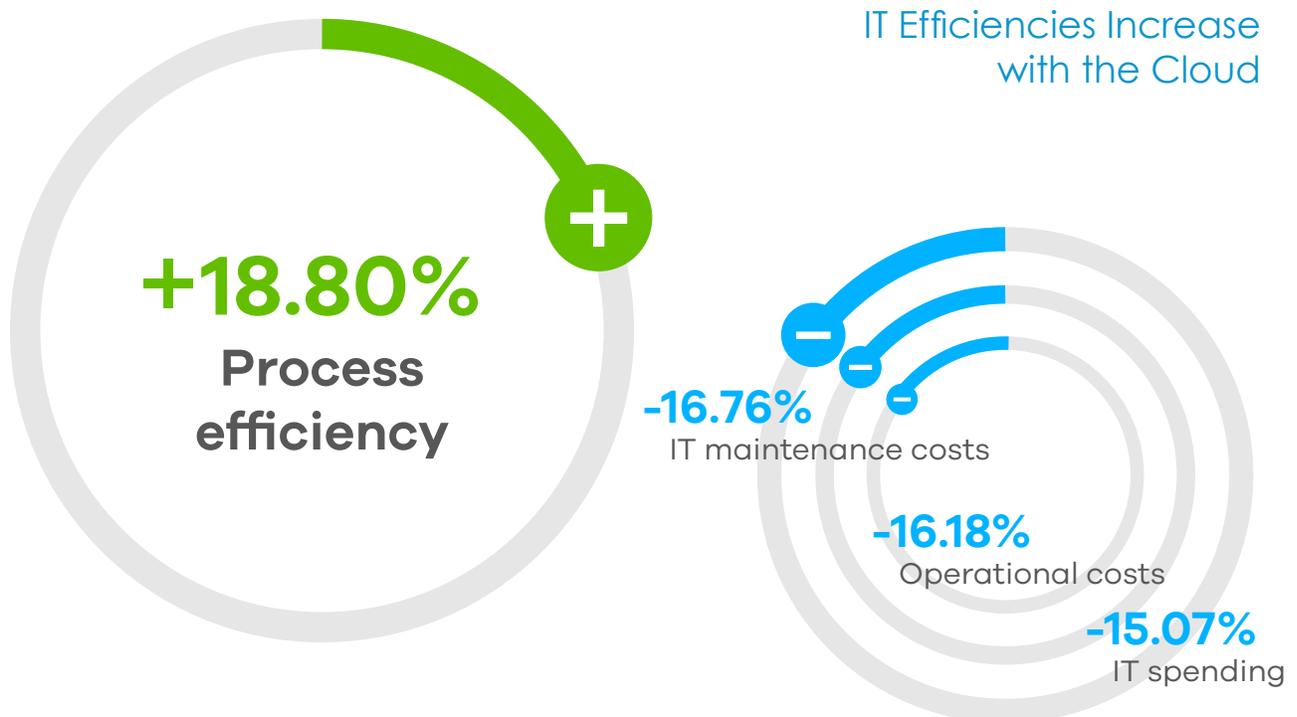
Is it right for your organization?

### Introduction

The rapid emergence of smart devices is driving radical shifts in computer networking. Almost every computing device – laptops, smartphones, cameras, cars, tablets, and more – is equipped with WiFi and requires network access. The number of connected devices is expected to grow exponentially. According to Gartner's IoT forecast<sup>1</sup>, 6 billion connected devices will be online in 2018, and it is estimated that more than 35 billion devices will be connected to the Internet by 2020. Today, Internet connectivity is expected to be as common as mainstream utilities like electricity.

The trend towards Bring Your Own Device (BYOD) has sent the demand for WiFi connectivity at companies and organizations through the roof. In order to support the growing number of devices and the increasing demand for bandwidth, wireless network infrastructure must be easily scalable, fast, more cost effective per device, secure and highly reliable.

Meanwhile, Internet access speeds have been increasing dramatically and Web browsers have been becoming more powerful. These things have led to the emergence of cloud-based computing and Software as a Service (SaaS). Much of the world's e-mail services and customer relationship management (CRM) software is now provided from the cloud as SaaS.

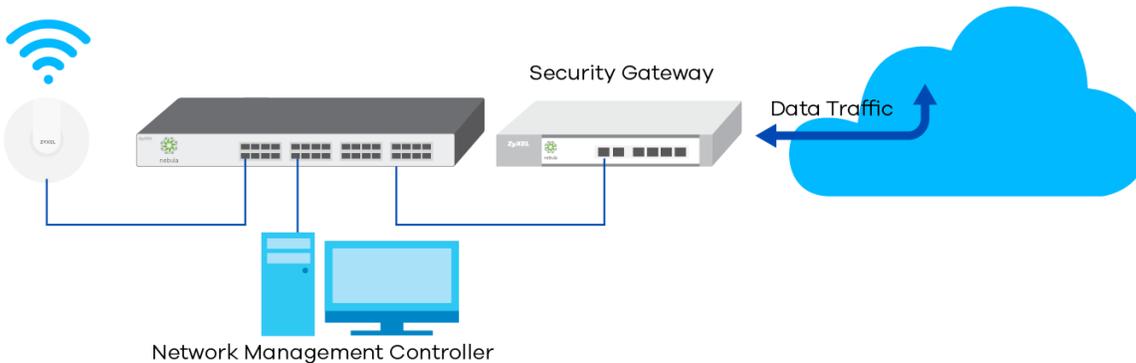


## Cloud-Based Network Management Overview

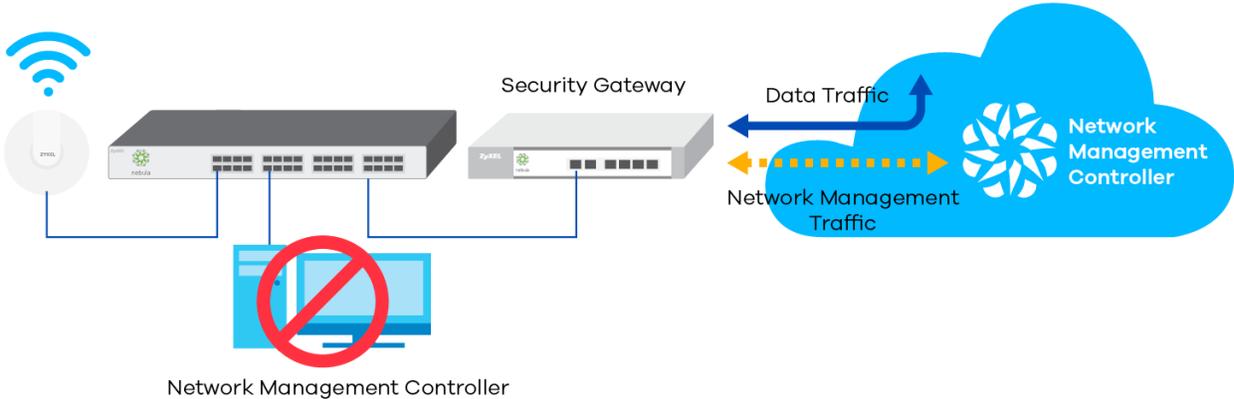
The evolution of SaaS has brought cloud based network management systems. Previously, network management had required an on-premises controller which is usually a dedicated hardware device. The controller is used to configure networking hardware, monitor the network and change settings as required.

A true cloud-based network management replaces on-premises controllers with virtual controllers that are hosted in the Internet by their respective vendors. This eliminates the need to deploy controllers on each site, reducing complexity and the upfront cost of the network. Vendors offer subscription plans which may have free and/or chargeable options for their cloud controller services. Cloud controllers offer remote provisioning, monitoring and troubleshooting of network devices without any additional hardware on-site.

Premises-based Network Controller

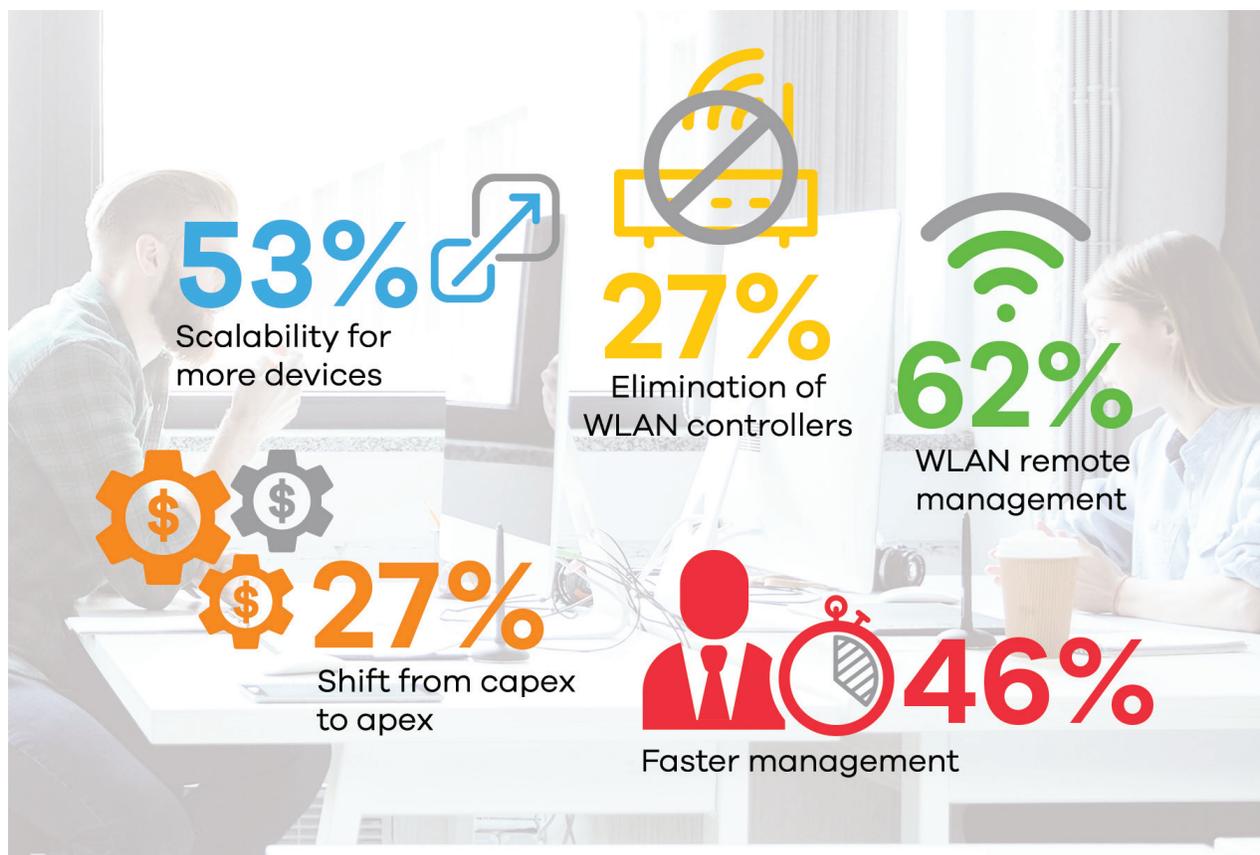


Cloud Network Controller



## Reasons Why Cloud Network Management is being Adopted

The adoption of cloud-based network management is driven by increased efficiency, rapid scalability and reduced costs. Here is a more detailed look at the benefits and what's behind them.



### Remote Management

Cloud-based management is a simpler way to manage networks. Since there is no need to deploy controllers on each site, network complexity is reduced. IT staff can securely log into the cloud portal from any location and from any of their devices – laptops, tablets or smartphones without the need of setting up VPN (Virtual Private Network) connections for each site. Cloud management systems typically integrate monitoring and reporting as a part of the solution unlike premises-based controller systems which typically require separate applications for these functions. The burden of having to maintain and upgrade controller hardware is removed, making IT staff more available for other tasks. One of the key benefits of cloud network management is that it facilitates remote management in a way that is cost effective and secure while also requiring less configuration.

## Rapid Scalability

The number of network devices that the cloud can handle is virtually limitless, making it a platform for better scalability. Networking hardware devices such as access points or switches can be added without being concerned about premises-based controller hardware limitations. Since the controller is in the cloud, scalability is not limited by hardware investments that have already been made. Furthermore, cloud network management allows licenses to be increased in more gradual 'pay as you go' increments, unlike hardware controllers which may need a costly upgrade to get to the next increment in network size. When it comes to network expansion, cloud managed solutions can support organizations that range in size from one person in one location to multiple sites with thousands of users.

## Zero-touch Deployment

Cloud-managed networking hardware can and should be designed for 'zero-touch' deployment, facilitating installation without sending IT professionals on site. Non-IT employees on distributed sites simply need to plug in and turn on networking hardware when it is delivered. Preconfigured settings are automatically applied when a recognized device is powered up onto the network. IT staff can perform provision, monitoring and diagnostics from a remote location anywhere in the world.

'Zero-touch' deployment can be a big benefit of cloud network management. The cloud-based approach makes networking deployments much easier – which is especially important for organizations with lean IT departments – and reduces travel costs.

## Instant Updates

Updates will be applied as they become available and are usually included in the subscription to managed services. There is no need to purchase updates as they are issued. This keeps features, security and regulatory compliance up-to-date. Hardware resources in the cloud are expanded automatically as your network requirements increase.

## The Managed Network Services Option

Outsourcing network management to Managed Service Providers (MSPs) can be beneficial, especially for small and medium sized businesses that either don't have full time IT staff or have a lean IT department. Organizations with multiple locations such as hotels and retailers also often chose to outsource to MSPs that offer network management bundled with Internet access.

Cloud network management is the preferred method that MSPs use to manage their customers' networks because it is more conducive to remote management, and 'zero-touch' deployment of hardware reduces costs. Many MSPs offer a 'one-stop shop' leasing service that bundles network equipment, managed services and internet access together in one package. This can be an attractive benefit because it reduces capital expenditure and removes the burden of monitoring and maintaining the network. MSPs will each typically have one or two networking vendors of choice. If outsourcing network management is a consideration, then choosing a MSP and a networking vendor is best done at the same time.

## Cost Efficiency Summary

Here is a summary of key cost saving benefits of cloud network management. Some or all of these benefits could apply to your organization:

Cost Saving Features	Cost Saving Benefits
No Controller Hardware	<ul style="list-style-type: none"> <li>• Reduced capital expenditure, improved cashflow</li> <li>• One less hardware failure point in the system</li> <li>• One less piece of hardware to configure and maintain</li> </ul>
Rapid Scalability	<ul style="list-style-type: none"> <li>• Helps your organization to expand and grow more quickly</li> </ul>
'Zero-touch' Deployment	<ul style="list-style-type: none"> <li>• Faster deployment to sites without IT staff</li> <li>• Reduced travel costs</li> </ul>
Enables a Centrally based IT Department	<ul style="list-style-type: none"> <li>• Increased IT department efficiency</li> <li>• Reduced IT costs</li> </ul>
'Pay-as-you-go'	<ul style="list-style-type: none"> <li>• Expand in more gradual increments as needed</li> </ul>
Regulatory Compliance	<ul style="list-style-type: none"> <li>• Increase time spent on core competencies</li> </ul>
Managed Services Option	<ul style="list-style-type: none"> <li>• Further reduced capital expenditure and improved cash flow</li> <li>• One-stop shop for hardware, internet access, network management leasing</li> <li>• Increase time spent on core competencies</li> </ul>

## Is Cloud Network Management Right for Your Organization?

Cloud network management can benefit any organization that is connected to the Internet. Here are some key considerations when making this decision:

### Increased IT Efficiency

Cloud network management will reduce the workload for your IT department, saving time and money. There is no premises-based network controller to setup and maintain. Remote network management is made easier with a secure cloud login from any device. 'Zero-touch' deployment means that IT staff can spend less time travelling.

### Multiple Locations & Centralized IT Department

Cloud-based network management systems make management of multiple sites from a single location much easier and more reliable. With one login, IT staff can quickly monitor and reconfigure multiple locations. Without the need for a controller at each location, setup is more efficient and there is one less potential point of failure.

### Internet Reliability

In order for network management tasks to be performed with a cloud-based system, a connection to the internet is needed. However, since Internet connectivity is so pervasive today and the reliability of connections in most places is as good as other utilities, this is usually an inconsequential factor when considering cloud network management. Any concerns about network management uptime can be mitigated by using two Internet service providers for redundancy so that if one service provider fails, then the other one could maintain the Internet connection. A cellular Internet service may also be an option for one of the connections.

### Special Requirements

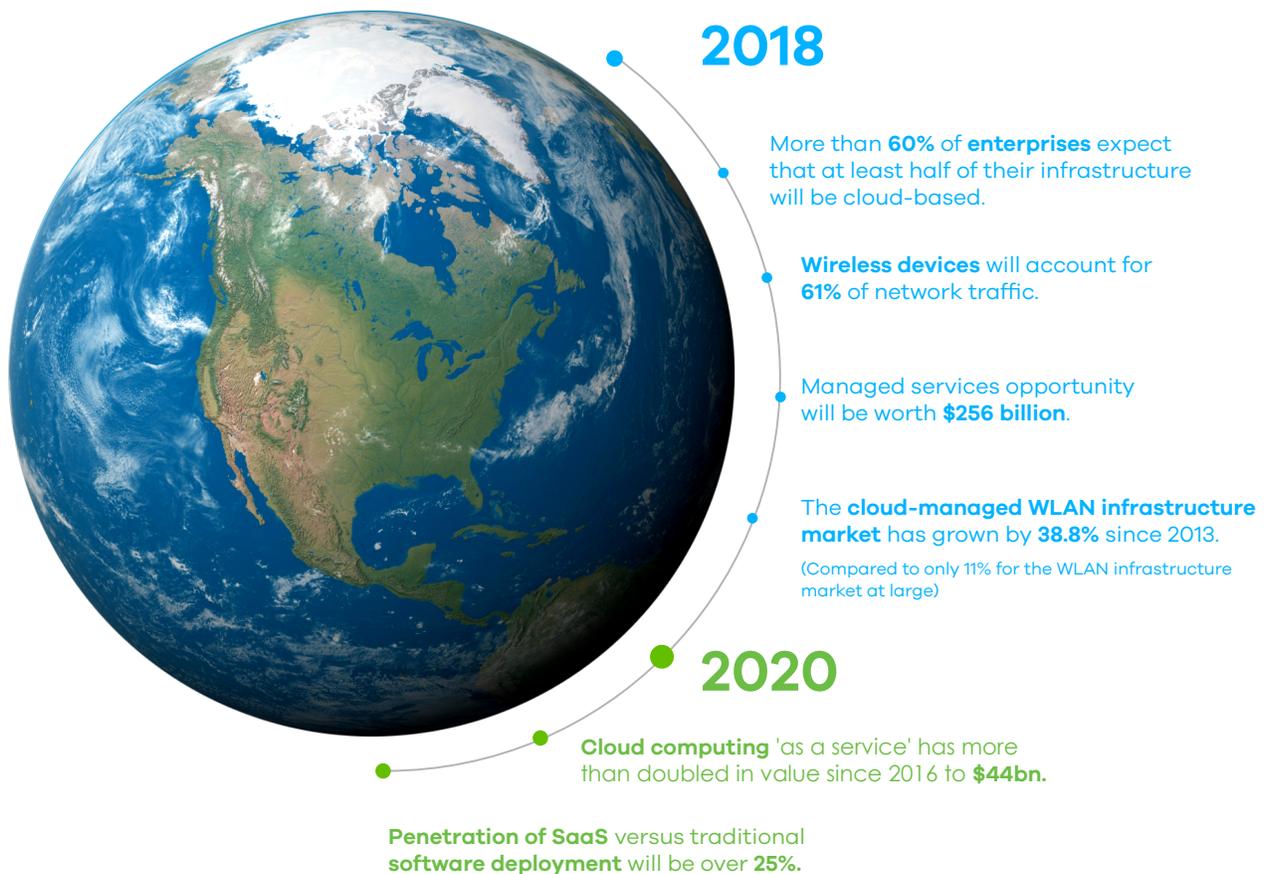
Cloud-based network controllers are feature rich, and provide many configurations and monitoring options. However, cloud-based controllers are a newer technology than premises-based controllers and may not yet provide all of the detailed configuration options offered by their premises-based counterparts. For example, cloud-based controllers may not yet have fully integrated multi-factor authentication (MFA) where more than a user ID and password is required to access the network. If your network has specialist requirements, then a more detailed comparison of cloud vs premises controller options should be made.

## Reduced Costs

Many cost savings can be realized with the cloud. Capital expenditure can be reduced and cashflow increased by removing controller hardware costs. Also, it reduces the time that IT staff spend to maintain, upgrade and expand the network. As your company grows, you can increase the network size more easily without concern for restrictions that a premises-based controller may impose or costly controller upgrade leaps that may be required. Cloud network management is more of a 'pay as you grow' approach to expansion. In the case of organizations with more than one location but with a centralized IT department, zero-touch deployment reduces travel time and costs. IT staff can easily and securely log-in to monitor and manage the network from any smart device with an internet connection.

## Managed Services

If the idea of outsourcing the responsibility for network management and maintenance is attractive, then cloud network management will be the default route that your managed service provider will want to take. The cloud facilitates off-site management and zero-touch deployment which are benefits that help MSPs increase efficiency.



## Key Cloud Networking Vendor Considerations Checklist

Cloud-based network management systems have many benefits but they're not all created equally. Here is a checklist of some important potential pitfalls to look out for when choosing a cloud network management system:

### All-inclusive

Does the networking vendor provide a holistic management solution for all of your networking hardware requirements: WiFi access points, switches and security gateways? Many vendors only provide part of the solution or in some cases the gateway only provides VPN features without anti-malware protection.

*Zyxel Nebula provides a holistic cloud network management solution with a range of WiFi access points, switches and security gateways with malware protection.*

### Reliability

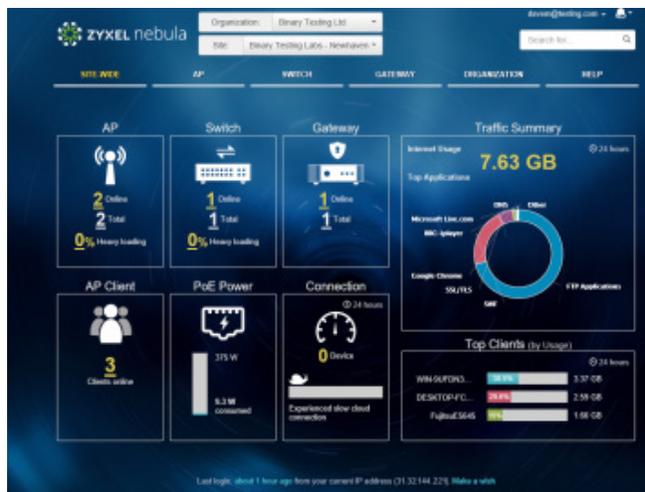
Does the vendor ensure high availability of their cloud services? Does the network continue to operate if the Internet connection goes down?

*Zyxel Nebula cloud management solution is hosted on Amazon Web Services and is backed by a 99.99% SLA. Nebula networks continue to operate if the internet connection goes down. Zyxel has been providing networking solutions since 1989.*

### Dual-WAN Access

Does the security gateway provide 2 or more Wide Area Network (WAN) ports so that 2 or more Internet Service Providers (ISPs) can be used? Using 2 ISPs mitigates any downtime for Internet connectivity and network management in rare situations where one service provider goes offline.

*All Zyxel Nebula security gateways provide Dual-WAN ports. In cases where all Internet connectivity is lost, Nebula networks will continue to operate although network management tasks will be suspended until Internet connectivity resumes.*



Zyxel Nebula Cloud Network Management

### Zero-touch

Is 'zero-touch' deployment a feature of the system?

*With Zyxel Nebula, it is. IT staff simply need to use the Nebula mobile app to scan the QR code on product boxes before they're dispatched. Non-IT employees on distributed sites then simply plug-in the devices and turn them on.*

## Security

Does the cloud managed solution use robust security?

*Zyxel Nebula uses TLS (Transport Layer Security, a replacement of SSL) between network hardware and the cloud controller. Management data is transported and encrypted with IETF (Internet Engineering Task Force) standards based NETCONF (Network Configuration Protocol). Only management traffic and logs are transmitted to Nebula Cloud Control Center. Data passes directly through the LAN and the WAN without passing through the cloud controller. There are no controller bottlenecks.*

## Real Cloud

Is it a true cloud network management system without a premises-based controller or is it a pseudo-cloud system that is half-and-half?

*Zyxel Nebula is a true cloud network management system that brings with it all of the cost saving benefits of the cloud.*

## Compliance

Does the cloud managed networking solution comply with regulatory frameworks; including the more recent European Union GDPR (General Data Protection Regulation)?

*Zyxel Nebula was compliant with GDPR six months before the deadline (May 2018). Additionally, Nebula is compliant with over 50 data protection and privacy certifications, laws, regulations and frameworks set out by regulatory bodies around the world (listed in Appendix A).*

## Licensing

Do the cloud licensing options suit the needs of your organization? Will failure to pay for the license halt all network management services?

*Zyxel Nebula gives customers the freedom to choose between free and cost effective paid subscription licenses with additional features. Some vendors only offer paid subscriptions.*

## Summary

If your company e-mail is hosted by Google or Microsoft or another cloud e-mail service, then you've already embraced some cloud services. You will be benefitting from not having to setup, manage and maintain your own e-mail servers. You will already be benefitting from the cost savings associated with cloud computing. If you've opened a new branch or added employees working from home, you will have experienced how fast and easy it is to expand e-mail to other locations with a cloud-based service. If you have already embraced cloud-based e-mail, then cloud-based network management may be the right next step for you.

If your organization doesn't yet use cloud-based e-mail, then cloud-based network management could be a good first step into the cloud. Some networking hardware vendors offer networking devices such as WiFi access points that have the ability to work either with cloud-based controllers or stand-alone, so that you can easily and cost effectively switch between the two.

## About Zyxel

Focused on innovation and customer-centricity, Zyxel Communications Corp. has been connecting people to the internet for nearly 30 years. We keep promoting creativity which meets the needs of customers. This spirit has never been changed since we developed the world's first integrated 3-in-1 data/fax/voice modem in 1992. Our ability to adapt and innovate with networking technology places us at the forefront of understanding connectivity for telco/service providers, businesses and home users.

We're building the networks of tomorrow, helping unlock the world's potential and meeting the needs of the modern workplace; powering people at work, life and play. We stand side-by-side with our customers and partners to share new approaches to networking that will unleash their abilities. Loyal friend, powerful ally, reliable resource — we are Zyxel, Your Networking Ally.



## Data Sources

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## Appendix A: Nebula Cloud Certifications and Compliances

<b>Certifications / Attestations</b>	<b>Laws &amp; Regulations</b>	<b>Alignments / Frameworks</b>
C5 (Germany)	CISPE Code of Conduct	CIS
Cyber Essentials Plus (UK)	EU Directive 95/46/EC	CJIS
DoD SRG	EU Model Clauses	CSA
FedRAMP	FERPA	ENS (Spain)
FIPS	GDPR EU 2016/679	EU-US Privacy Shield
IRAP (Australia)	GLBA	FFIEC
ISO 9001:2015	HIPAA	FISC
ISO 28018:2014	HITECH	FISMA
ISO 27001:2013	IRS 1075	G-Cloud (UK)
ISO 27017:2015	ITAR	GxP (FDA CFR 21 Part 11)
MTCS (Singapore)	My Number Act (Japan)	ICREA
PCI DDS Level 1	PDPA – 2010 (Malaysia)	IT Grundschutz (Germany)
SEC Rule 17-a-4(f)	PDPA – 2012 (Singapore)	MITA 3.0
SOC 1	PIPEDA (Canada)	MP AA
SOC 2	Privacy Act (Australia)	NIST
SOC 3	Privacy Act (New Zealand)	PHR
	U.K. DPA 1998	UK Cloud Security Principles
	VPAT / Section 508	Uptime Institute Tiers

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