

AMF Plus Cloud

Allied Telesis Autonomous Management Framework™ Plus (AMF Plus) for cloud-based network management

Overview

AMF Plus is a scalable network management solution for Allied Telesis switches and firewalls. With AMF Plus Cloud, network automation and management can be accessed from anywhere, with the flexibility of private or public cloud-based deployment.

As well as providing device management and automation, AMF Plus also integrates with Vista Manager EX, our graphical monitoring and management platform, which includes AMF Plus intent-based networking features for proactive management.

Business value through automation

Realize immediate business value with centralized network management treating any size network as a single converged entity. This reduces cost and complexity by delivering:

- ▶ **Centralized management** of many or all devices right across the network—locally or world-wide.
- ▶ **Network automation**, with zero-touch or one-touch backup, provisioning, upgrade, and recovery.
- ▶ **Network intelligence** reacts to changes in the network and automatically changes the topology.
- ▶ **Smart commands** allow network problems to be quickly identified and issues resolved.

Reduce operating costs dramatically as AMF Plus Cloud saves time, resource, and money.

Simplify your network

AMF Plus Cloud reduces the time and skill required to maintain the network. Configuration and firmware files are regularly

backed up. Failed devices are automatically regenerated, and configuration changes can be made on multiple devices simultaneously, no matter where they are located. Support business growth across all locations with plug-and-play simplicity.

Fully scalable

AMF Plus Cloud can manage networks that span multiple locations. Ideal for multi-site businesses, and service providers managing customer networks, it provides centralized access to all your devices.

Automated management for up to thousands of devices enables today's smarter cities and the Internet of Things (IoT).



AMF PLUS

VISTA MANAGER™ EX

AlliedWare Plus™
OPERATING SYSTEM

Key Features

- ▶ **Flexible deployment** with private or public cloud installation—use your own local server, or deploy fully online with Amazon Web Services or Microsoft Azure.
- ▶ **Integrated option** as part of the Vista Manager Network Appliance.
- ▶ **Scalable** with licensing options for any size network.
- ▶ **Lower cost of entry** with no dedicated hardware requirements.
- ▶ **Reduce costs** with simple pay-as-you-go.
- ▶ **Web-based interface** for remote network monitoring and management anywhere at anytime.
- ▶ **Peace of mind networking** with a full back-up stored in the cloud.
- ▶ **Eco-friendly** as cloud deployment requires no rack space, cooling or power.
- ▶ **Visual monitoring and management** of the AMF Plus controlled network using Vista Manager EX.

Key Features - AMF Plus Cloud Automation

AMF Plus is a sophisticated suite of management tools that provide a simplified approach to network management. Powerful features like centralized management, auto-backup, auto-upgrade, auto-provisioning, and auto-recovery, enable plug-and-play networking and zero-touch management.

Centralized management

- ▶ Centralized management enables CLI commands to be run on multiple devices simultaneously. Commands are issued only once and AMF Plus ensures that they are received and processed by each device. This saves time and reduces the chance of mistakes when configuration changes need to be made across several devices. Any configuration change, monitoring request or debugging of the network can be made to one, many, or all devices with a single command.

“Configuration changes that were taking 2 hours previously, can now be done in just 10 minutes with AMF.”
 — Southern Institute of Technology

Auto-backup

- ▶ AMF Plus auto-backup reduces effort and the risk of errors by automatically managing the configurations for all devices in the network. Every day, AMF Plus automatically backs up the configurations and firmware for the entire network into a central library, which can be located locally on the Master device, on a server, or fully online with AMF Plus Cloud. Backups can also be created manually after configuration changes. Up-to-date firmware and configuration information is always available for all devices.

Auto-upgrade

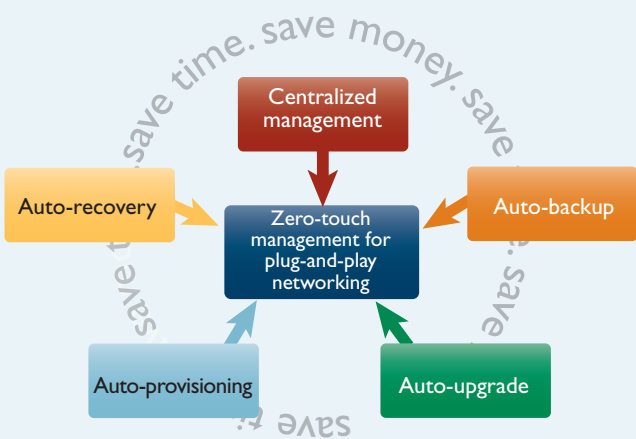
- ▶ Firmware upgrades can be rolled out to groups of devices or the entire AMF Plus network quickly and easily with auto-upgrade. The user simply selects the group of devices to be upgraded, then issues the CLI commands to load the new firmware release. Each device in the group will download the files in preparation for a reboot.
- ▶ Rather than having to reboot all devices in the group at the same time, AMF Plus can use rolling reboot so only one device reboots at a time, maximizing network uptime during the firmware upgrade process.

Auto-provisioning

- ▶ Allows unconfigured devices to be added directly into the network as AMF Plus can pre-provision a device even before it is present. This allows zero-touch expansion of the network, as devices can be easily added and AMF Plus automatically selects the correct configuration. If a new device has not been pre-provisioned, then AMF Plus isolates the device until it has been successfully configured either automatically or manually by the user.

Auto-recovery

- ▶ Replacing a failed device is truly zero touch with auto-recovery. The replacement device needs no configuration, other than a physical connection to the network. As soon as the device is powered up, AMF Plus automatically reconfigures it using the latest back-up of its firmware and configuration.
- ▶ When an old model device fails, or is due for updating, it can be replaced with a newer model of similar hardware specification. Simply plug in the new model AMF Plus device and it will automatically receive the right firmware, licenses, and configuration from the Master. This enables plug-and-play replacement for end-of-life products.



For more information on specific device replacement options for a given model, see the AMF Plus feature overview guide: <https://www.alliedtelesis.com/nz/en/documents/amf-feature-overview-and-configuration-guide>

Key Features - AMF Plus Cloud Management and Control

The power of AMF Plus Cloud extends beyond simplifying and automating network administration. With features such as graphical monitoring and management through Vista Manager EX, and large global multi-site network support, AMF Plus Cloud is a powerful and comprehensive network management solution.

Vista Manager EX

- ▶ Vista Manager EX provides visual management of all AMF Plus controlled switches and firewalls, and with our other tools, wireless APs and third-party devices too. Actionable reporting highlights any problems requiring attention, while multiple network map views support easy monitoring and proactive management. Intuitive usability and at-a-glance status is partnered with detailed device and network information—all just a click away.



AMF Plus orchestrator

- ▶ The AMF Plus orchestrator makes network management easy. Health monitoring provides at-a-glance visual network status, while simple graphical input enables LAN traffic management using QoS and ACLs. Easily create new inter-branch VPN connections, prioritize and shape application traffic over the WAN, manage security, and more. Effortlessly enable the network to support your business intent.

Multi-site support

- ▶ The benefits of AMF Plus are not limited to the LAN. AMF Plus networks can also tunnel across the Internet so that devices in multiple locations can be easily

managed centrally from the cloud—perfect for multi-site businesses. The management links from each location are encrypted tunnels to the AMF Plus-Cloud installation supporting flexible and secure deployment.

- ▶ Any size AMF Plus network can extend across different locations and different time zones to easily support business growth, remote connectivity requirements, and the roll-out of new branch offices anywhere around the world.

AMF Plus Controller

- ▶ An AMF Plus network with a single Master can support up to 300 devices. For larger networks, the AMF Plus Controller extends the benefits of AMF Plus to thousands of devices. It enables time and money to be saved on a much larger scale, as the entire network (whether local, city-wide, or global) takes advantage of centralized management, and automated network back-up, upgrade, provisioning, and recovery.

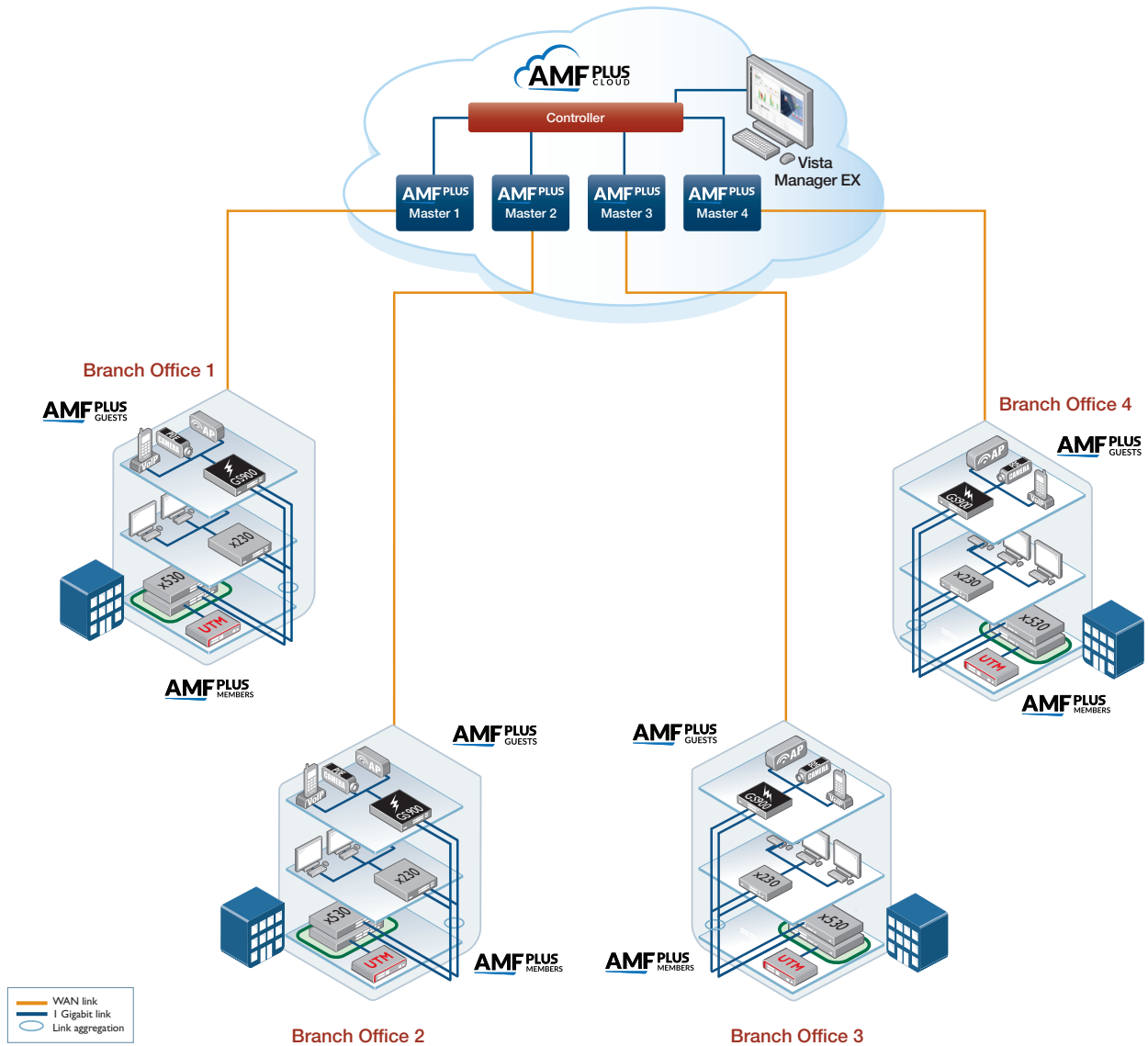
Multiple Tenants

- ▶ Support up to 120 tenants on AMF Plus Cloud. Each tenant network is kept separate from other tenant networks for fully flexible deployment, with central or individual network management options. As an AMF Plus Master capable device is not required in every location, AMF Plus multi-tenant provides a high-value solution for large distributed companies, as well as service providers offering network provisioning and/or management services.

AMF Plus Guests

- ▶ AMF Plus guestnode allows non-AMF Plus switching products, as well as third-party devices such as IP phones and security cameras, to be part of an AMF Plus network. AMF Plus guests are recognized by the network and displayed in Vista Manager, providing a broader view of connected devices.

Key Solution - Multiple Tenants



AMF Plus Cloud multi-tenant network

AMF Plus Cloud multi-tenant support enables distributed businesses to provide appropriate levels of network administration to local branch offices, as well as supporting service providers in managing multiple customer networks.

Management of any branch office, or customer network, is easily accessible from anywhere at any time. The power and simplicity of AMF Plus Cloud unifies management of the entire network, and supports plug-and-play networking with zero-touch expansion and recovery.

The multi-site enterprise shown in the diagram is easily managed using AMF Plus Cloud. All Allied Telesis switching and firewall products, in all locations, are automatically backed up. Any device in any location can be easily upgraded or replaced by simply plugging it in. Centralized

management allows configuration or monitoring to be carried out on many, or all, devices at once.

Allied Telesis Vista Manager EX provides graphical monitoring and management of the AMF Plus Cloud network. Vista Manager EX plugins support the management of wireless and other devices. For more information visit alliedtelesis.com/products/software/vistamanager

“AMF Cloud provides integrators with a simpler and more efficient way of delivering a managed network service to their customers.”

—Spark Digital, Systems Integration

Key Solution - Smart City Surveillance

Smart city AMF Plus Cloud surveillance network

All over the world, smart cities are looking to increase information availability, security, and transport efficiency to enhance the quality of urban services, while increasing the safety of citizens.

The city-wide surveillance network in the diagram shows digital cameras that can be deployed at bus stops, train stations, intersections and other public spaces. High-speed Allied Telesis resilient ring technology guarantees live access to all video feeds. This real-time video data helps increase the efficiency of public transport, as well as the safety of the commuting environment for passengers, visitors and city workers.

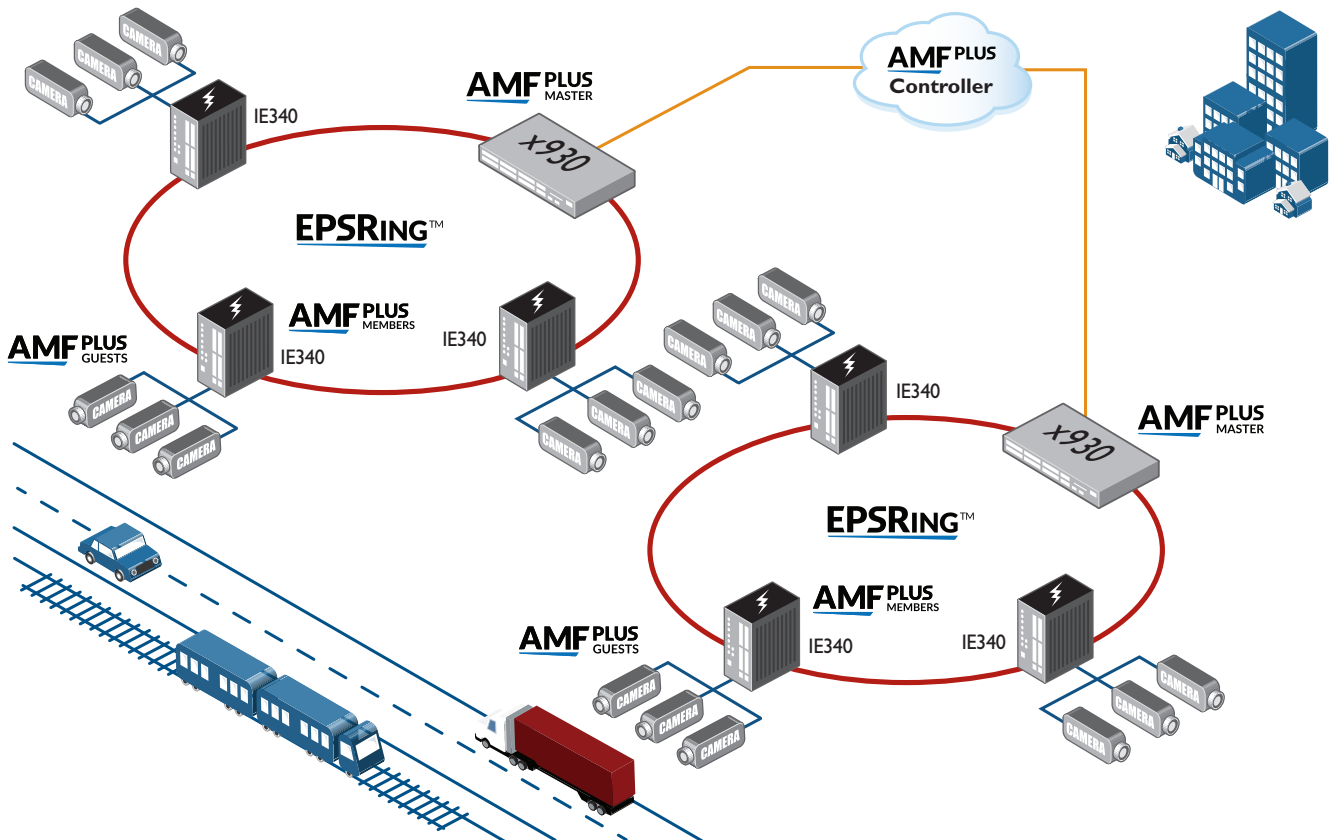
With AMF Plus Cloud, the network controller is a virtual appliance, providing the advantages of cloud-based access and flexibility. A full up-to-date backup of the network is always stored in the cloud, enabling plug-and-play roll-out of new network devices, and zero-touch recovery.

As AMF Plus guests, the surveillance cameras are part of the broad view of connected devices. The power of AMF provides the ability to configure many or all network devices city-wide with a single command.

AMF Plus Cloud integrates with Vista Manager EX to support network managers in delivering advanced online services, with powerful single-pane-of-glass network visibility simplifying administration.

“With AMF and Vista Manager we now have greater network insight, and monitoring, configuration, and maintenance is a breeze.”

— Eastlink Tollway, Melbourne



AMF Plus Cloud Master and Controller Licenses

Licensing for AMF Plus Cloud will depend on network size.

Single area AMF Plus networks:

For a single area AMF Plus network, just a single AMF Plus Master is required, which can support up to 300 nodes. The AMF Plus Master base license supports up to 10 nodes, and then subsequent licenses can be purchased for additional nodes (1 or 10 nodes at a time).

Multi-area AMF Plus networks:

For multiple area AMF Plus networks, an AMF Plus Controller is needed, which can manage up to 1000 areas. Purchase one AMF Plus Controller licence per 10 areas you wish to manage.

Each area will require an AMF Plus Master license/s as described above.

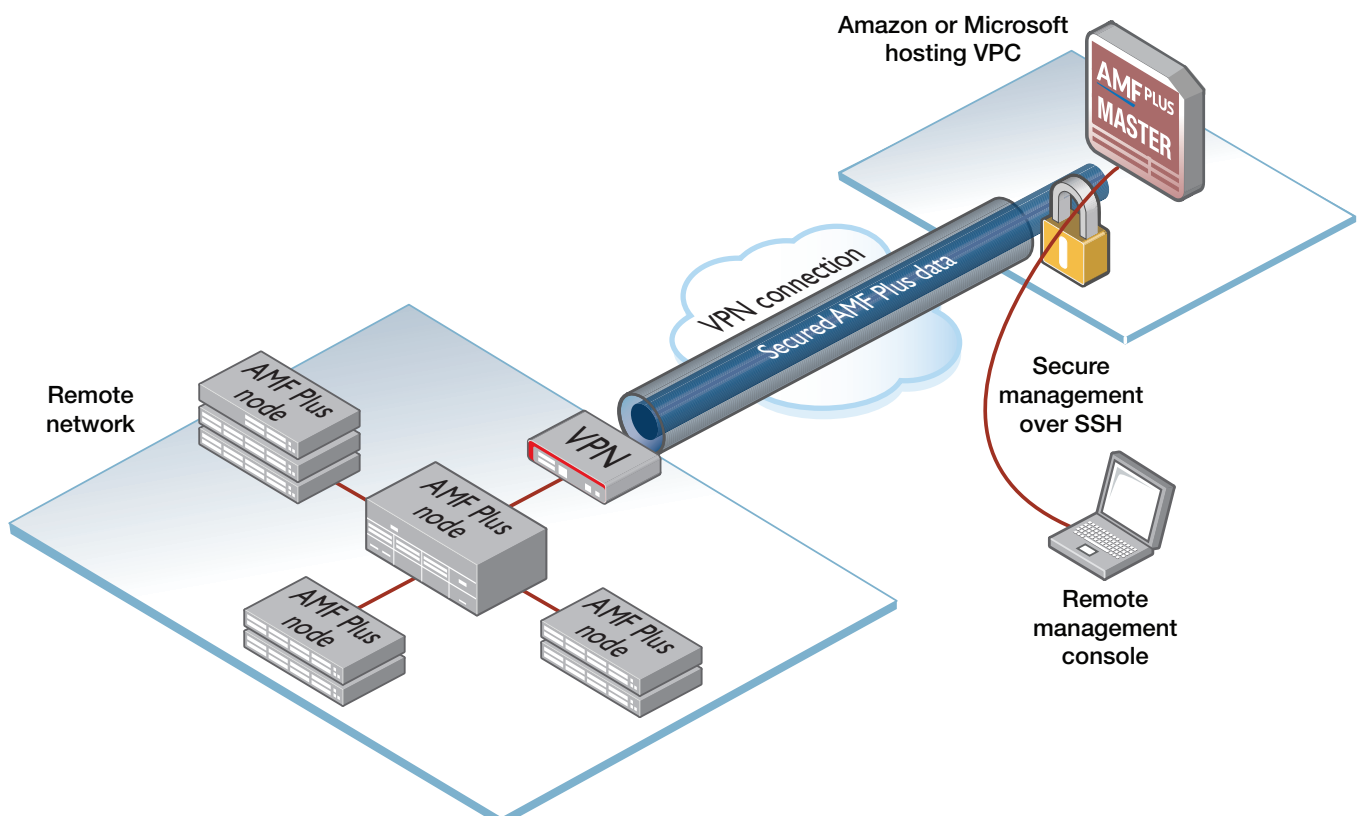
As shown in the table below, all licenses are available for 1 or 5 years.

LICENSE NAME	SUBSCRIPTION
AT-AMFCLOUD-PLUS-BASE-1YR ¹	1 year AMF Plus Master license for up to 10 nodes
AT-AMFCLOUD-PLUS-BASE-5YR ¹	5 year AMF Plus Master license for up to 10 nodes
AT-AMFCLOUD-PLUS-EX1-1YR ¹	1 year AMF Plus Master 1 node add-on license (maximum 300 nodes)
AT-AMFCLOUD-PLUS-EX1-5YR ¹	5 year AMF Plus Master 1 node add-on license (maximum 300 nodes)
AT-AMFCLOUD-PLUS-EX10-1YR ¹	1 year AMF Plus Master 10 node add-on license (maximum 300 nodes)
AT-AMFCLOUD-PLUS-EX10-5YR ¹	5 year AMF Plus Master 10 node add-on license (maximum 300 nodes)
AT-AMFCLOUD-PLUS-CTRL-1YR ¹	1 year AMF Plus Controller 10 areas base/add-on license (maximum 1000 areas)
AT-AMFCLOUD-PLUS-CTRL-5YR ¹	5 year AMF Plus Controller 10 areas base/add-on license (maximum 1000 areas)

¹ From AW+ version 5.5.2-2 onwards, AMF Plus licenses provide all standard AMF network management and automation features. They also enable the AMF Plus intent-based networking features menu in Vista Manager EX (from version 3.10.1 onwards)

AMF Plus Cloud deployment

AMF Plus Cloud can be deployed locally on your own server, or fully online hosted by Amazon Web Services or Microsoft Azure.



AMF Plus Cloud server specifications

The following Virtual Machine (VM) environment is required to install and run AMF Plus Cloud.

SINGLE MODE		
Virtualization environment	VMware vSphere Hypervisor (ESXi) 6.5, 6.7 or 7.0, Citrix XenServer 7.1 CU1, Hyper-V	
CPU	Scale of AMF Plus network	CPU
	1 to 120 nodes	vCPU × 2
	121 to 300 nodes (1 to 60 virtual links)	vCPU × 2
	121 to 300 nodes (61 to 300 virtual links)	vCPU × 2
	2 to 1000 areas	vCPU × 2
Memory capacity	Scale of AMF Plus network	Memory capacity
	1 to 120 nodes	1 GB
	121 to 300 nodes (1 to 60 virtual links)	1 GB
	121 to 300 nodes (61 to 300 virtual links)	2 GB
	1 to 300 areas	2 GB
	301 to 1000 areas	4 GB
Virtual disk capacity	32 GB	
Network adapter (NIC) type	VMware vSphere Hypervisor (ESXi) 6.5, 6.7, or 7.0	Intel E1000 NIC, VMware vmxnet 3 NIC
Number of network adapters (NIC)	VMware vSphere Hypervisor (ESXi) 6.5, 6.7, or 7.0	1 to 10 interfaces
	Citrix XenServer 7.1 CU1	1 to 7 interfaces
	Hyper-V	1 to 8 interfaces
Public cloud support	Amazon Web Services (AWS), Microsoft Azure	
MULTI-TENANT MODE		
Virtualization environment	VMware vSphere Hypervisor (ESXi) 6.5, 6.7 or 7.0, Citrix XenServer 7.1 CU1, Hyper-V	
CPU	Scale of AMF Plus network	CPU
	1 to 1200 nodes (1 to 20 containers, 1 to 300 virtual links)	vCPU × 2
	1 to 1200 nodes (1 to 20 containers, 301 to 1200 virtual links)	vCPU × 4
	1 to 1200 nodes (21 to 120 containers, 21 to 1200 virtual links)	vCPU × 4
	1 to 1200 nodes (121 to 300 containers, 21 to 1200 virtual links)	vCPU × 8
	1201 to 10000 nodes (5 to 120 containers, 5 to 2000 virtual links)	vCPU × 8
	1201 to 10000 nodes (5 to 120 containers, 2001 to 10000 virtual links)	vCPU × 16
	1201 to 10000 nodes (121 to 300 containers, 2001 to 10000 virtual links)	vCPU × 16
	10001 to 18000 nodes (34 to 60 containers, 34 to 18000 virtual links)	vCPU × 24
	10001 to 18000 nodes (61 to 120 containers, 34 to 18000 virtual links)	vCPU × 24
	10001 to 18000 nodes (121 to 300 containers, 34 to 18000 virtual links)	vCPU × 24
Memory capacity	Scale of AMF Plus network	Memory capacity
	1 to 1200 nodes (1 to 20 containers, 1 to 300 virtual links)	4 GB
	1 to 1200 nodes (1 to 20 containers, 301 to 1200 virtual links)	8 GB
	1 to 1200 nodes (21 to 120 containers, 21 to 1200 virtual links)	8 GB
	1 to 1200 nodes (121 to 300 containers, 21 to 1200 virtual links)	32 GB
	1201 to 10000 nodes (5 to 120 containers, 5 to 2000 virtual links)	8 GB
	1201 to 10000 nodes (5 to 120 containers, 2001 to 10000 virtual links)	8 GB
	1201 to 10000 nodes (121 to 300 containers, 2001 to 10000 virtual links)	48 GB
	10001 to 18000 nodes (34 to 60 containers, 34 to 18000 virtual links)	16 GB

AMF Plus Products

AMF Plus Cloud can be used to manage any Allied Telesis products, running the advanced AlliedWare Plus™ operating system:

- ▶ SwitchBlade® x8100 Series switches
- ▶ SwitchBlade x908 GEN2 switch
- ▶ x950 Series switches
- ▶ x930 Series switches
- ▶ x550 series switches
- ▶ x530 Series switches
- ▶ x530L Series switches
- ▶ x330 Series switches
- ▶ x320 Series switches
- ▶ x240 Series switches
- ▶ x230 Series switches
- ▶ x220 Series switches
- ▶ IE340 Industrial switches
- ▶ IE220 Industrial switches
- ▶ IE210L Industrial switches
- ▶ XS900MX Series switches
- ▶ GS980EM Series switches
- ▶ GS980MX Series switches
- ▶ GS980M Series switches
- ▶ GS970EMX Series switches
- ▶ GS970M Series switches
- ▶ SE240 Series switches
- ▶ AR4000S-Cloud Virtual UTM Firewall
- ▶ 10G UTM Firewall
- ▶ AR4050S-5G
- ▶ AR4050S UTM Firewall
- ▶ AR3050S UTM Firewall
- ▶ AR2050V Secure VPN Firewall
- ▶ AR2010V Compact VPN Firewall
- ▶ AR1050V Secure VPN Firewall