AMF Cloud

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

AMF™ **VISTA** MANAGER™ EX

AlliedWare Plus™ OPERATING SYSTEM

Overview

AMF is a scalable network management platform. It supports Allied Telesis switching, firewall, and wireless products, as well as a wide range of third-party devices—including video surveillance cameras and IP phones—for truly inclusive network automation.

With AMF Cloud, network automation and management can be accessed from anywhere, with the flexibility of private or public cloud-based deployment.

Using AMF Cloud with Vista Manager EX provides graphical monitoring and management of the network. Powerful built-in operation and statistical tools enable proactive network management.

Business value through automation

AMF Cloud delivers immediate value to businesses of all sizes, with centralized network management able to treat a network of any size 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—AMF Cloud saves time, resource, and money.

Simplify your network

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

Automated management for up to thousands of devices, means AMF Cloud is ready for the inexorable move towards smarter cities and the Internet of Things (IoT).

Key Features

- ▶ **Flexible deployment** with private or public cloud installation—use your own local server, or deploy fully online with Amazon web services.
- ▶ **Scalable** for any size network, with multiple licensing options.
- ▶ **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, anytime.
- ▶ **Peace of mind networking** with a full back-up stored in the cloud.
- ▶ **Eco-friendly**—cloud deployment requires no rack space, cooling or power.
- ▶ **Visual monitoring** and management of the AMF network using Vista Manager EX.

Key Features - AMF Cloud Automation

AMF 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. Cloud-based deployment makes this powerful network automation easily accessible from anywhere at any time.

Centralized management

▶ Centralized management enables CLI commands to be run on multiple devices simultaneously. Commands are issued only once and AMF 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 multiple devices in multiple locations. 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 auto-backup reduces effort and the risk of errors by automatically managing the configurations for all devices in the network. Every day, AMF automatically backs up the configurations and firmware for the entire network into a cloud-based library, so an up to date backup is always available. 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 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 can use a rolling reboot. AMF ensures that only one device is rebooting at any one time, so maximum network connectivity is retained throughout the firmware upgrade process.

Auto-provisioning

▶ Auto-provisioning allows unconfigured devices to be added directly into the network because AMF can pre-provision the device even before it is present. This allows zero-touch expansion of network locations, as devices can be easily added and AMF automatically selects the correct configuration. If a new device has not been pre-provisioned, then AMF isolates the device until it has been successfully configured, which can be managed automatically by AMF, 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 automatically reconfigures it using the latest back-up of its firmware and configuration.
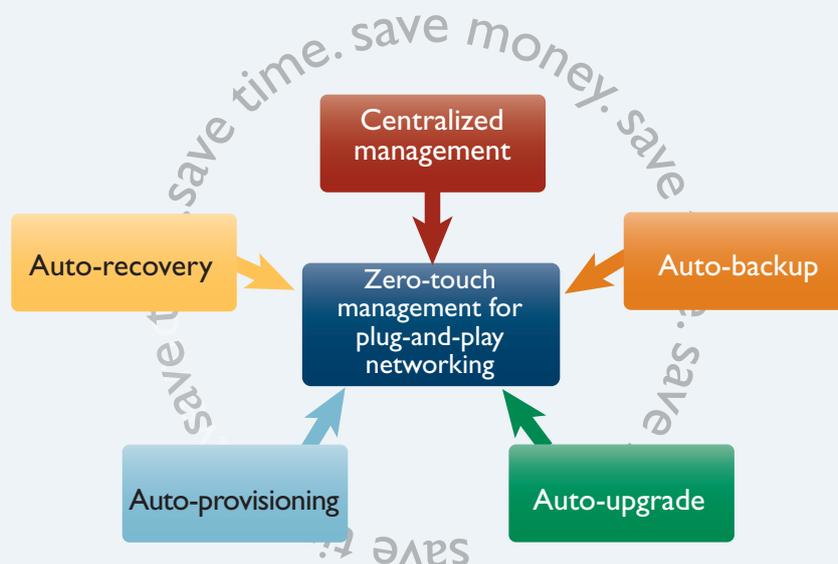
Key Features - AMF Cloud Management and Control

The power of AMF Cloud extends beyond simplifying and automating network administration. With features such as graphical monitoring and management through Vista Manager EX, large global network support, and the addition of 3rd party devices, AMF Cloud is a powerful and comprehensive network management solution.

Vista Manager EX

▶ The Allied Telesis graphical management tool, Vista Manager EX, provides visual management of an AMF network. Users can monitor and manage network switches and firewalls, as well as wireless Access Points (APs). Manage many or all devices at once, while actionable reporting highlights any problems requiring attention. Vista Manager EX provides intuitive usability with an overview dashboard, network performance monitoring, and troubleshooting tools—all just a click away.

AMF WAN

▶ The benefits of AMF are not limited to the LAN. AMF networks can also tunnel across the internet so that devices in remote locations can be easily managed from a cloud-based location—perfect for multi-site businesses. The tunneled links can even reach across external (non AMF) routers for complete deployment flexibility.

▶ Remote offices can be connected to a head office with encrypted connections for secure company-wide automated network management. Any size AMF network can extend across different locations and different time zones, all with cloud-based central management.

AMF Controller

▶ An AMF Cloud network with a single Master can support up to 300 devices. For larger networks, the AMF Controller extends the benefits of AMF 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.
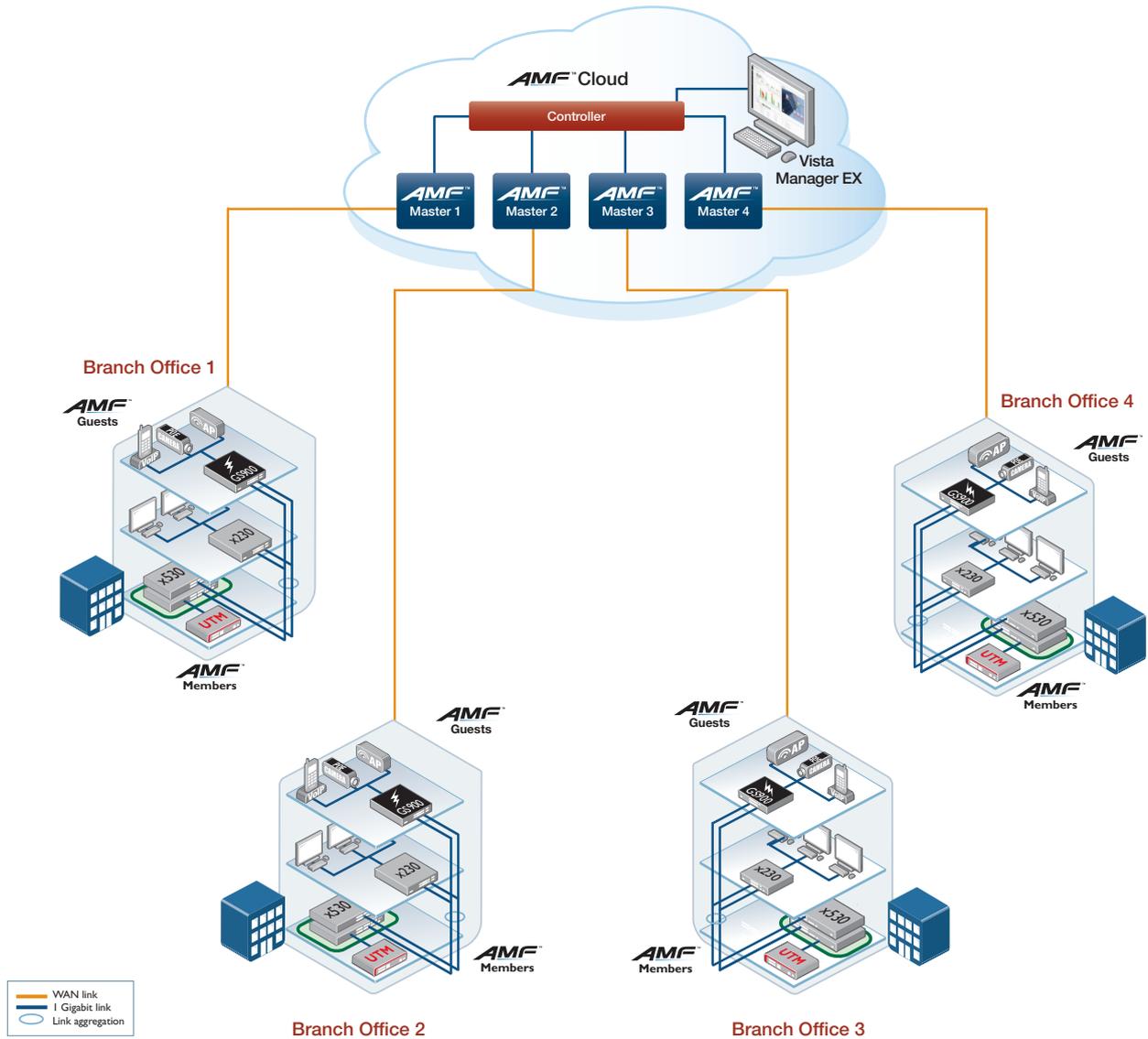
Multiple Tenants

▶ Support multiple tenants (up to 300) on AMF 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 Master capable device is not required in every location, AMF multi-tenant provides a high-value solution for large distributed companies, as well as service providers offering network provisioning and/or management services.

AMF Guests

▶ AMF guestnode allows Allied Telesis wireless APs and additional switching products, as well as third-party devices such as IP phones and security cameras, to be part of an AMF network. AMF guests are recognized by the network, providing a broader view of connected devices, and certain Allied Telesis wireless products utilize selected AMF automated features.

Key Solution

AMF Cloud multi-tenant network

AMF 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 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 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 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 AMF 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 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 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 Cloud and Vista Manager EX support network managers in delivering advanced online services. This powerful single-pane-of-glass improves network visibility, while network maps and an overview dashboard simplify administration.
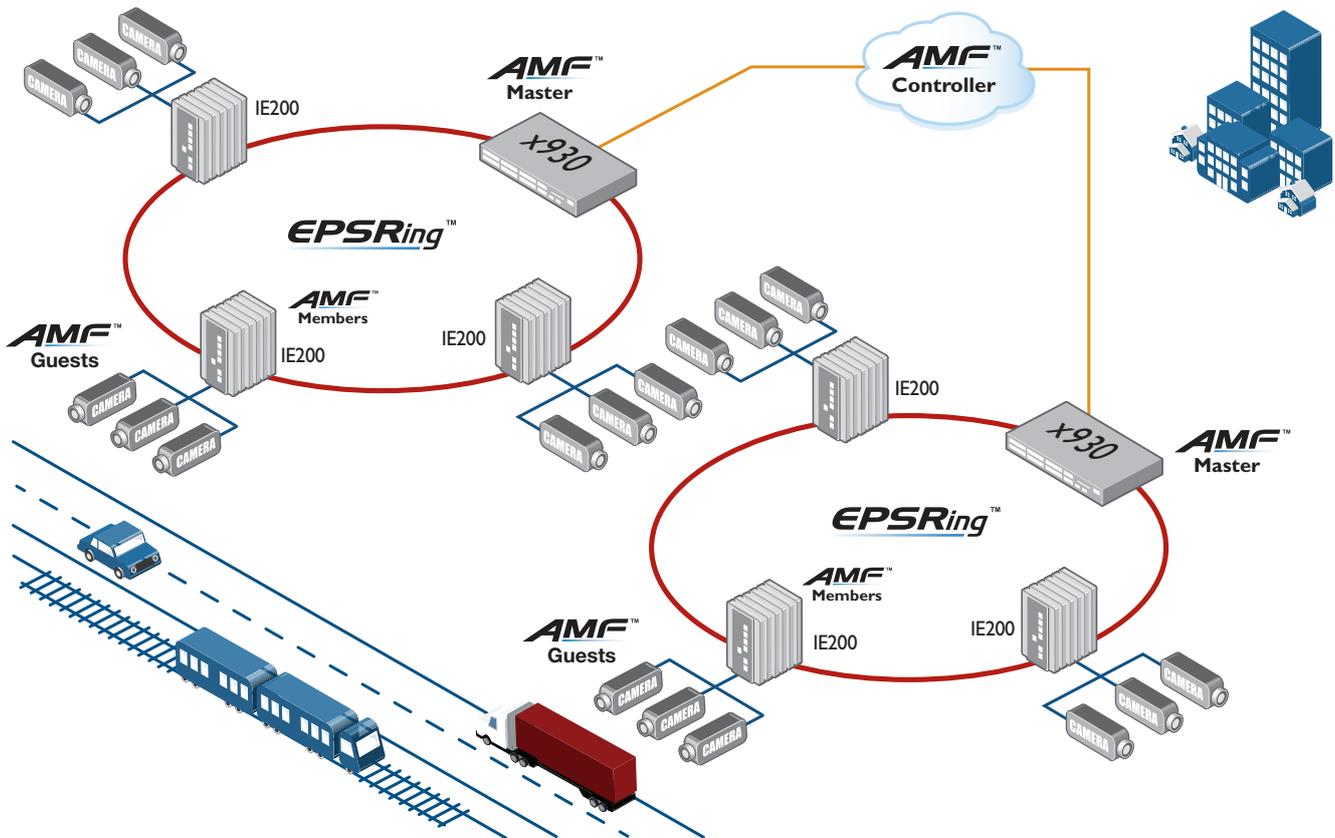
AMF Cloud Master and Controller Licenses

Licensing for AMF Cloud will depend on network size.

Single area AMF networks:
For a single area AMF network, just a single AMF Master is required, which can support up to 300 nodes. The AMF 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 networks:
For multiple area AMF networks, an AMF Controller is needed, which can manage up to 1000 areas. Purchase one AMF Controller licence per 10 areas you wish to manage.

Each area will require an AMF 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-FL-AMFCLOUD-BASE-1YR	1 year AMF Master license for up to 10 nodes
AT-FL-AMFCLOUD-BASE-5YR	5 year AMF Master license for up to 10 nodes
AT-FL-AMFCLOUD-EX1-1YR	1 year AMF Master 1 node add-on license (maximum 300 nodes)
AT-FL-AMFCLOUD-EX1-5YR	5 year AMF Master 1 node add-on license (maximum 300 nodes)
AT-FL-AMFCLOUD-EX10-1YR	1 year AMF Master 10 node add-on license (maximum 300 nodes)
AT-FL-AMFCLOUD-EX10-5YR	5 year AMF Master 10 node add-on license (maximum 300 nodes)
AT-FL-AMFCLOUD-CTRL-1YR	1 year AMF Controller 10 areas base/add-on license (maximum 1000 areas)
AT-FL-AMFCLOUD-CTRL-5YR	5 year AMF Controller 10 areas base/add-on license (maximum 1000 areas)

AMF Cloud deployment

AMF Cloud can be deployed locally on your own server, or fully online hosted by Amazon web services or Microsoft Azure.
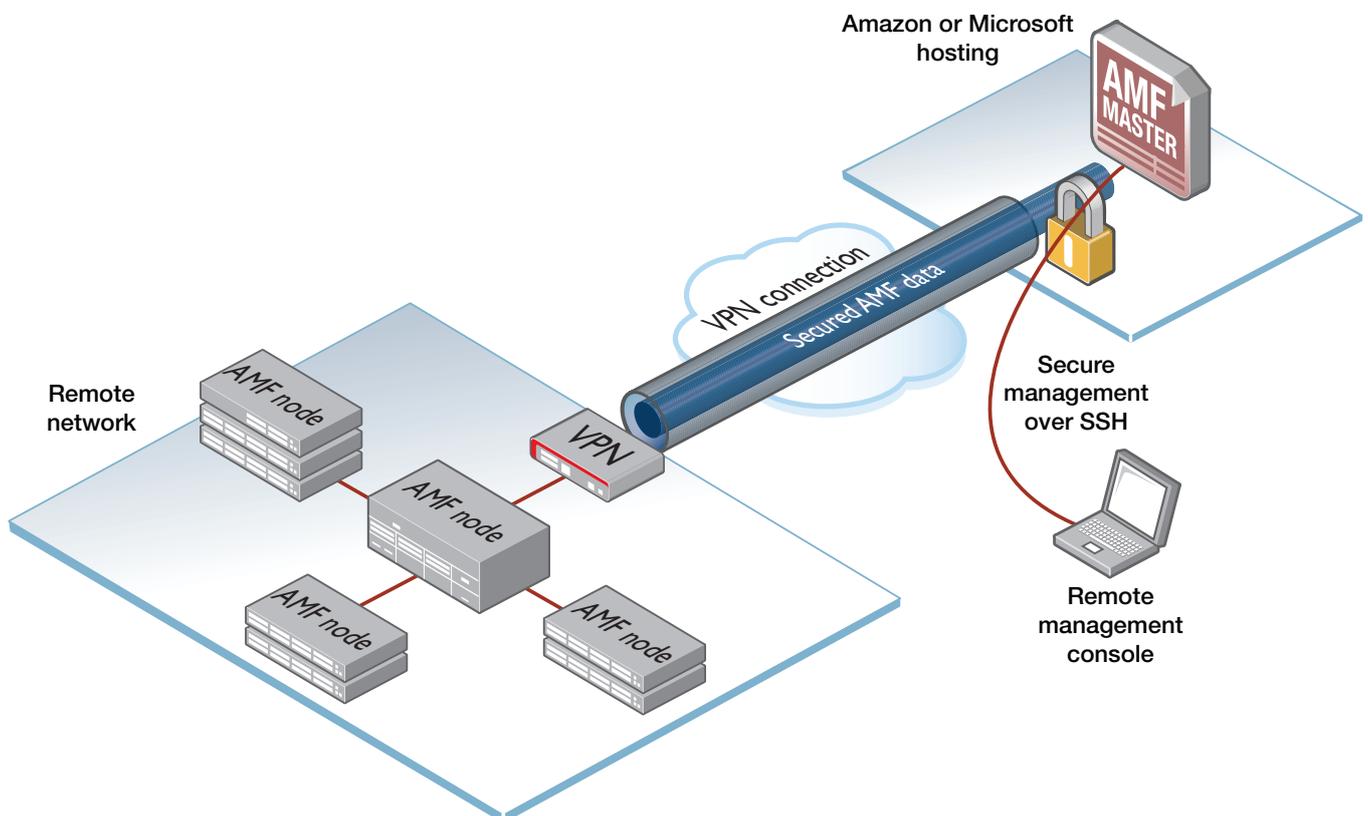
AMF Cloud server specifications

The following Virtual Machine (VM) environment is required to install and run AMF 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 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 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 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 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 Products

AMF 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
- x510 Series switches
- IX5-28GPX switch
- x330 Series
- x320 Series switches

- x310 Series switches
- x230 Series switches
- x220 Series switches
- IE510 Series switches
- IE340 Series switches
- IE300 Series switches
- IE210L Series switches
- IE200 Series switches
- XS900MX Series switches
- GS900MX Series switches
- GS980EM Series switches

- GS980MX Series switches
- GS980M Series switches
- GS970EMX Series switches
- GS970M Series switches
- FS980M Series switches
- Virtual 10G UTM Firewall
- AR4050S UTM Firewall
- AR3050S UTM Firewall
- AR2050V VPN Firewall
- AR2010V Compact VPN Firewall
- AR1050V Secure VPN Firewall

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