

# OmniAccess 700 Unified Service Gateways (USG)

Simplifying the enterprise edge



## Network transformation and the Unified Services Gateway

The continued growth and evolution of enterprises require them to address a number of forces that affect their network infrastructure, including their branch office WANs. Globalization requires businesses to address network issues in remote branch offices whose numbers are increasing around the world.



Limited IT budgets and resources are also affecting branch offices, forcing centralization of most applications and services within the headquarters. Plus security is critical for enterprises as the threats from the Internet become more sophisticated and complex.

The growth in network complexity stems from the ever expanding number of branch offices and their numerous disparate network appliances and applications, making it challenging for IT organizations to install, provision and maintain. The main challenge lies in keeping deployed equipment operational, secure and available at all times with limited IT resources.

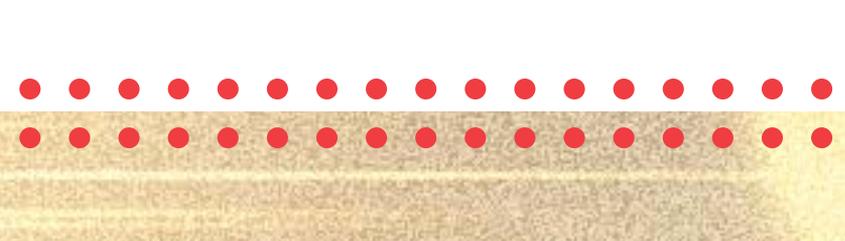
## Alcatel-Lucent's Unified Services Gateways

The Alcatel-Lucent® OmniAccess™ 780 Unified Services Gateway (USG) and the OmniAccess 740 Unified Services Gateway (USG) address these issues with an integrated, simplified solution for enterprise customers that have networked branch or regional offices.



The Alcatel-Lucent OmniAccess 700 USG family of service gateways is comprised of multi-service networking devices designed to reduce the cost and complexity of managing branch office networks.

The OmniAccess USG product family unifies the multiple hardware and software networking solutions typically required for a branch site, adding comprehensive remote management and unparalleled serviceability. IT managers can eliminate cascaded point devices and support security, voice, routing, switching, availability and more on a single, easy-to-manage platform.



## Product Overview

The Alcatel-Lucent OmniAccess 780 USG has six interface slots and the Alcatel-Lucent OmniAccess 740 USG has two interface slots. Both platforms support a selection of interface cards such as 10/100/1000 Ethernet layer 2, T1, E1, and serial synchronous.

### MULTISERVICE SUPPORT

With the Alcatel-Lucent OmniAccess 700 USG product family, customers eliminate the need for cascaded point devices, integrating all required branch services onto one platform. This results in significantly reduced capital expenditures (CAPEX) and enables easy services management.

#### **The Alcatel-Lucent OmniAccess 700 USG product family offers full-featured, enterprise-class support for multiple branch office services including:**

- Stateful firewall with denial of service (DoS) attack prevention, network address translation (NAT), and access control list (ACL) capabilities
- High-performance intrusion detection and prevention (IDS/IPS)
- Voice over IP (VoIP) support through Session Initiation Protocol (SIP), NoE, Dynamic Pinholing in Firewall, and ALG with QoS
- Internet Protocol Security (IPSec) VPN
- Layer 2 Ethernet switching
- Advanced routing with support for required protocols (Border Gateway Protocol [BGP], Open Shortest Path First [OSPF], Routing Information Protocol [RIP] v1/v2)
- QoS capabilities
- Management – domain name system (DNS), Dynamic Host Configuration Protocol (DHCP)
- Multiple WAN interfaces



## AUTOMATIC SERVICE CONFIGURATION

**ModuLive™ License Manager delivers a higher level of automation for IT managers by enabling them to preselect the services and features they need at each branch location.**

ModuLive License Manager allows highly granular licensing options and templates to be predefined based on customer, site or service criteria (e.g., routing/firewall sites, VPN-only sites). Due to the flexible licensing options available, enterprises minimize their costs by paying only for those services that they need in their network.

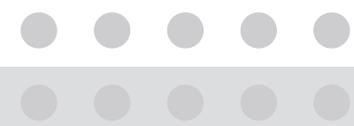


## HIGH PERFORMANCE AND SCALABILITY

**The Alcatel-Lucent OmniAccess 700 USG product family delivers guaranteed performance and scalability for multiple services through its unique OnePass™ approach for common packet classification and inspection across different services.**

With OnePass, the OmniAccess 700 USG product family provides global classification of packets for all services, down to an application's payload level, in a single pass.

Once a packet is classified, it is processed through the active services. With service modules relieved of the need to classify each packet, processor efficiency dramatically increases. As multiple services are added, the latency remains virtually unchanged thereby ensuring a high quality of experience for new and existing users.



## MODULAR ARCHITECTURE

**The Alcatel-Lucent ModuLive software platform is a fully modular and always live software base that provides a level of availability and serviceability not seen before in enterprise branch office products.**

The ModuLive OS enhances uptime by enabling in-service upgrades and configuration changes, and by ensuring that a fault in one service causes minimal or no disruption to other services in operation. This allows data traffic to continue to flow through the system.

Each chassis provides separate slots for different line interface cards, layer 2 Ethernet switch cards and the services engine (which is the packet processing core of the system). The chassis design allows wide flexibility to customize the number and mix of cards used.

### **The features enabled by Alcatel-Lucent modular software and hardware include:**

- Granular in-service software upgrades. New services can be initiated with no disruption to existing services in operation. The system allows new services to be dynamically inserted in the packet flow path, thereby accelerating service introduction in the network.
- Live plug-and-play insertion and removal of cards. The ModuLive Chassis Manager supports dynamic detection of new hardware modules and configuration changes, thereby enabling seamless service continuity during hardware upgrades.





## COMPREHENSIVE SECURITY

**Enterprises are working to bring their employees, customers and partners together to enhance day-to-day business operations by using applications that run over the Internet, taking advantage of low cost connections through the Internet.**

The Internet provides ubiquitous connectivity to enterprises but security threats on the Internet are increasing and show growing levels of sophistication and complexity.

The OmniAccess 700 USG product family offers comprehensive security tools integrated on one system with features such as Integrated Stateful Firewall, VPN, and Intrusion Detection System /Intrusion Prevention System (IDS/IPS). The OmniAccess 700 USG product family architecture delivers high performance and allows security applications to be added quickly and easily. The OmniAccess platforms are self-protecting with software that is remotely upgradeable to incorporate new signatures for threat mitigation without requiring a reboot.

**The OmniAccess 700 USG product family supports security features such as:**

### Stateful Firewall

- Stateful packet inspection, attack detection, static and dynamic NAT, dynamic denial of service (DDoS), ALGs, ACLs and support for 128,000 sessions

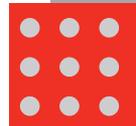
### IDS/IPS

- Detection, prevention modes, automatic signature updates, group-based IDS/IPS

### IPSec VPN

- Site-to-site, encryption algorithms such as Triple Data Encryption Algorithm (3TDEA), Advanced Encryption Standard (AES), public key infrastructure (PKI), NAT traversal, 1,500 VPN tunnels

The IDS/IPS support on the OmniAccess 700 USG products can be used to protect any untrustworthy interface whether it is internal or external. Detection in the IDS/IPS is done in line with all data traffic, which allows quick processing. Signature file updates that mitigate new worms or viruses can be scheduled for automatic download and activation minimizing operator intervention.



## MULTIPLE MANAGEMENT OPTIONS

**The OmniAccess 700 USG is a standards-based solution that is easy to configure, operates seamlessly and integrates into existing networks.**

The common command line interface (CLI) of the OmniAccess 700 USG family is virtually identical to the de facto industry standard. In addition to the CLI, the OmniAccess 700 USG also supports other management options including Secure Shell (SSH), Simple Network Management Protocol (SNMP), and a web-based graphical user interface (GUI).



## RESILIENT, COMPREHENSIVE REMOTE MANAGEMENT

The OmniAccess 780 USG, which addresses larger branch needs, includes the patent pending Lifeline™ management framework. Lifeline, regardless of the state of the system, provides high availability enabled through remote system administration. The OmniAccess 780 USG supports a separate management plane comprised of dedicated management processors in each line card, enabling an N+1 redundant architecture and multiple access mechanisms to reach the system. For instance, even if the main routing and switching modules fail, the administrator will continue to have access to the gateway for monitoring/analysis, configuration changes and restart.

With a common management framework for all network services, Lifeline provides a simplified, uniform view of all components and network services operating in the system. Management is accomplished through a common interface for all services integrated into the OA700 instead of separate appliances, equipment and applications. Granular visibility and control is provided for remotely performing all critical management functions such as system monitoring, service provisioning, configuration management and software upgrades. These features enable IT staff to manage a complete branch office network and multiple services without the need and cost for on-site administration.

## COMPREHENSIVE NETWORK MANAGEMENT

For more comprehensive management of your OmniAccess 700 USGs, Alcatel-Lucent offers OmniVista™, which manages all of your Alcatel-Lucent enterprise equipment including the OmniAccess 700. This network management system (NMS) designed by Alcatel-Lucent streamlines network operation, administration and management by providing:

- Managed firmware revisions
- Push firmware upgrades and configuration changes to remote sites
- Backup and restore configurations
- Restore configurations based on event
- Managed security policies and access control lists



## Application scenarios

With its unique multiservice functionality, ModuLive software system and Lifeline management framework, the Alcatel-Lucent OmniAccess 700 USG product family solutions enable enterprises and managed service providers (MSPs) to address virtually any set of requirements and deployment scenarios for distributed branch office environments. The following are some example deployment scenarios.

### ENTERPRISE PRIVATE NETWORK WITH DEDICATED LINES

The OmniAccess 700 USG products support a wide range of interfaces and associated protocols. In the scenario shown in Figure 1, an enterprise has a diverse set of branch offices in different locations. The OmniAccess 780 and 740 USGs are in the branch office and are connected to the corporate headquarters and other branch offices through a private network. The OmniAccess 780 and 740 USGs integrate multiple services by offering a wide variety of WAN interconnection options to the private network.

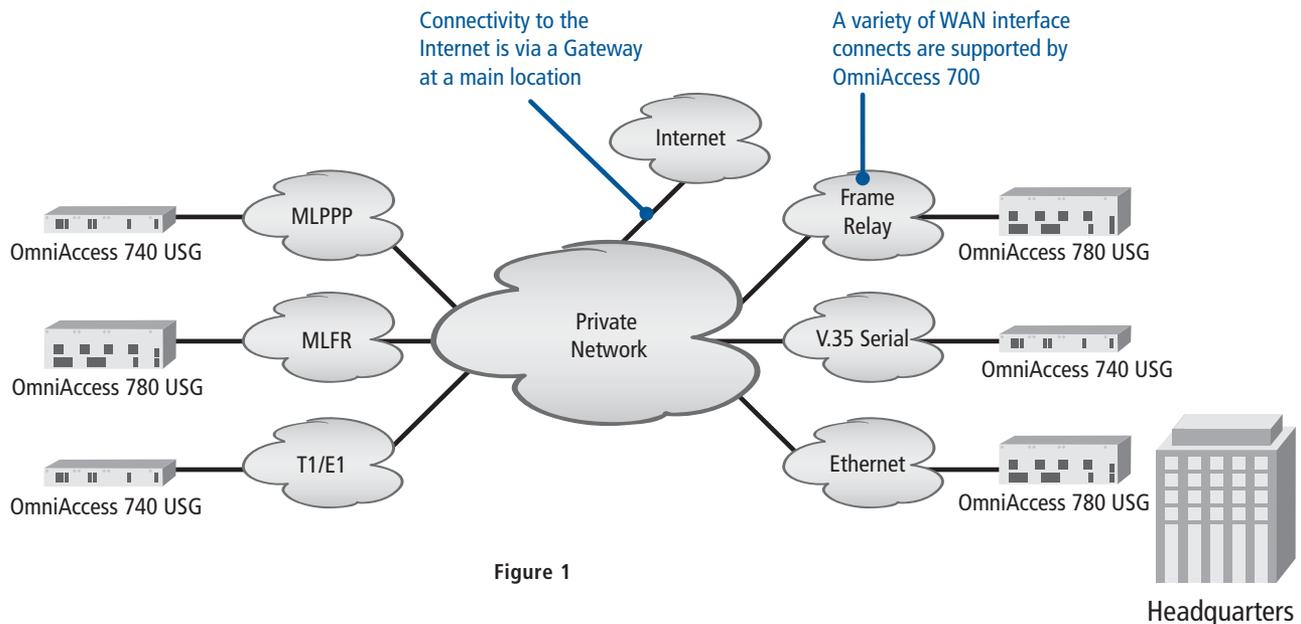


Figure 1

#### Key Benefits:

- Simplified network architecture with a wide variety of interfaces supported on one platform
- Standards based so no need for a forklift upgrade
- Interoperability with existing network technologies and protocols
- Flexible service offerings



### ENTERPRISE WITH VPN USING THE PUBLIC INTERNET

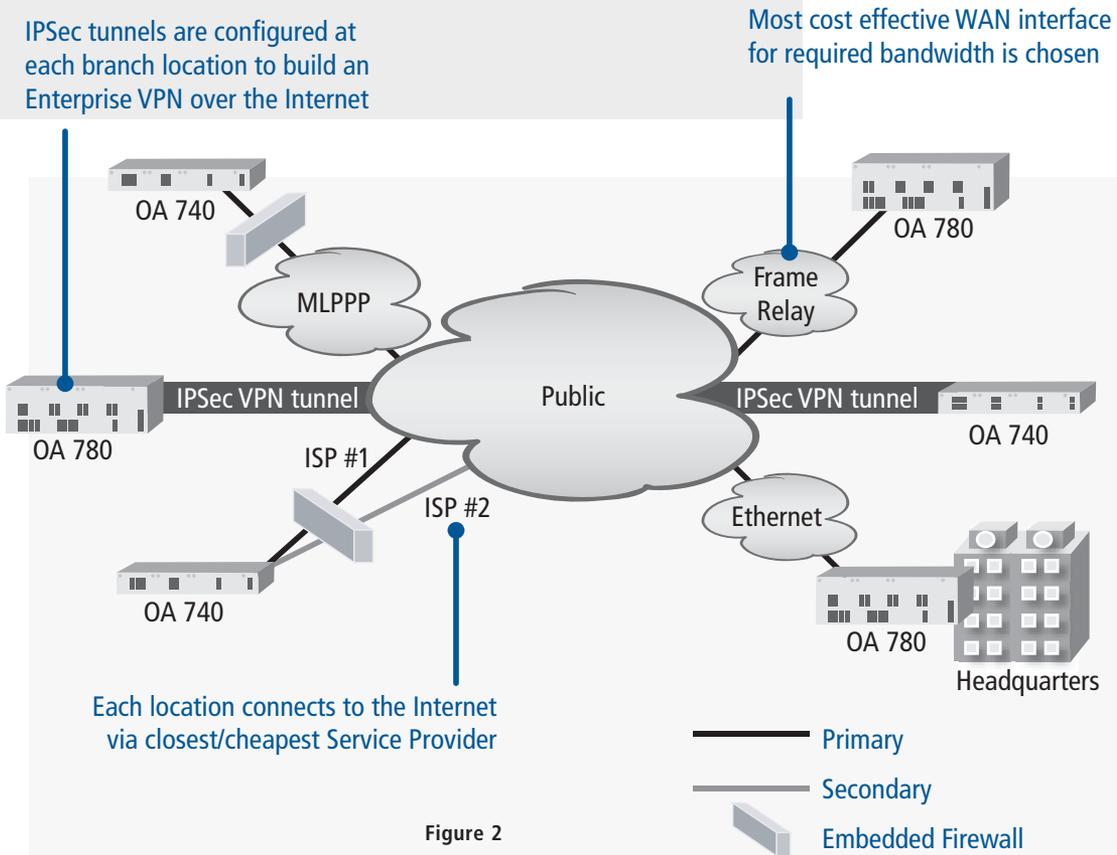
Enterprise customers increasingly rely on the Internet to provide connectivity to remote sites and branch offices.

**However, the threats from the Internet are also increasing in complexity and sophistication. Frequently it is a challenge for an enterprise to keep up with the latest virus mitigation software, yet an enterprise must be constantly vigilant about the security of its network.**

In the application shown in Figure 2, the OmniAccess 780 and 740 USGs are deployed at the branch office with a full, comprehensive suite of security tools including IPSec VPNs and embedded firewall. As per the previous deployment scenario example, the OmniAccess 700 products offer several WAN connectivity options and an enterprise can choose the option that is the most cost effective. However, if an enterprise needs secure connectivity between branch offices, it can be provided with IPSec VPN tunnels that are configured between an OmniAccess 740 USG or an OmniAccess 780 USG. The enterprise can create a full mesh of IPSec VPN tunnels to build a secure enterprise VPN over the Internet.

Additionally the OmniAccess 700 products can be configured with redundant links. In some cases these links can go over different Internet service provider (ISP) clouds to provide cost savings or for enhanced redundancy.

To keep up with more complex viruses from the Internet, new signatures for virus mitigation can be incorporated quickly and dynamically with the self-protecting software that is an integral part of the OmniAccess 700 family platforms.



### Key Benefits:

- Full suite of security tools integrated onto one platform
- Secured tunnels over the internet offers cost effective connectivity between enterprise office locations
- Robust virus mitigation software mitigates security threats
- Sound redundancy options



## UNIFYING AND SIMPLIFYING ENTERPRISE BRANCH SERVICES

IT managers benefit from integrating multiple network services, such as firewall, security, routing and VPNs, onto a single branch office platform, simplifying the increasingly complex enterprise branch networks.

**The management and operation of each service must remain granular and non-overlapping as multiple services are unified. Alcatel-Lucent addresses this requirement with its patent-pending ModuLive software system and Lifeline management framework. Alcatel-Lucent OmniAccess 700 USGs deliver the sophisticated service-oriented capabilities required in such a distributed environment. The network becomes simplified and more streamlined as the enterprise network architecture evolves from multiple devices to one single consolidated OmniAccess Unified Services Gateway.**

In the scenario in Figure 3, an enterprise has separate, dedicated organizations to manage their WAN access, security and LAN switching functions across all of their branch offices.

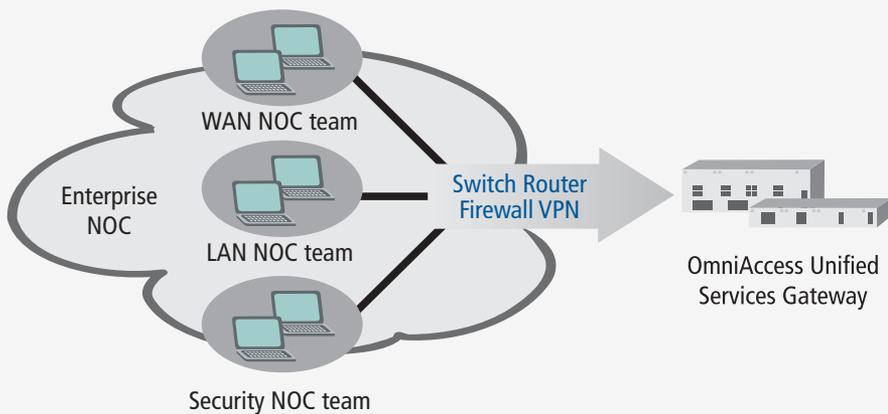


Figure 3

Each team wants full management control over its OmniAccess service module, a similar method to the way in which they used to manage multiple independent devices. Each team continues to preserve their core functions and processes and with the OmniAccess 700 USG product family, operating expenses are greatly reduced.

### Key Benefits:

- Single platform to manage, therefore reduced operating and support costs
- Maximum service availability through modular architecture
- Existing departmental control of individual services via modular service partitioning
- Resilient, comprehensive remote management for all administrators

## CARRIER/MSP DEPLOYMENT

Many organizations have started outsourcing management of their remote branch networks because of their increasing complexity.

**For service providers, this trend provides a new revenue stream by offering a range of value-added services, in addition to basic access and transport. For businesses, this leads to reduced CAPEX and enhanced flexibility.**

With the carrier-class availability and full modularity of its ModuLive software base, Alcatel-Lucent OmniAccess 700 USGs enable carriers and MSPs to flexibly and profitably address the managed services business opportunity. To optimize service management and reduce operating expenses, Alcatel-Lucent provides its Lifeline management framework to allow MSPs to cost-effectively meet varied and changing needs across different customers, while effectively complying with their service level agreement (SLA) requirements.

The Alcatel-Lucent OmniAccess 700 USGs support remote provisioning of services on demand, thereby enabling service providers to rapidly respond to new service requirements from their customers and exploit new revenue opportunities. Using the ModuLive License Manager, highly granular licensing options can be defined based on the customer, site or service, leading to a greater level of control for both service providers and their business customers.



## CARRIER/MSP DEPLOYMENT

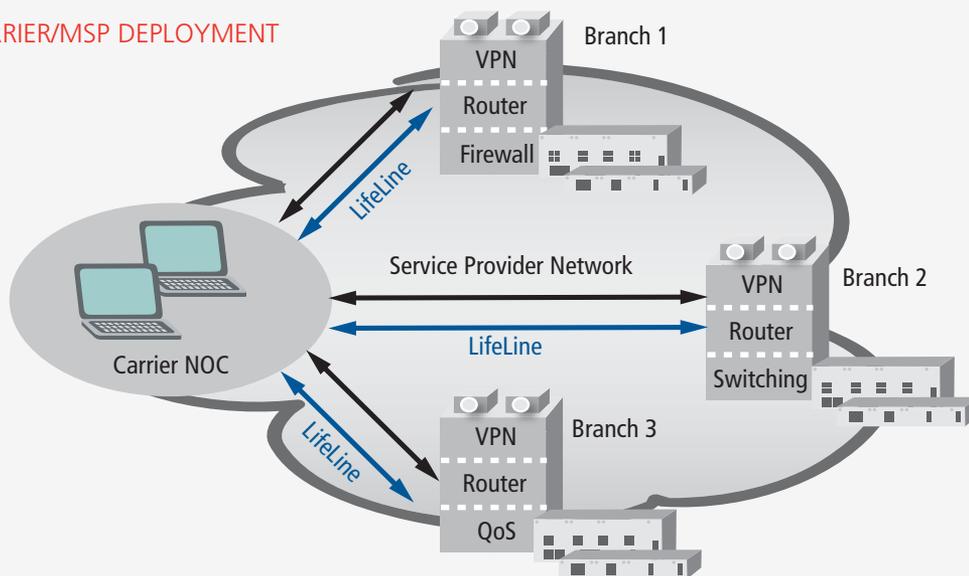


Figure 4

### Key Benefits:

- On-demand provisioning, enabling fast response to new service requirements
- Detailed visibility for effective management of SLAs
- High service availability enabling compliance with SLA requirements
- Total remote management for simplified and lower-cost operations



The Alcatel-Lucent OmniAccess 700 USG family of products enables enterprises and carriers to successfully implement new business models and profitably offer multifaceted services and applications, all consolidated on a single scalable platform that provides high availability and integrated security.

## Ordering information

PART NUMBER	DESCRIPTION
<b>CHASSIS</b>	
OA780-CB-A	OmniAccess 780 chassis bundle – modular chassis equipped with 6 interface module slots, 1 Service Engine card w/512 SDRAM and 2 10/100/1000 ports, 1 Switch Fabric card, 1 removable AC power supply and base software image including Firewall, VPN, and IDS/IPS services.
OA780-RCB-A	OmniAccess 780 redundant chassis bundle – modular chassis equipped with 6 interface module slots, 1 Service Engine card w/512 SDRAM and 2 10/100/1000 ports, 1 Switch Fabric card, 2 removable AC power supplies for N+1 redundancy and base software image including Firewall, VPN, and IDS/IPS services.
OA740-CB-A	OmniAccess 740 chassis bundle – modular chassis equipped with 2 interface module slots, 1 Service Engine card w/512 SDRAM and 2 10/100/1000 ports, 1 internal AC power supply and base software image including Firewall, VPN, and IDS/IPS services.

### CHASSIS SUBSYSTEMS

OA780-PS400A	400 watt AC hot-insertable power supply for the OmniAccess 780 system.
OA780-SF	Spare Switching Fabric card for the OmniAccess 780 chassis.
OA7-SE	Spare Service Engine card for both the OmniAccess 740 and the OmniAccess 780 chassis.

### INTERFACE MODULES

OA7-T1E1-4	OmniAccess 780/740 4-port T1/E1 interface module with integral CSU/DSU. Supports Frame Relay, MFR, PPP, multilink PPP and HDLC. Field-installable.
OA7-USP-4	OmniAccess 780/740 4-port USP (Universal Serial Port) module providing 2 SCSI connectors with each connector supporting 2 serial synchronous ports. Each port supports data rates from 64Kbps up to 2Mbps. Field-installable.
OA7-GE-8	OmniAccess 780/740 8-port 10/100/1000 Layer 2 LAN switching Ethernet module with RJ-45 connectors. Field-installable.

### SERIAL CABLES

OA7-YSS-V35MT-3	OmniAccess 780/740 Y-Cable, 10-foot (3 meter), shielded, male-male, supporting two serial V. 35 DTE connections
OA7-YSS-V35FC-3	OmniAccess 780/740 Y-Cable, 10-foot (3 meter), shielded, female-female, supporting two serial V. 35 DCE connections
OA7-YSS-X21MT-3	OmniAccess 780/740 Y-Cable, 10-foot (3 meter), shielded, male-male, supporting two serial x.21 DTE connections
OA7-YSS-X21FC-3	OmniAccess 780/740 Y-Cable, 10-foot (3 meter), shielded, female-female, supporting two serial x. 21 DCE connections

# Alcatel-Lucent OmniAccess Unified Service Gateways (USG)



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