

Dial Access Server

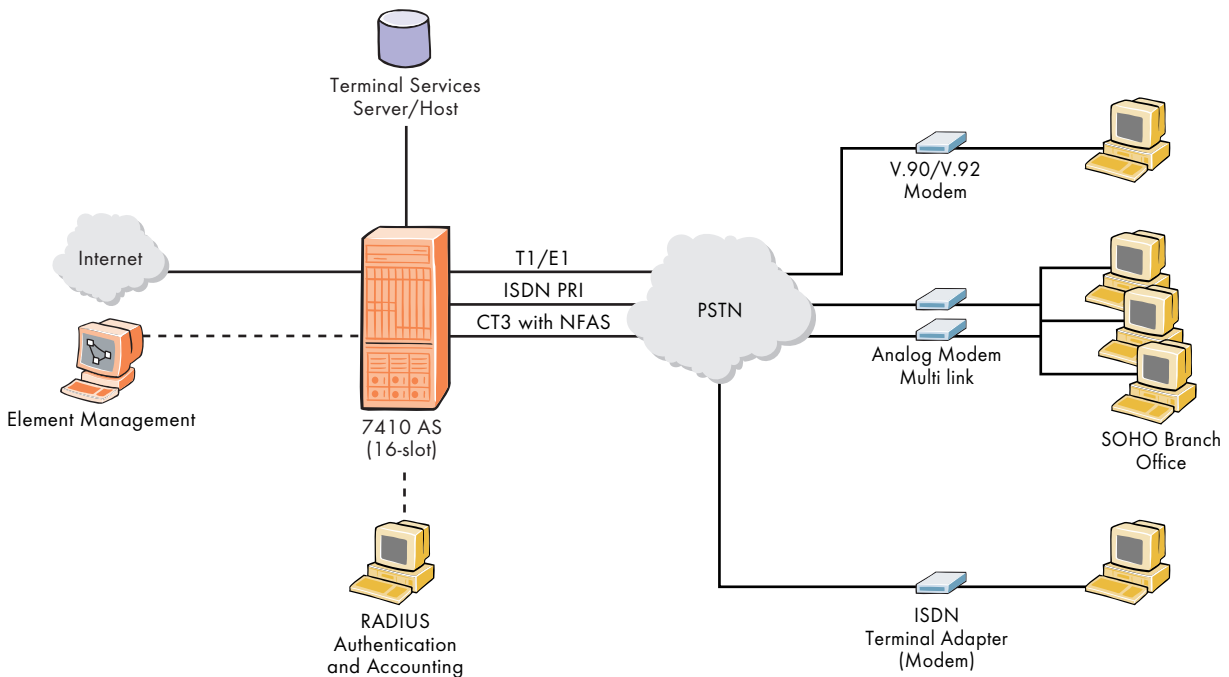
Continued demand for cost-effective dialup Internet access services has encouraged service providers to seek out new high-capacity, low-maintenance platforms from which to offer dialup access services. The Alcatel 7410 Access Server (AS) has been developed from the ground up specifically to meet the operational and business objectives of growing Internet access providers. The Alcatel 7410 AS is the first dial access server to successfully combine the best-in-class capacity and performance required by today's largest Internet access providers with the high availability that voice network operators around the world have come to expect—all at a low cost per port.



Product Highlights

- ▼ Up to 4,032 concurrent sessions per shelf, or up to 10,752 per standard equipment rack
- ▼ Distributed processing architecture for highly scalable performance
- ▼ Modem ports support V.90, V.92 and voice and fax over IP services
- ▼ Virtual networking with virtual routers and tunneling protocols
- ▼ RADIUS-based subscriber management, including virtual subscriber networks for wholesale services, with Alcatel's 5735 Service Management Center (SMC)
- ▼ Compliance with standard and vendor-specific RADIUS attributes for authentication and accounting
- ▼ SS7 signaling support via media gateway control protocols to Alcatel 5424 Call Signaling Gateway (CSG)
- ▼ Hardware redundancy and fault-tolerant application management software for high-availability operation
- ▼ Flexible mix-and-match hardware configuration for service versatility
- ▼ Complete signaling support including ISDN D-channel, NFAS, CAS and country-specific R1 and R2
- ▼ Carrier-grade, NEBS Level 3 certification
- ▼ 10- and 16-slot models with AC or DC power

▼ Figure 1: Dialup access



High-capacity Dialup for Internet Access

The Alcatel 7410 AS is ideal for offering high capacity analog modem and ISDN dialup access to the Internet, in either a retail or wholesale business model. With 336 digital modems per slot and channelized T3 interfaces, the 7410 AS can be configured to support up to 4,032 concurrent modem calls in a single 16-slot shelf and up to 10,752 modems in a standard equipment rack. The Alcatel 7410 AS features Conexant's digital modem technology with support for both ITU V.90, V.92 and K56flex standards, and now voice and fax over IP. The Alcatel 7410 AS provides a complete suite of access services, including modem and ISDN B channel termination, asynchronous and synchronous PPP, multilink PPP (including for analog modems), terminal services (including TCP-clear and SLIP/CSLIP), V.110 rate adaptation and Alcatel's own Quality of Access for tiered service offerings. Support for RADIUS authentication/accounting and IPSec ensure the delivery of secure, billable Internet services.

System capacity highlights

	16-slot chassis	10-slot chassis
Modem capacity with 2-port CT3	4,032	2,688
Modem capacity with 1-port CT3	2,016	2,016
Modem capacity with 16-port CE1	2,016	1,680
Modem capacity with 16-port CT1	2,016	1,344

High Availability and Fault Tolerance

The Alcatel 7410 AS offers unmatched availability that translates into low maintenance and less work for busy network operations staff. High availability begins with redundant system buses and extensive hardware redundancy. Every essential hardware and software component can be backed up by at least one redundant copy. All hardware components are hot swappable, including system control modules, line interfaces, modem modules, fans and power supplies. The internal Fault Tolerant Application Manager (FTAM) software detects internal and external outages and automatically restores service when possible. Automatic Circuit Backup (ACB) on PSTN interfaces and Redundant Port List (RPL) on packet interfaces allow nearly instantaneous recovery from both equipment faults and external link failures.

Wholesale Dial Access Services

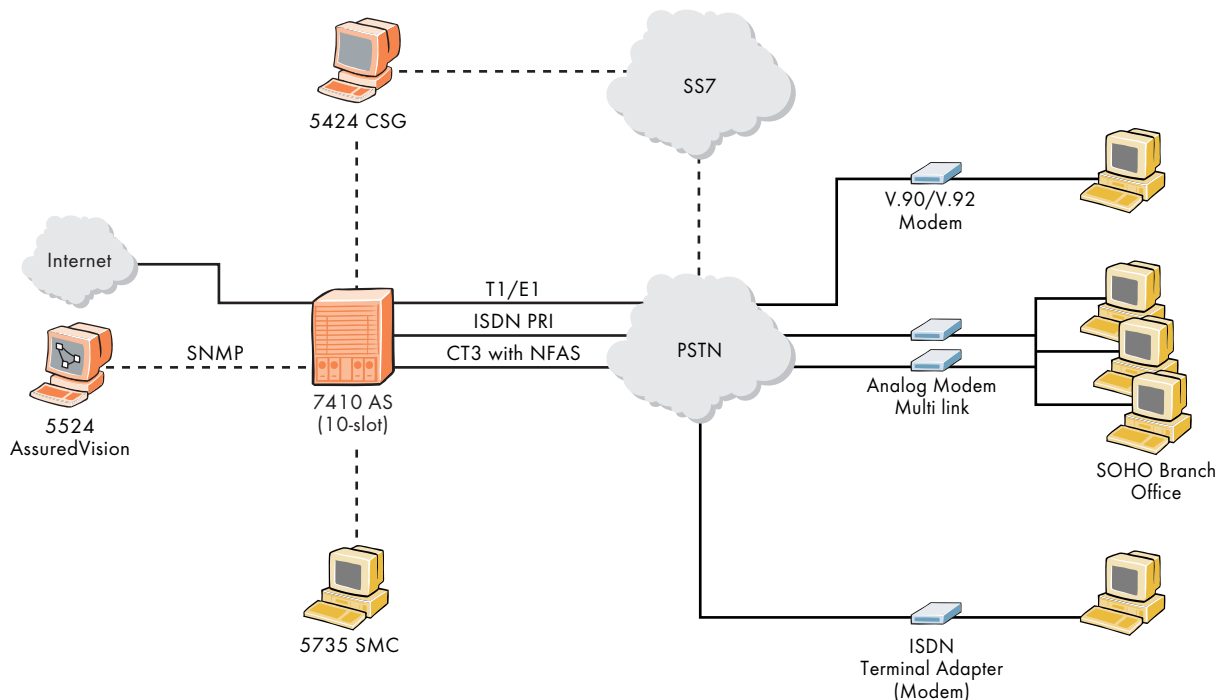
Tunneling protocols like L2TP and ATMP, virtual router support and special features like TCP-clear and detailed call logging provide the basis for wholesale dial access service offerings using the Alcatel 7410 AS. In addition, the Alcatel 5735 Service

Management Center (SMC) provides a complete RADIUS-based subscriber and resource management system for managing IP address pools, modem resources and subscriber profiles across a network of Alcatel 7410 Access Servers and for multiple virtual networks (subscriber communities). The SMC provides proxy RADIUS support, RADIUS/TACACS interworking, real time customer views and complete service statistics, billing and accounting information per virtual network.

SS7 Connectivity for PSTN Offload

When combined with the Alcatel's 5424 Call Signaling Gateway (CSG), the Alcatel 7410 AS interacts with SS7/CCS7 networks worldwide to provide new solutions for managing converged networks of voice and data users. The Alcatel 7410 AS and 5424 CSG support leading media gateway control protocols to off-load dial Internet traffic from the PSTN using SS7/CCS7 signaling, thereby reducing congestion and simultaneously enabling a range of new intelligent converged services.

▼ Figure 2: SS7 connectivity



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Features

Common Equipment

- ▼ 10-slot and 16-slot shelves
- ▼ Redundant fans, clock and alarm modules
- ▼ N+1 redundant power supplies
- ▼ BITS support (16-slot shelf)

Ingress (PSTN) Interfaces

- ▼ Dual-port CT3, CT3, 16-port CT1, 16-port CE1, 4-port CT1, 4-port CE1 with integrated CSU/DSUs
- ▼ ACB for fault restoration
- ▼ ISDN PRI, NFAS, CAS, country-specific R1 and R2 signaling
- ▼ Inter-machine Trunk (IMT) support with signaling gateways

Egress (Packet) Interfaces

- ▼ 4-port 10/100 Mb/s auto-sensing switched Ethernet
- ▼ OC-3/STM-1 ATM, multimode and singlemode (IR, LR) fiber
- ▼ E3, DS3 ATM
- ▼ 16-port T1/E1 Frame Relay/PPP
- ▼ 4-port (up to 8 Mb/s) Serial Frame Relay/PPP

Access Services

- ▼ Analog modem and ISDN B channel termination
- ▼ PPP (sync and async), multilink PPP, analog multilink PPP
- ▼ V.110 rate adaptation, data over voice
- ▼ Terminal services, TCP-Clear, SLIP/CSLIP
- ▼ Quality of Access (tiered service classes)

Digital Modems

- ▼ V.90, V.92, K56flex, V.34, V.32bis, V.32, V.22bis, V.22A/B, V.23, V.21
- ▼ Bell 212A and 103
- ▼ V.42/LAPM, MNP 2-4 error correction
- ▼ V.42bis/MNP 5 data compression

Data Compression

- ▼ STAC, MS-STAC
- ▼ VJ TCP/IP header compression

ATM

- ▼ ATM UNIv3.1 PVCs
- ▼ ILMIv4.0/3.1
- ▼ UBR, CBR, GFR rt-VBR, nrt-VBR traffic classes
- ▼ RFC 1483 encapsulation (bridged and routed)

Frame Relay

- ▼ FRF.1.1 UNI PVCs
- ▼ ANSI Annex D, ITU Annex A, GOF LMI
- ▼ RFC 1490 encapsulation (bridged and routed)
- ▼ Inverse ARP

Routing

- ▼ RIP, RIPv2, OSPFv2, BGP-4, IGMP, static routes, routing filters

Virtual Networks and Security

- ▼ RADIUS, PAP/CHAP, IPSec, packet filtering, ATMP, L2TP (LAC and LNS), virtual routers (128)

SS7 Interface

- ▼ Via Alcatel 5424 CSG
- ▼ Media gateway control protocols

Subscriber Management

- ▼ Via Alcatel 5735 SMC
- ▼ IP address pool, modem pool and subscriber group management
- ▼ Billing and accounting, statistics, report generation

System and Network Management

- ▼ Local/remote (telnet) CLI, Syslog, RADIUS AAA, TACACS (with SMC), remote software upgrades via TFTP, modem diagnostics support, SNMP, Alcatel 5524 AssuredVision Java-based element management system with HP OpenView integration available on Windows NT and Sun Solaris

Physical Dimensions

10-slot chassis

- ▼ Height: 44.45 cm (17.5 in.)
- ▼ Width: 48.26 cm (19.0 in.)
- ▼ Depth: 44.13 cm (17.38 in.)

16-slot chassis

- ▼ Height: 89 cm (35.0 in.)
- ▼ Width: 43.5 cm (17.15 in.)
- ▼ Depth: 38.1 cm (15.0 in.)

Power

- ▼ 85 to 132 and 170 to 264 V AC, 50 to 60 Hz -48 V DC

Environmental

- ▼ Operating temperature range: 0° to 40° C (32° to 104° F)
- ▼ Storage temperature range: -20° to 65° C (-4° to 149° F)
- ▼ Operating humidity: 0 to 80%, noncondensing

Regulatory Compliance

- ▼ UL1950, CSA950, IEC950, CISPR 22, CE Mark
- ▼ EN60950, EN55022 Class A, EN50082-1 1997
- ▼ FCC Part 15 Class A, FCC Part 68
- ▼ Bellcore NEBS Level 3



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