

Aastra Network Access

CVX Policy Manager

Central point of network control
for policy management

- Controls and analyzes customer behavior and network usage
- Balances data loads, allocates port usage, enforces access policies, and optimizes network performance
- Eliminates the need to dedicate a physical port to a particular user or level of service
- Provides the means to differentiate service offerings
- Offers a single point of service definition
- Supports rich port wholesale features
- Provides a single point of control for managing VPN tunnels
- Carrier-grade supports 300,000 concurrent ports in a dual server redundant configuration
- Supports both the CVX 1800 and CVX 600 Multi-Service Access Switches

Product Brief

The wholesaling market emerged in response to the growing trend of service providers and corporations divesting themselves of their network management responsibilities, allowing them to focus their internal resources on core business objectives. Service providers are concentrating on the data content of their services, while corporations are looking to outsource their remote access and VPN network management activities.

Aastra Network Access CVX Policy Manager takes service, functionality, and capacity to a new level, by delivering network-wide intelligence and policy management, resulting in a complete “wholesale” solution when used with either the CVX 1800 or CVX 600 Multi-Service Access Switch. The scalable architecture and robust functionality of the CVX Policy Manager provide the critical layer of network intelligence and management necessary to deliver the strategic solutions required by today’s high-density, high-volume Internet services market.

The CVX Policy Manager’s rich feature set enables wholesalers to control and analyze customer behavior and network usage in an effort to optimize network performance. With the CVX Policy Manager, wholesalers can:

- Balance data loads, allocate port usage, enforce access policies, and optimize network performance
- Reduce costs by maximizing physical port usage by eliminating the need to dedicate a physical port to a particular user or level of service
- Provide the means to differentiate service offerings: Premium versus Basic, Guaranteed Ports, and set different settings
- Offer a single point for service definition by providing the ability to dynamically define an ISP’s service throughout the whole network, offering centralized service configuration in one location and the ability to view network-wide service utilization
- Provide JIT provisioning to allow new ISP service definition in minutes and the ability to instantly activate service definition across a country-wide network

Utilizing the CVX 1800 and CVX 600 Virtual POP feature to provide extensive dial wholesale services

The CVX Multi-Service Access Switches’ Virtual POP feature enables wholesalers to partition the CVX Multi-Service Access Switch into a series of mutually independent access switches, each of which has its own authentication method, database, billing system, and management interface. This configuration allows service providers and corporations to “virtually” locate their POP within their wholesaler’s network.

The CVX Policy Manager provides the network intelligence and the control necessary to regulate the varying level of calls and data traffic associated with wholesaling.

Rich port wholesale features

- Call assignment based on DNIS, realm, or a combination of both
- One or more Virtual POPs can share a port limit
- Overflow limits can be defined and charged at a premium rate
- Port limits can be adjusted by time-of-day and day-of-week
- Per user concurrent session limits can be set per Virtual POP, or set on an individual user basis when proxying to a customer’s RADIUS server
- Supports bulk imports of CLIDs and deltas to CLID filter lists
- Ports can be reserved for particular customers across a hunt group
- Pre-authentication allows port limits to be checked before a call is answered
- Calls can be refused if CLID has been blocked

- Centralized IP address pool management
- Ability to set DiffServ byte per Virtual POP
- Virtual POP statistics collection for Service Level Agreements (SLAs) reporting
- VPOPs can be selected based on CLID and DNIS
- Wildcards can be used in name-based VPOPs
- Non-numerical characters can be used in DNIS
- Provides support for CVX STM-1 DACC port guarantee feature

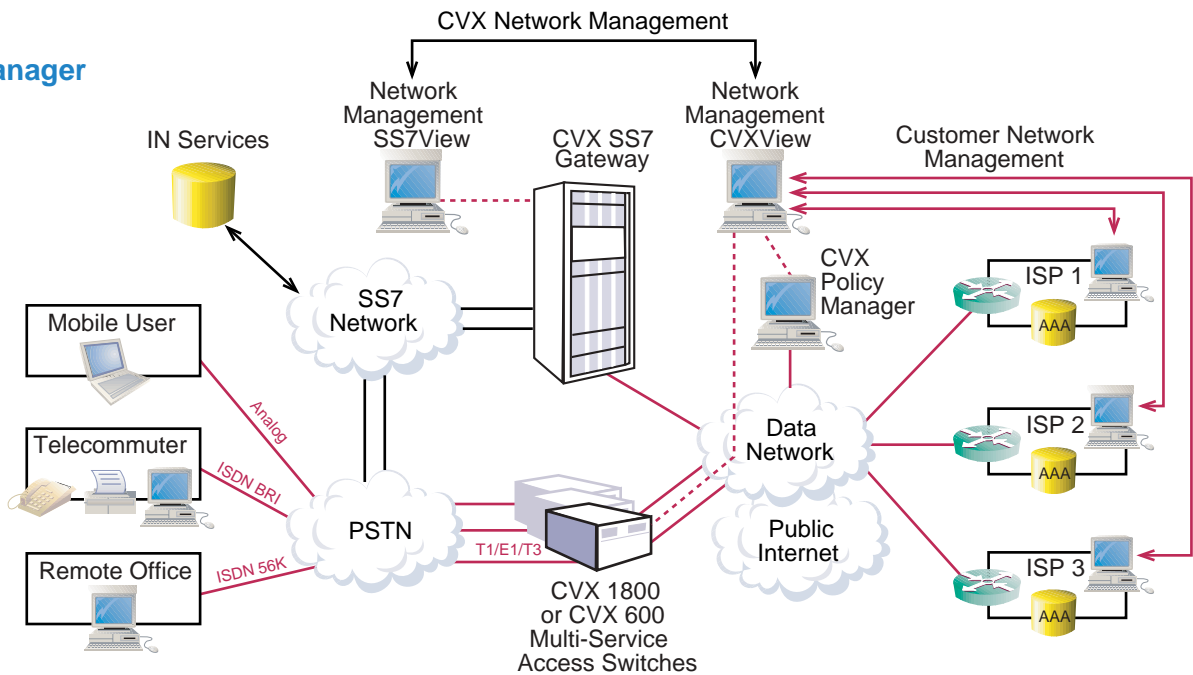
Port allocations and billing models supported

Port allocation maintains a view of all calls and enforces ISPs’ or corporations’ total port quotas across the network. This utilization can be viewed both by the wholesaler and the ISP/corporation, and ensures that they best utilize all subscribed virtual modem ports while preventing overuse of the network. Basic, Time of Day, Premium, and Guaranteed Port Allocations are offered.

Overflow quotas enable ISPs and corporations to temporarily exceed their base subscribed port limit without incurring additional premium charges due to excess port usage. Overflow capability allows users to define an “overflow quota” for each phone group or across multiple phone groups.

Billing models using the CVX Policy Manager can segment the network to offer usage, user, or virtual port billing models using the same modem pool, instead of separating modems into different pools.

CVX Policy Manager Configuration



The CVX Policy Manager provides a single point of control for managing VPN tunnels

- L2F and L2TP support
- Tunneling Gateway load balancing and capacity limiting
- Tunneling Gateway failure detection and handling
- Tunneling of Multichassis Multilink PPP (MMP) calls to the same Tunneling Gateway

Load balancing intelligently distributes service provider traffic across multiple Tunneling Gateways based on each gateway's optimum performance capacity. The CVX Policy Manager relies on user-defined Tunneling Gateway weights to determine the relative capacity. The CVX Policy Manager attempts to load balance across multiple Tunneling Gateways, so that the comparative traffic load on each corresponds to the provisioned Tunneling Gateway weight. Capacity limiting can be absolute, meaning that the Tunneling Gateway will not go above its call capacity.

Failure detection and handling evaluates the Tunneling Gateway based on the call termination information sent by the CVX Multi-Service Access Switches by identifying the operational status as either running, failed, or recovering. When the provisioned threshold for a particular Tunneling Gateway is exceeded, it is labeled failed. An alarm is raised via SNMP default management, and the gateway is removed from the load balancing algorithm. When the Tunneling Gateway is operational again, it is put back into service with the status recovering.

Multichassis Multilink PPP protocol binds multiple PPP connections (i.e. 2 B-channels of a BRI call or 2 analog calls) together to deliver increased throughput capacity to the end user to reduce wholesaler operational costs. The CVX Policy Manager ensures that all strands of a multilink call terminate on the same Tunneling Gateway.

CVX Policy Manager strengths

Unparalleled density/ performance

- Supports 300,000 concurrent ports in a dual server redundant configuration
- Insignificant call-processing delay—supports 250 calls per second in dual server redundant configuration
- Performance operations measurements include CPU usage, memory usage, and RADIUS packet processing

Architecture

- Supports geographically dispersed CVX Multi-Service Access Switches within a single domain

Radius proxy

- Makes network changes or expansions invisible to customers' RADIUS servers
- Ability to proxy to multiple servers for accounting purposes
- Can strip off realm portion of user name before forwarding it
- Includes proposed IP address from pool as "IP Hint" for customers that require it
- Arbitrary RADIUS attributes can be

added to Access Accept messages from customers' servers

- Arbitrary filtering of unwanted RADIUS attributes from customers' servers
- Supports Call Reject Reason RADIUS attributes

System redundancy and resiliency

- Servers deployed in pairs for load balancing and redundancy
- CVX 1800 or CVX 600 will failover from primary to backup CVX Policy Manager
- Servers keep each other in sync with network state on a call-by-call basis
- Periodically audit CVX Multi-Service Access Switches for call information

Centralized management

- Advanced, intuitive Web-based GUI management with CVXView; enables fast and easy provisioning, surveillance, and trouble-shooting
- Command line interface allows scripting
- Virtual POP SLA reporting via CVXView Performance Reporter
- SNMP traps and alarms
- Provides the ability to incrementally update the CPM configuration from a file without restarting the server

Key specifications

Minimum system requirements

- 440 MHz Sun Enterprise Ultra 10S with 384MB RAM
- 9 GB Hard Drive
- 10/100BaseT Ethernet Card
- Tape or network backup recommended

Operating system

- Solaris 2.6 or 2.7

Capacity

- Supports 300,000 concurrent ports in a dual server redundant configuration

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