

Product Announcement BreezeACCESS-TM



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Introduction

Service provider's profitability hinges on the ability to increase revenue from existing resources through over subscribing network bandwidth and offering new lucrative services. These services may be tiered or differentiated services, like "gold," "silver," or "bronze" Service Level Agreements. They can include CoS (Class of Service) and guaranteed bandwidth for critical services such as Oracle, Citrix, and VoIP. In fact, there are many dozens of protocols that can be shaped to both improve network efficiency (such as limiting applications like KaZaA and Morpheous) and increase revenue.

Since the usage characteristics of Access Networks changes during the day, the rules of offering different services to different users, and controlling different protocols in the access network, should be flexible and time dependent.

As the need and presence of differentiated services grow and customers become more aware of the SLA they pay for, service providers must have means to assure customers that they stand to their SLA commitment. In addition, operators must assure proper billing of the customers according to these SLA's. This need grows as the network scales and higher bandwidth elements, such as Alvarion new BreezeACCESS high bandwidth models, enter into the network.

The new BreezeACCESS TM (Traffic Manager) is offered to address these compelling challenges and opportunities. Over 200 protocols and applications can be monitored and shaped using the Traffic Manager. In addition, the BreezeACCESS TM offers accounting modules to enable billing per your specific policies.

System Description

System Overview

Alvarion's BreezeACCESS TM provides a suite of products that can significantly strengthen the service provider's ability to adhere to its Service Level Agreements commitments as well as easily address the problems of traffic monitoring and interfaces to billing systems. The main functions include:

Multi-Layer Policy Support - The BreezeACCESS TM's multi-layer policy support was especially designed for the quality of service (QoS) needs of services providers. One can create a "Pipe" (super-policy) to define a customer or an Access Unit and then define "Virtual Channels" (policies) that enable different levels of QoS for different types of traffic or different subscribers connected to this access unit.

Policy Editor - The Policy Editor is used to set up QoS. Double-clicks conveniently launch editors for defining tiered services and hosts.



Monitor Network Activity - The Java-based BreezeACCESS™ Traffic Monitor presents real-time macro and micro views of traffic and performance from a single, easy-to-read GUI.

Implement Application and IP-Based Accounting - The accounting software add-on for the BreezeACCESS™ collects traffic data per session, gathering information on source address, destination address, application type, and policy. The accounting reporter tool (part of the accounting add-on package) uses the collected data to create tabular and graphical reports that assist in offering usage-based billing through third-party accounting tools. Reports can also be saved in a large variety of formats and customized by the service provider to give to the reports their own corporate look.

End-to-End QoS Delivery and MPLS Support - To achieve end-to-end QoS, BreezeACCESS™ uses industry-standard Type of Service (ToS) and Differentiated Services (DiffServ) protocols. Based on its classification results, the BreezeACCESS™ can mark the outgoing packets with DiffServ values such as "Assured" or "Best Effort" to signal the entire network of the desired QoS. You can also use the BreezeACCESS™ as an edge device in MPLS networks for enhanced traffic classification and advanced monitoring and accounting.

DoS Protection - The BreezeACCESS™ detects known types of DoS attacks and offers a first line of defense that enhances the performance of firewalls and internal network devices. By deploying BreezeACCESS™, one can monitor, record, and block malicious traffic flows and alert users of imminent attacks.

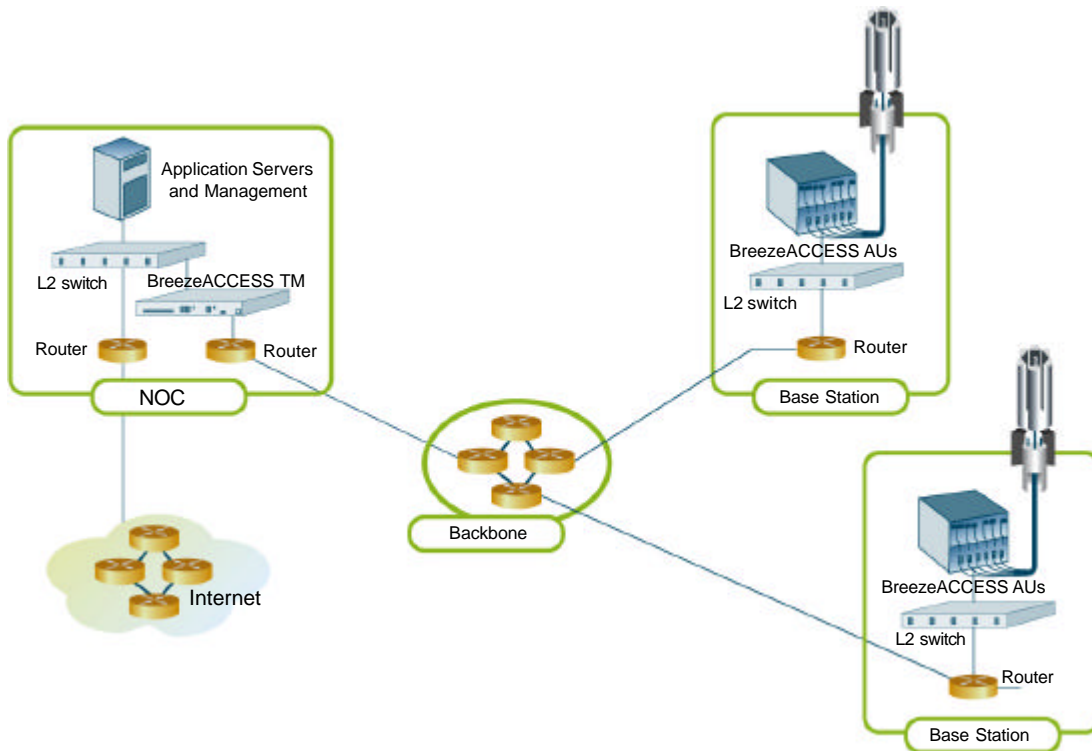
Secure Device Management - The BreezeACCESS™ offers a dedicated management port that is physically separated from the ports that carry your subscriber's traffic. This prohibits unauthorized access to the device and enables out-of-band management.

LCD/Soft Key Configuration - An LCD and set of soft keys located on the front panel of the BreezeACCESS™ speed the initial configuration of the device. Instructions on the LCD guide through the process and all data is entered using the four-key keypad. The LCD also shows a variety of system status messages including the current inbound/outbound bandwidth.

The BreezeACCESS™ can be placed in either the Network Operation Center (NoC) or the BreezeACCESS Base Station using the different available models.

NoC Equipment

The centralized architecture locates the BreezeACCESS TM in the NoC as described in the figure below.

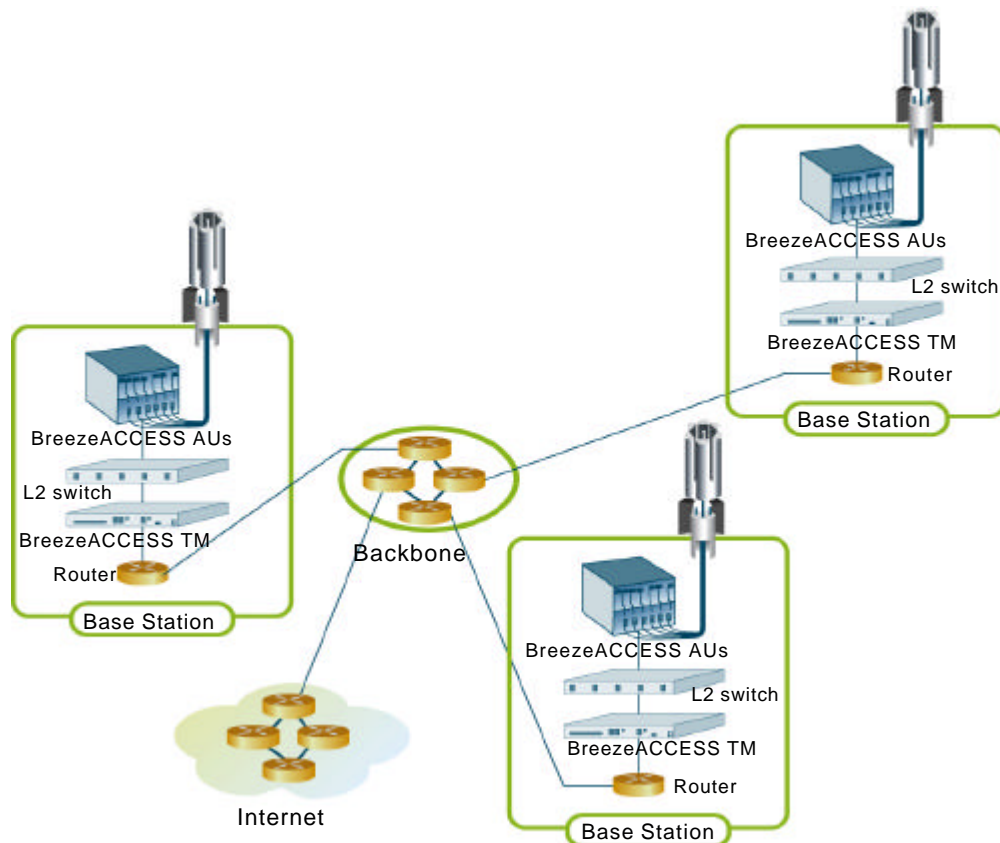


Using this architecture allows the service provider to easily control peer-to-peer applications (such as KaZaA), monitoring of the network traffic and provide fairness between customers or customer groups. Also using the accounting module the service provider can collect accounting and billing information on the users and export them to external databases or create reports using the reporter software tool (part of the accounting add-on package).

The TM-1045 and TM-1100 are suitable for 45 and 100 Mbps (respectively) of monitored and controlled traffic and are the recommended models for this architecture.

Base Station Equipment

The distributed architecture locates the BreezeACCESS TM in each BreezeACCESS base station as described in the figure below.



Using this architecture allows the service provider to control and monitor the network traffic per each Access Unit. Assuring complex service level agreements for different users (especially in MDU/MTU installations), monitoring online network congestion and planning future network expansions is easily done when the Traffic Master is placed in each base station. Also, using the accounting module the service provider can collect accounting and billing information on the users and export them to external databases or create reports using the reporter software tool (part of the accounting add-on package).

The TM-502 and TM-510 are suitable for 2 and 10 Mbps (respectively) of monitored and controlled traffic and are the recommended models for the BreezeACCESS base stations. A new base station with one E1/T1 connection can be controlled by the TM-502, which can be s/w upgraded to the TM-510 once more users are connected to it and the backbone connection is expanded to more E1's/T1's.

For the BreezeACCESS-OFDM base stations the TM-1045 with 45 Mbps capacity should be used.

System Highlights

- w Real time and long term traffic monitoring.
- w Two levels of traffic classifications: PIPE and VC.
- w Traffic classification by the following criteria's: Source and destination IP/MAC address (with IP range/subnet option), network Protocols and Applications, TCP/UDP port number (with port range option), HTTP content inspection, DiffServ/TOS byte or IP Precedence bits, VLAN 802.1q Tagging, Time of day/week/month.
- w SLA management. Retrieve users records (including Class of Service) from LDAP server directory and respectively build users policies
- w Enhanced protocol support, including: HTTP content, Citrix, Oracle, P2P, H.323 and RTSP
- w QoS options: Ten levels of priorities, minimum/maximum bandwidth, guaranteed bandwidth, CBR (Constant Bit Rate).
- w QoS per connection or per traffic.
- w Fairness between equal-level-priority traffic flows.
- w Protection from DoS attacks.
- w Over subscription management. Coloring (TOS Bit) out of profile packets and allows subscribers traffic by priority only.
- w IP accounting facility – Count traffic usage by users and applications (optional software packages). Export statistics to external billing system via RADIUS or ODBC interfaces.
- w Three-10/100Mbps Half/Full Duplex Ethernet Interfaces RJ45.
- w Standard 1U by 19-inch, rack mountable, complete fault tolerance.
- w SNMP agent provides basic traffic information per PIPE or VC.
- w S/W upgrades for increased capacity.

Positioning, Key Benefits and Advantages

The BreezeACCESS TM is the ideal solution for service providers and operators who are looking for ways to better understand and control their IP networks, to provide better user satisfaction to their customers and be able to support more users on the same infrastructure, thus enlarging the revenues and improving the business case.

Using the Traffic Manager allows the service provider three main advantages when operating his IP network and managing the services he provides:

- w **Online monitoring of the network traffic** – provides on line information on network congestions and helps identifying potential network problems as they occur.
- w **Long term monitoring and reporting** – using the NetHistory application and the add-on accounting s/w, the BreezeACCESS TM offers a wide variety of reports and graphs of the network traffic. This is a very useful tool for future planning of the network and identifying where network expansions are needed.
- w **QoS enforcement** – using the BreezeACCESS TM, providing fairness between the customers, controlling peer-to-peer protocols and assuring SLAs to the users becomes possible at a very low cost.

Field Experience

The BreezeACCESS TM system is released to the market after performing trials in a few mid-size wireless ISPs of Alvarion's US customers where the system has successfully demonstrated its powerful added value.

Product Availability

The BreezeACCESS TM products are officially released and available as of December 2002.

Ordering Information

Following are the part numbers that comprise the BreezeACCESS TM products. Note the BreezeACCESS TM fully operates only when at least one Alvarion unit (excluding the BreezeACCESS TM) is available in the network and has IP connectivity to the BreezeACCESS TM.

Product Name	Product number	Description
BreezeACCESS TM TM-502	811750	BreezeACCESS TM including shaping, monitoring and hardware bypass. Optimized for network speeds up to 2 Mbps; up to 12,000 simultaneous connections, 256 pipes and 2,048 QoS policies. Including 12 months s/w & h/w warranty
BreezeACCESS TM TM-510	811751	BreezeACCESS TM including shaping, monitoring and hardware bypass. Optimized for network speeds up to 10 Mbps; up to 20,000 simultaneous connections, 512 pipes and 2,048 QoS policies. Including 12 months s/w & h/w warranty
BreezeACCESS TM TM-1045	811752	BreezeACCESS TM including shaping, monitoring and hardware bypass. Optimized for network speeds up to 45 Mbps; up to 64,000 simultaneous connections, 1,024 pipes and 4,096 QoS policies. Including 12 months s/w & h/w warranty
BreezeACCESS TM TM-1100	811753	BreezeACCESS TM including shaping, monitoring and hardware bypass. Optimized for network speeds up to 100 Mbps; up to 96,000 simultaneous connections, 1,024 pipes and 4,096 QoS policies. Including 12 months s/w & h/w warranty
BreezeACCESS TM TM-502-A	811754	Bandwidth accountant software module for BreezeACCESS TM models TM-502 & TM-510. Including 12 months s/w & h/w warranty.
BreezeACCESS TM TM-1045-A	811755	Bandwidth accountant software module for BreezeACCESS TM models TM-1045. Including 12 months s/w & h/w warranty.
BreezeACCESS TM TM-1100-A	811756	Bandwidth accountant software module for BreezeACCESS TM models TM-1100. Including 12 months s/w & h/w warranty.
Upgrade TM-502 to TM-510	811757	Upgrade BreezeACCESS TM TM-502 to BreezeACCESS TM TM-510. Including 12 months s/w & h/w warranty.