Facilitating Inspection, Visibility and Active Control of Networks

The combination of deep packet inspection (DPI) technology, visibility and active control enables Allot Communications to give a mind to networks. It enables Allot customers to achieve successful network performance and security and to be responsive to application, user and subscriber needs. Offering the industry’s broadest range of multi-gigabit performance and carrier-grade traffic management solutions, the company’s combination of hardware and software products are suitable for any IP carrier, service provider or enterprise network configuration.

Achieving Network Business Intelligence

Networks are not just about speed, feeds and bandwidth capacity. Networks are about providing crucial visibility of network usage and business behavior. Allot solutions offer good business sense, in terms of both network operation savings and the ability to create revenue-generating services. Throttling non-business uses of the network and solving contention and competitive situations between IP flows, Allot provides a range of monitoring and detection tools which provide visibility of network performance, enable fast, real-time identification of malicious traffic behavior, and provide extensive tracking/reporting capabilities of applications, flows, connections, ports, protocols and trends.
Controlling Traffic and Maximizing Average Revenue Per User (ARPU)

For carriers and service providers, network intelligence is about controlling traffic and maximizing ARPU. It’s about making more efficient use of network assets and delivering tiered services to increase revenue. Allot’s solutions provide all this and more. Through a range of traffic monitoring and control capabilities for P2P, VoIP, video, HTTP, gaming and many other applications, Allot’s solutions provide intelligent network visibility, guarantee unsurpassed quality of experience (QoE) and mitigate security threats. By enabling the deployment of new application-based services, tracking of behavior and trends, delivery of innovative billing models and self-provisioning capabilities, Allot solutions help in increasing ARPU and reducing subscriber churn.

Ensuring Mission-Critical Applications and Containing Network Costs

For enterprises, network intelligence is about optimizing network efficiency and better user productivity. It’s about quality performance for mission-critical applications such as Citrix and SAP, and containing network costs. Allot’s highly-scalable solutions link business policies to specific network actions, optimizing corporate network WANs to guarantee mission-critical applications and to deliver the performance required. To ensure high-quality performance of delay-sensitive applications, Allot solutions classify traffic through Layer 7, monitor network activity, implement application and IP-based accounting, deliver alerts for major network events, end-to-end QoS and MPLS support, and provide frontline protection against security attacks.

Delivering Expertise in a Line of Products

Allot’s extensive experience and specialization in traffic management is based on expertise in subscriber and traffic control, Internet access, and WAN optimization. Integrating these core capabilities together, Allot’s solutions combine network intelligence with the ability to minimize operating costs. Allot’s plug and play products feature easy-to-use graphic interfaces, and are backed by the company’s renowned, top-level customer service and support. The company’s leading line of products includes the NetEnforcer® family of LAN/WAN devices, which offer best-of-class traffic shaping technology for QoS/SLA enforcement, real-time IP monitoring and IP accounting; and NetXplorer, a centralized management system for network business intelligence which offers streamlined global visibility and control, insightful reporting and analysis, and frontline security for any network.

Pioneering the Industry with an Exemplary Track Record

Allot’s success is based on the company’s commitment to leading the market in ease-of-use, price/performance, scalability and customer support. Listening to customers, employees, partners and industry analysts, Allot offers the products, services and worldwide support programs that the market demands. Today, Allot’s award-winning products are sold by a dedicated global team of partners, trained service integrators and distributors, and are deployed in a diverse range of industries including telecommunications (carrier and broadband, wireless, cable and satellite service providers), education, banking, manufacturing, retail and transportation.
Ensuring Mission-Critical Applications and Containing WAN Costs
Traffic Management Solutions for Enterprise Networks

Allot's high-performance traffic management solutions are deployed by some of the world's largest enterprises. Integrating deep packet inspection (DPI) technology with Quality of Service (QoS) enforcement capabilities, they supply the visibility and control essential for managing networks today. Allot's solutions ensure high quality performance of delay-sensitive applications and optimization of WAN costs. They classify traffic through Layer 7, monitor network activity, implement application and IP-based accounting, deliver alarms concerning major network events, ensure end-to-end QoS and MPLS support, and provide frontline protection against security attacks.
Three Steps to Managing Enterprise Network LAN/WAN Traffic

Providing a direct link between business strategic priorities and the priorities of the IT infrastructure, Allot’s traffic management solutions offer robust, policy-powered networking. This enables efficient management of traffic crossing the LAN/WAN boundary of an enterprise network in three simple steps:

1. **Monitor network and bandwidth usage**
   - Automate discovery of applications and determine the protocols that affect network performance and require management.

2. **Define the policies**
   - Link business strategies to computing needs and determine the QoS attributes, such as minimum and maximum bandwidth percentages and traffic prioritization.

3. **Enforce the rules**
   - Utilize NetEnforcer to maintain all traffic crossing the WAN link and continually monitor resources to maintain network control and application performance.

The biggest surprise was just how easily we were able to apply these tools to our business. It was immediate. With Allot’s NetEnforcer we are able to forecast infrastructure demand and reduce cost of ownership for each of our different business units. Our CEOs are demanding reports and they now know what they use, what they need and what it costs.

Jose Luis Rodriguez, Senior Director of Enterprise Network Services, Grupo Elektra
Network Business Intelligence

Allot understands that network management is not just about speeds, feeds and bandwidth capacity. Today, it’s about the combination of DPI technology, visibility and active control to give a mind to networks. It’s about achieving the intelligence necessary for networks to finally come together to ensure better performance and security.

For enterprises, network business intelligence is about optimizing network efficiency and better user productivity. It’s about performance of mission-critical applications such as VoIP, Citrix and SAP, and containing network costs. Allot’s high-scale solutions link enterprise business policies to specific network actions, optimizing corporate network WANs to guarantee mission-critical applications and to deliver the performance required.

Offering the industry’s broadest range of traffic management solutions from low-cost devices to multi-gigabit performance devices, Allot’s combination of hardware and software products are suitable for any enterprise network configuration. By facilitating the inspection, visibility and active control of the network, they offer the solutions that enterprises seek: enhancement of application performance and containing of network costs.

“Enterprises are increasingly demanding greater layer-7 monitoring, and policy control for network access,” said Steve Elliot, Senior Research Analyst for Network & Service Management, IDC.

Ensuring Mission-Critical Applications and Containing Network Costs
Optimize WAN Infrastructure
Precise allocation of bandwidth for each application on the network, ensuring that heavy file transfers do not slow interactive business systems such as ERP or CRM, or that email does not degrade the performance of delay-sensitive Citrix and VoIP.

Maximize Business-Critical Application Performance
Grouping and defining of policies that allocate bandwidth by creating a pipe to allocated WAN resources for each remote office and virtual channels to allocate bandwidth for applications.

Achieve Network Intelligence
Drilldown network analysis using NetXplorer to achieve network intelligence including centralized policy configuration, collection and analysis, determination of network bottlenecks and better performance of mission-critical applications.

Classify Layer-7 Traffic
Supports hundreds of protocols and applications that affect businesses, such as VoIP, P2P, Citrix, Oracle, HTTP, email and video, differentiating between multiple applications, prioritizing between traffic and limiting traffic to a defined percentage of bandwidth.

Centralize Management
A single point for policy configuration and data collection and analysis enables understanding of mission-critical application performance by analyzing network usage and application behavior.

Monitor Network Activity
More than 100 real-time and long-term views of traffic and performance from a single, easy-to-read GUI enable the tracking and investigation of problematic network behavior and active management of traffic with QoS.

Build Adaptive Networks with Intelligent Alarms
Definition of thresholds on abnormal events which trigger alarms such as SNMP traps and email/EMS messages, and automatically invoke corrective actions before problems become costly.

The NetEnforcer was instrumental in the success of our corporate-wide roll-out to Internet telephony. After we installed the NetEnforcer, our users immediately noticed the increased quality of the VoIP service.

Toshihiro Manabe, Information System Assistant Manager, Nippon Paint
Protect Against Malicious Attacks
Detection of seven types of DDoS attacks, monitoring, recording and blocking of malicious traffic and early warning of imminent attacks, as well as a dedicated management port for out-of-band management even during a DDoS attack.

Protect Against Network Failure
100% uptime using a two-tier approach to fault-tolerant operation based on a hardware bypass for transparent passage of all traffic in case of any software or hardware failure, and parallel installation of two NetEnforcer devices (active-active and active-hot standby).

Deliver End-to-End QoS and MPLS Support
Use of industry-standard Type of Service (ToS) and differentiated services (DiffServ) protocols to signal the desired QoS to the entire network, as well as using the NetEnforcer as an edge device in MPLS networks for enhanced traffic classification and advanced monitoring and accounting.

Control Traffic Efficiently
Allot solutions control both the prioritization of applications and their distribution to servers, enabling enterprises to optimize WAN consumption and simplify the administration of multiple cache servers.

interface with IETF Directories and Backend Support
Integration of corporate network policies with existing corporate user directories, enabling the definition of policies per department, group or application.

Protect Against Network Failure
100% uptime using a two-tier approach to fault-tolerant operation based on a hardware bypass for transparent passage of all traffic in case of any software or hardware failure, and parallel installation of two NetEnforcer devices (active-active and active-hot standby).

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Control Traffic Efficiently
Allot solutions control both the prioritization of applications and their distribution to servers, enabling enterprises to optimize WAN consumption and simplify the administration of multiple cache servers.

"Our needs differ from one location to another, so we need to accurately manage our bandwidth. We’re pleased with Allot’s NetEnforcer because it addresses our needs by providing flow-by-flow and link-by-link without requiring us to assign dedicated staff to manage the task."
Philippe Faure, Network Manager, Schneider Electric

"The monthly savings have been a tremendous boost to our IT budget. In fact, the reduced need for transoceanic data transfers over the WAN allowed the company to completely eliminate one of our existing EI facilities. The savings from that change alone is over $23,000 per month or $276,000 a year. At that rate, the entire cost of the Allot system was recovered in just six weeks; the returns, of course, will continue for years."
Karl Wighaman, Senior Network Manager, i2 Technologies

"Once we installed Allot’s solution, we immediately discovered SoftEther traffic and added policies to control it. Since then we see a significant improvement in network performance and have identified a variety of new risks."
Takahiro Iwamoto, IT Manager, S&I (Tokyo)

"Allot’s NetEnforcer is indispensable to our remote IT staff because it helps us implement global network policies, optimize network efficiency and carefully control user- and application-level priorities."
Dick Cleek, CIO, University of Wisconsin

"The monthly savings have been a tremendous boost to our IT budget. In fact, the reduced need for transoceanic data transfers over the WAN allowed the company to completely eliminate one of our existing EI facilities. The savings from that change alone is over $23,000 per month or $276,000 a year. At that rate, the entire cost of the Allot system was recovered in just six weeks; the returns, of course, will continue for years."
Karl Wighaman, Senior Network Manager, i2 Technologies
Traffic Classification (per Flow)

- IP/MAC address (with IP range, list or subnet option, host name); retrieval via LDAP or text file
- Network and IP protocols and applications
- Layer-7 classification for hundreds of business applications, such as Citrix and Oracle; VoIP and streaming protocols such as H.323 and MSPlayer; Internet protocols such as FTP and SMTP; and web traffic, and IP applications
- Application content (FTP, SMTP, HTTP, MySQL, etc.). Unix (application, executable, user, remote, and in 15/32 format (UDP, TCP))
- VLAN ID (802.1Q); VLAN Priority (802.1p)
- ToS byte (DiffServ or IP Precedence bits)
- Time of day/week/month/year

QoS Enforcement

- Hierarchy of policy rules with inbound/outbound traffic management
- Minimum/maximum bandwidth enforcement per flow/VC/pipe
- Ten levels of priorities for VCs/pipes
- Per flow guaranteed bandwidth, burst rate, CBR (for connection)
- Maximum number of connections per VC/pipe
- Fairness between equal priority traffic flows
- Management for TCP/UDP/ICMP links
- Admission control
- Session reserve for TCP (of available bandwidth)
- Reserve on demand bandwidth for very high priority traffic

Network Security

- Access control (iptables/L3/L4) protection from DDoS attacks
- Control of number of connections
- Secure management with SSL encryption
- Control of connection establishment rate

Configuration

- Provision network management and action using intelligent agents
- Remote policy configuration via CLI or Web interface

QoS Policy Management

- Actions and rule enforcement in low latency, with Mal alert and a very low latency response time, all based on the NetEnforcer's catalog
- Any expansion of the rules and policies through multiple gateways
- Policy distribution from primary NetEnforcer to allow scalability

Proactive Network Management

- Improves sensor data collection, performance, and topology sharing of network bandwidths and application behavior
- Bandwidth and traffic monitoring, protocol distribution, top charts, top servers, top URL, top peers, top protocols, bandwidth rate of connections, of flavors, bandwidth usage with 10 second granularity and storage of historical data
- SNMP support of-collector data per VC/pipe
- Manage, control alarms and network events management system
- Accounting deployed on a per-service, per-VLAN and per-VC/pipe

Fail-Safe Performance (No Single Point of Failure)

- Hot-swapping
- Active redundancy (both software and hardware)

About Allot Communications

Allot Communications is about broadband traffic management solutions for intelligent networks. Designed for carriers, service providers and enterprises, Allot solutions exploit Internet protocol (IP) technology to transform broadcast pipes into smart networks. This enables the visibility and control needed to manage applications, maintain quality of service (QoS), monitor operating costs and maximize revenue. Allot believes in listening to customers and providing them with access to the global network of visionaries, innovators and support engineers.
The NetEnforcer® AC-400 series of entry level traffic management devices is especially suitable for small to medium enterprise networks and broadband service provider networks. Using deep packet inspection (DPI) technology with QoS enforcement capabilities, they monitor and control network traffic and user behavior, optimize traffic flows and provide an unsurpassed level of visibility.

**Main Features**

- 2 or 4 ports support various network topologies
- Range of operation speeds - 2, 10, 45 and 100 Mbps (full duplex)
- Accurate identification of hundreds of applications and protocols out-of-the-box
- Advanced signatures and behavioral recognition technologies for individual control of different business and entertainment applications
- Supported by NetXplorer centralized management system for streamlined global visibility and control, insightful reporting and analysis, and frontline security
- WAN optimization for maximizing the performance of mission-critical applications through QoS, shaping/prioritization capabilities and highly-flexible policy definitions
- Continuous, easy-to-use traffic monitoring for fast troubleshooting, usage tracking and capacity planning
- Proactive, automatically-triggered early-warning mechanisms providing administrators with alarms concerning network events and the ability to automate corrective actions
- Easy upgrading to higher speeds and increases in number of policies using the same platform
- Detection of traffic anomalies and mitigation of network attacks and security threats by immediate isolation of malicious traffic, without interrupting regular traffic
- Fail-safe performance with external hardware bypass and full redundancy support
Specifications

The NetEnforcer AC-400 series is available in two models serving a range of network configurations and needs.

### AC-402

- **Number of Connections/Flows**: 96,000 / 192,000
- **Throughput**: 200 Mbps (100 Mbps, Full Duplex)
- **Pipes/Virtual Channels**: 1,024 / 4,096

### AC-404

- **Number of Connections/Flows**: 96,000 / 192,000
- **Throughput**: 200 Mbps (100 Mbps, Full Duplex)
- **Pipes/Virtual Channels**: 2 x 10/100 BaseT / 2 x 10/100/1000 BaseT

#### Interfaces and Connections

- **Management Interface**: 10 / 100 BaseT
- **Network Interfaces (Internal / External)**: 2 x 10/100 BaseT / 2 x 10/100 BaseT
- **Console Port**: Serial, RJ-45 Connector

#### Deep Packet Inspection (DPI) (Typical Examples)

- **P2P Protocols**: Including BitTorrent, eDonkey, Warez, WinMX, Kazaa
- **VoIP Protocols**: Including Skype, H.323, SIP, RTP, Net2Phone, Vonage
- **Gaming Protocols**: Including Doom, Diablo, MSN Game, SWAT, Ultima
- **Web/Streaming Application Protocols**: Including Abacast, iTunes, RTSP, Winamp MMS
- **Business Application Protocols**: Including Citrix, SMTP, Oracle, Lotus-Notes, SAP

#### Product Options

- **Monitoring Only**: Yes / Yes
- **QoS Enforcement Levels**: 2, 10, 45 and 100 Mbps (Full Duplex)
- **Policy Levels (Pipes/VCs)**: 1,024 / 4,096
- **Redundancy**: Parallel (1:1) / Parallel and Active (1:1, 1+1)
- **Add-Ons**: NetXplorer Enabler / Reporter
- **NetAccountant**: Yes / No

#### Dimensions

- **Size**: Standard 1U by 19" rack mount
- **Weight**: 5.50 kg (12.1 lb)
- **Bypass Unit**: Internal

#### Power

- **Input (AC/DC)**: 100 to 240 VAC, 300 W

#### Safety and Certifications

- **Safety**: UL 60950-1 / CSA CS22.2 60950 (ITE) / EN 60950-1 ITE

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About Allot Communications

Allot Communications is all about broadband traffic management solutions for intelligent networks. Designed for carriers, service providers and enterprises, Allot solutions apply deep packet inspection (DPI) technology to transform broadband pipes into smart networks. This creates the visibility and control vital to manage applications and services, guarantee quality of service (QoS), contain operating costs and maximize revenue. Allot believes in listening to customers, and provides them access to its global network of visionaries, innovators and support engineers.

www.allot.com  info@allot.com

- **Americas**: 7664 Golden Triangle Drive, Eden Prairie, MN 55344 USA · Tel: (952) 944-3100 · Toll free: (877) 235-6826 · Fax: (952) 944-3555
- **Europe**: NCI – Les Centres d’Affaires Village d’Entreprises ‘Green Side’ Batiment 7, 400 Avenue Roumanille, BP309, 06906 Sophia Antipolis Cedex, France · Tel: 33 (0) 4-93-001167 · Fax: 33 (0) 4-93-001165
- **Asia Pacific**: 6, Ubi Road 1, Wintech Centre 6-12, Singapore 408726 · Tel: 65 6841-3020 · Fax: 65 6747-9173
- **Japan**: Yajima Building, 8F, 7-11-3 Ginza, Chuo-ku, Tokyo 104-0061 · Tel: 81(3) 5337-7114 · Fax: 81(3) 5527-5281 · www.allot.jp
- **Israel**: 5 Hanagar Street, Industrial Zone B, Hod-Hasharon, 45800, Israel · Tel: 972 (9) 7619200 · Fax: 972 (9) 744-3626
The NetEnforcer® AC-800 series of mid range traffic management devices is especially suitable for medium and large enterprise networks and medium broadband service provider networks. Using deep packet inspection (DPI) technology with QoS enforcement capabilities, they monitor and control network traffic and user behavior, optimize traffic flows and provide an unsurpassed level of visibility.

Main Features

- 2, 4 or 8 ports support various network topologies
- Range of operation speeds - 45, 100, 155 and 310 Mbps (full duplex)
- Accurate identification of hundreds of applications and protocols out-of-the-box
- Advanced signatures and behavioral recognition technologies for individual control of different business and entertainment applications
- Supported by NetXplorer centralized management system for streamlined global visibility and control, insightful reporting and analysis, and frontline security
- WAN optimization for maximizing the performance of mission-critical applications through QoS, shaping/prioritization capabilities and highly-flexible policy definitions
- Continuous, easy-to-use traffic monitoring for fast troubleshooting, usage tracking and capacity planning
- Proactive, automatically-triggered early-warning mechanisms providing administrators with alarms concerning network events and the ability to automate corrective actions
- Easy upgrading to higher speeds and increases in number of policies using the same platform
- Detection of traffic anomalies and mitigation of network attacks and security threats by immediate isolation of malicious traffic, without interrupting regular traffic
- Fail-safe performance with external hardware bypass and full redundancy support
Specifications

The NetEnforcer AC-800 series is available in three models serving a range of network configurations and needs.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>AC-802</th>
<th>AC-804</th>
<th>AC-808</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Connections/Flows</td>
<td>256,000 / 512,000</td>
<td>256,000 / 512,000</td>
<td>256,000 / 512,000</td>
</tr>
<tr>
<td>Throughput</td>
<td>620 Mbps (310 Mbps, Full Duplex)</td>
<td>620 Mbps (310 Mbps, Full Duplex)</td>
<td>620 Mbps (310 Mbps, Full Duplex)</td>
</tr>
<tr>
<td>Pipes/Virtual Channels</td>
<td>4,096 / 28,672</td>
<td>4,096 / 28,672</td>
<td>4,096 / 28,672</td>
</tr>
</tbody>
</table>

Interfaces and Connections

<table>
<thead>
<tr>
<th>Management Interface</th>
<th>10/100/1000 BaseT</th>
<th>4x10/100/1000 BaseT</th>
<th>8x10/100/1000 BaseT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Interfaces</td>
<td>2x10/100/1000 BaseT or 2x1000 BaseSX or 2x1000 BaseLX (5KM)</td>
<td>4x10/100/1000 BaseT or 4x1000 BaseSX or 4x1000 BaseLX (5KM)</td>
<td>8x10/100/1000 BaseT or 8x1000 BaseSX or 8x1000 BaseLX (5KM)</td>
</tr>
<tr>
<td>Console Port</td>
<td>Serial, RJ-45 Connector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Deep Packet Inspection (DPI) (Typical Examples)

- **P2P Protocols**: Including BitTorrent, eDonkey, Warez, WinMX, Kazaa
- **VoIP Protocols**: Including Skype, H.323, SIP, RTP, Net2Phone, Vonage
- **Gaming Protocols**: Including Doom, Diablo, MSN Game, SWAT, Ultima
- **Web/Streaming Application Protocols**: Including Abacast, iTunes, RTSP, Winamp MMS
- **Business Application Protocols**: Including Citrix, SMTP, Oracle, Lotus-Notes, SAP

Product Options

- **Monitoring Only**: Yes, Yes, Yes
- **QoS Enforcement Levels**: 45, 100, 155 and 310 Mbps (Full Duplex)
- **Policy Levels (Pipes/VCs)**: 2,048 / 8,192; 3,072 / 16,384; 4,096 / 28,672
- **Redundancy**: Serial and parallel (1:1), Serial, parallel and active (1:1, 1+1)
- **Add-Ons**: NetXplorer Enabler, Yes, Yes, Yes
- **NetXplorer Reporter**: Yes, Yes, Yes
- **NetAccountant**: Yes, No, No

Dimensions

- **Size (H x W x D)**: Standard 2U by 19” rack mount
- **Weight**: 13.7 kg (30.2 lb)
- **Bypass Unit**: External, 1U, 19” rack mount

Power

- **Input (AC/DC)**: 100 to 240 VAC, 500 W; -36 to -72 VDC, 615 W
- **No. Power Supply Units**: 3 (Load Sharing)
- **Redundancy for PSUs**: 2 + 1

Safety and Certifications

- **Safety**: UL 60950-1 / CSA CS22.2 60950 (ITE)
- **Emission**: EN 61000-3-2:2001 Harmonic Emissions
- **Emission**: EN 61000-3-3:1995; A1:2000 Voltage Fluctuations
- **Safety**: FCC Part 15, Sub-Part B

About Allot Communications

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- **Israel**: 5 Hanagar Street, Industrial Zone B, Hod-Hasharon, 45800, Israel · Tel: 972 (9) 7619200 · Fax: 972 (9) 744-3626
The NetEnforcer® AC-1000 series of carrier class traffic management devices is especially suitable for medium and large broadband service provider networks. Using deep packet inspection (DPI) technology with QoS enforcement capabilities, they monitor and control network traffic and subscriber behavior, and provide an unsurpassed level of visibility.

Main Features

- 2, 4 or 8 ports support various network topologies
- Range of operation speeds - 155, 310, 400, 622 Mbps and 1 Gbps (full duplex)
- Accurate identification of hundreds of applications and protocols out-of-the-box
- Advanced signatures and behavioral recognition technologies for individual control of different Internet applications, such as P2P, VoIP, streaming and gaming
- Supported by NetXplorer centralized management system for streamlined global visibility and control, insightful reporting and analysis, and frontline security
- Accurate per subscriber and per application control
- Dynamic provisioning of subscribers and services
- Redirection of subscribers to captive portal
- Easy upgrading to higher speeds and increases in number of policies using the same platform
- Continuous, easy-to-use traffic monitoring for fast troubleshooting, usage tracking and capacity planning
- Proactive, automatically-triggered early-warning mechanisms providing administrators with alarms concerning network events and the ability to automate corrective actions
- Detection of traffic anomalies and mitigation of network attacks and security threats by immediate isolation of malicious traffic, without interrupting regular traffic
- Fail-safe performance with external hardware bypass and full redundancy support
## Specifications

The NetEnforcer AC-1000 series is available in three models serving a range of network configurations and needs.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>AC-1010</th>
<th>AC-1020</th>
<th>AC-1040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Connections/Flows</td>
<td>1,000,000 / 2,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Throughput</td>
<td>2 Gbps (1 Gbps, Full Duplex)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pipes/Virtual Channels</td>
<td>10,000 / 80,000</td>
<td>10,000 / 80,000</td>
<td>4,000 / 28,000</td>
</tr>
<tr>
<td>No. of Subscribers</td>
<td>100,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Interfaces and Connections

- **Management Interface**: 10/100 BaseT
- **Network Interfaces (Internal / External)**: 2x1000 BaseT or 2x1000 BaseSX or 2x1000 BaseLX or 4x1000 BaseT or 4x1000 BaseSX or 4x1000 BaseLX or 8x10/100 BaseT
- **Console Port**: Serial, RJ-45 Connector

### Deep Packet Inspection (DPI) (Typical Examples)

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- **VoIP Protocols**: Including Skype, H.323, SIP, RTP, Net2Phone
- **Gaming Protocols**: Including Doom, Diablo, MSN Game, SWAT, Ultima
- **Web/Streaming Application Protocols**: Including Abacast, iTunes, RTSP, Winamp MMS
- **Traffic Encapsulation Protocols**: Including L2TP, MPLS, PPPoE

### Product Options

- **QoS Enforcement Levels**:
  - 155, 310, 622 Mbps and 1 Gbps (Full Duplex)
  - 400 Mbps (Full Duplex)
- **Policy Levels (Pipes/VCs)**:
  - 2,000 / 8,000; 5,000 / 40,000; 10,000 / 80,000
  - 4,000 / 28,000
- **Redundancy**:
  - Serial & parallel (1:1)
  - Serial, parallel & active (1:1, 1+1)
- **Add-Ons**:
  - NetXplorer Enabler: Yes
  - NetXplorer Reporter: Yes
  - NetAccountant: Yes
  - NetRedirector: Yes
- **Dimensions**:
  - Size (H x W x D): Standard 2U by 19" rack mount
  - Weight: 8.3 kg (18.2 lb)
  - Power Input (AC/DC): 100 to 240 VAC, 80 W; -48 VDC, 80 W
  - No. Power Supply Units: 2 (Load Sharing)
  - Redundancy for PSUs: 1 + 1

### About Allot Communications

Allot Communications is all about broadband traffic management solutions for intelligent networks. Designed for carriers, service providers and enterprises, Allot solutions apply deep packet inspection (DPI) technology to transform broadband pipes into smart networks. This creates the visibility and control vital to manage applications and services, guarantee quality of service (QoS), contain operating costs and maximize revenue. Allot believes in listening to customers, and provides them access to its global network of visionaries, innovators and support engineers.

www.allot.com info@allot.com
Using NetXplorer for Complete Visibility and Control

Networks are not just about speeds, feeds and bandwidth capacity. Networks are about providing crucial visibility of network usage, business and user behavior. Working together, Allot’s NetXplorer and NetEnforcer devices combine global visibility, active control and deep packet inspection (DPI) technology to achieve a level of network intelligence that ensures optimal network performance, security and management and caters to application, user and subscriber needs.

Linking Between Business Goals and Network Traffic

NetXplorer provides the necessary in-depth insight and analysis to understand networks and directly link between business goals and network traffic and behavior. Facilitating the decision-making process and streamlining network efficiency, NetXplorer is a highly scalable system that uses a single, easy-to-use GUI to deliver unsurpassed network analysis suitable for short-term network troubleshooting or for understanding long-term trend and usage patterns. Control capabilities include simultaneous provisioning of policies and configuration, updating and distribution of data to all managed Allot NetEnforcer® devices.

For Service Providers, NetXplorer delivers the visibility and tools that deliver traffic and subscriber information and control in broadband networks. This is particularly important in controlling operation costs, reducing subscriber churn, increasing revenues (ARPU) and providing new, differentiated services.

For Enterprises, NetXplorer provides network visibility that extends beyond the infrastructure and enables the linking of business policies to specific network actions, which is particularly important for managers to ensure mission-critical applications and contain network costs.
Powerful Network Analysis and Centralized Management for Optimal Visibility and Control

Global Visibility for In-Depth Analysis
Optimal network-wide visibility using DPI technology, including identification of traffic trends and drilling down to the individual device, user or application level for real-time troubleshooting and complete network visibility of all NetEnforcer devices from a single, intuitive user interface.

Intuitive Interface
Unprecedented control delivered with speed and simplicity through a user-friendly interface which provides both a logical network-wide perspective together with the power to quickly navigate down to the device, user or application level.

Insightful Reporting and Analysis
Analysis of information in real-time and over time for long-term reporting, capacity planning, usage tracking and service package optimization.

Frontline Security
Global traffic monitoring for a variety of suspicious traffic, enabling easy detection of potential DoS/DDoS attacks or network-born security attacks, setting of thresholds to monitor network conditions, generation of alarms, automatic execution of corrective actions, and definition of global rules to block malicious traffic and mitigate its effect.

Rapid ROI
Comprehensive and efficient centralized management that ensures global application and user level control, reduces complexity and ongoing operating costs and increases network uptime, delivering the power to keep businesses and network operation at peak performance.
Extensive Range of Features

**Monitoring and Analysis**
- In-depth analysis capabilities, including drill-down to single user sessions and single applications to locate and diagnose network problems and bottlenecks
- Real-time monitoring for a deep understanding of the network, using high-resolution, 30-second monitoring of the previous few minutes
- Short-term monitoring for the collection of highly granular information, with 30-second data representing the last few hours and 5-minute data displaying the last few days
- Storage of network activities in a high resolution data warehouse

**Reporting**
- Long-term reporting for evaluation of trends and accurate capacity planning using hourly and daily statistics stored for months or years, and for tracking usage for accounting or charge-back purposes using volume-based reports
- Hundreds of customizable report formats about network traffic, including tracking of utilization and policy statistics, network distribution and activities
- Easy navigation (zoom or scroll) to view all report data, including customization by desired time frames, graph or table format, sorting, filtering and drill-down to view additional data
- Easy report integration with external systems for usage-based charge-back and billing
- Automatic, scheduled report generation, saved or emailed in different file formats
- Rich report output and export formats, including interactive graphical view, JPEG, PNG, HTML, XML and CSV

**Building Policies**
Centralization of all data such as service definitions, protocol definitions and host lists, enabling the rapid deployment of services or service changes and automatic distribution of configurations and changes to all managed NetEnforcer units

**Configuration and Policy Provisioning**
Accessing of configuration and policies of managed NetEnforcers without logging into each device, including the copying and use of policies across NetEnforcers

**Network Security**
Tracking of excessively high connection rates that may indicate potential attacks, setting of thresholds, generation of network alarms and implementation of automatic corrective actions for individual or multiple NetEnforcers

**Intelligent Alarms**
Definition of thresholds on abnormal events which trigger alarms such as SNMP traps and email/SMS messages, and automatically invoke corrective actions before problems become costly
NetXplorer is based on a highly-scalable architecture which powers the monitoring of all NetEnforcer devices from a single, intuitive user interface. A single installation package for Windows XP and Windows 2003 servers, system architecture consists of three layers:

**The Client Layer** is the NetXplorer GUI application, comprising different clients that connect to the NetXplorer Server.

**The Server Layer** incorporates the actual NetXplorer application, including the database. Managing and communicating with the different clients that access the system, it facilitates NetEnforcer configuration, policy provisioning, alarms, monitoring and reporting. The NetXplorer also includes an integrated data collector, which streamlines the required collection of data from the managed NetEnforcer devices.

**The Agent Layer** is an optional component which enables the NetEnforcer to be managed by the NetXplorer and support all management functions.

### Specifications

#### System Requirements

<table>
<thead>
<tr>
<th>Minimum Requirements</th>
<th>Recommended Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel Pentium 4 2.8 GHz or higher</td>
<td>Dual Xeon 2.8 GHz or higher</td>
</tr>
<tr>
<td>Intel Chipset Based (925 or 955)</td>
<td>4 GB RAM (Dual Channel)</td>
</tr>
<tr>
<td>2 GB RAM (Dual Channel)</td>
<td>RAID Controller with write-back cache battery with minimum</td>
</tr>
<tr>
<td>1x80 GB HDD, 8MB Cache (SATA interface recommended)</td>
<td>128 MB RAM (write policy optimized). RAID 0 mode</td>
</tr>
<tr>
<td>Windows XP Professional, Service Pack 2 (US English)</td>
<td>5x36 GB U320 SCSI HDD 15,000 RPM or larger</td>
</tr>
</tbody>
</table>

#### Supported NetEnforcer Devices
AC-402, AC-404, AC-802, AC-804, AC-808, AC-1010, AC-1020, AC-1040

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www.allot.com  info@allot.com
Enabling Traffic and Subscriber Control in Broadband Networks
Traffic Management Solutions for Carriers and Service Providers

Allot’s high-performance traffic management solutions are deployed by some of the world’s largest service providers. Integrating deep packet inspection (DPI) technology with Quality of Service (QoS) enforcement capabilities, they supply the visibility and control essential for managing networks today.

Allot’s solutions identify usage and traffic trends, provide the control to reduce customer churn, and give service providers the ability to offer new, innovative services which maximize average revenue per user (ARPU).
Total Visibility and Robust Control of Traffic and Subscribers

Traffic Control: Optimizing Performance
- Control P2P applications
- Achieve intelligent network visibility
- Guarantee unsurpassed Quality of Experience (QoE)
- Mitigate security threats

Subscriber Control: Maximizing ARPU
- Deploy new application-based services
- Track behavior and trends
- Deliver innovative billing models
- Enable self-provisioning capabilities

Traffic Control: Reducing Costs
- P2P Control
- Network Security

Subscribe Control: Increasing Revenues (ARPU)
- Application-based Services
- Billing Models
- Self-Provisioning

Heiko Liebscher, CTO, Wilhelm.tel

We instantly reduced traffic consumption by 150 Mbps and reduced costs by 3,100,000 per month.
Network Business Intelligence

Allot understands that network management is not just about speed, feeds and bandwidth capacity. Today, it’s about the combination of DPI technology, visibility and active control to give a mind to networks. It’s about achieving the intelligence necessary for networks to finally come together to ensure better performance and security.

For carriers and service providers, network business intelligence enables more efficient use of network assets, delivery of tiered services to increase revenues, and the fast, real-time identification and mitigation of malicious traffic. It’s about the delivery of powerful control over applications such as P2P, VoIP, streaming video and online gaming, ensuring fair use, high-levels of performance and predictable operation costs. It’s about facilitating new service capabilities such as bandwidth-on-demand and tiered monthly rate plans that help increase ARPU, minimize churn and expand subscriber bases.

Offering the industry’s broadest range of multi-gigabit performance, carrier-grade traffic management solutions, Allot’s combination of hardware and software products are suitable for any IP service provider or carrier network configuration. They facilitate the visibility and active control that allows the reduction of operating expenses and the ability to offer new, differentiated services to increase profit.
Control P2P Applications: Enhance Your Customer’s Experience

Allot’s NetEnforcer uses advanced application signatures and behavioral recognition methodologies to auto-detect a wide variety of P2P applications, enabling providers to set policies that separately monitor and control subscriber activities, control P2P applications and leverage their popularity by prioritization.

Achieve True Network Visibility: Manage Your Customer’s Experience

NetEnforcer utilizes advanced DPI technology to accurately identify hundreds of applications. Allot’s NetXplorer centralized management system enables detection of heavy users, monitoring of network status, evaluation of trends and tracking of network behavior down to a single connection in order to help fine-tune network performance.

Guarantee Unsurpassed Quality of Experience: Maximize Your Potential

NetEnforcer manages network traffic by importance prioritization, enabling the matching of customer expectations and application requirements with policies that intelligently and efficiently manage available resources. This results in the delivery of fair and equitable service levels among subscribers, ensuring that all users receive high-quality web sessions without being overwhelmed by high-bandwidth subscribers.

Mitigate Security Threats: Protect Your Customer’s Experience

NetEnforcer quickly identifies, isolates and mitigates many types of security threats and malicious traffic. Using behavioral analysis, port monitoring, DPI, early-warning mechanisms and automated corrective actions, bad traffic is prevented from flooding the network, thereby reducing costs and downtime.

Traffic Control: Optimizing Performance

NetEnforcer provides a clear and intuitive picture of how network resources are allocated, enabling providers to control abusive traffic patterns and prevent resource depletion. NetEnforcer’s management system enables detection of heavy users, monitoring of network status and tracking of network behavior down to a single connection in order to help fine-tune network performance.

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Robert Wolfe, Network Engineer, Northland Communications

Our network performance dropped significantly when a combination of viruses overwhelmed our routers and caused a 10-fold spike in our active connections. Within an hour, we used NetEnforcer to identify ports used by viruses, and we created policies stopping the spread of the SoBig, Blaster and SQLSlammer viruses to our user base.

Jack Davis, IT Director, Barbourville Online

“NetEnforcer has become an integral part of our service provision. Not only does it prevent over-use of broadband resources, but its intelligence is also captured by our customer service departments, enabling us to provide accurate billing and cost-effective service levels.”

NetEnforcer can be used to control and prioritize traffic, enabling the matching of customer expectations and application requirements with policies that intelligently and efficiently manage available resources. This results in the delivery of fair and equitable service levels among subscribers, ensuring that all users receive high-quality web sessions without being overwhelmed by high-bandwidth subscribers.

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**Deploy New Application-Based Services:**
Increase Your Revenue Opportunities

NetEnforcer gives service providers the opportunity to deploy a range of new services, such as tiered services and application control. This guarantees the performance of key applications such as high-quality VoIP, streaming video and P2P file sharing and enables the offering of targeted service packages. NetEnforcer achieves this using advanced subscriber identification which integrates with DHCP, RADIUS and third party systems such as billing, provisioning and OSS for invoking appropriate traffic management policies per subscriber, and automatic provisioning according to back-office systems.

**Track Behavior and Trends:**
Plan Competitive Services

The network business intelligence offered by NetXplorer can be used to learn about subscriber behavior and trends and understand when and how applications are being used. This enables the fast creation of optimal solutions for specific subscriber groups, customized according to their usage track record, and easy deployment of services in the network.

**Deliver Innovative Billing Models:**
Increase Your Customer Focus

Allot’s NetEnforcer enables service providers to collect highly detailed, accurate usage information at both the subscriber and application level. Integrating easily with billing systems, this enables the offering of sophisticated billing plans, such as quota-based billing based on a weekly/monthly data volume limit for subscribers, and usage-based billing, based on the monthly volume of data transferred in total or by application.

**Enable Self-Provisioning Capabilities:**
Empower Your Customers

Allot’s subscriber management system enables service providers to provide self-provisioning capabilities to subscribers. Using a subscriber portal, service providers can offer a range of advanced services, such as on-demand bandwidth on demand, allowing subscribers to receive additional bandwidth on a temporary basis.
Traffic Classifications
- IP address (with IP range, list or subnet option)
- Port numbers (with TCP, UDP or both)
- Network protocols such as ARP, IPX, PPPoE and NAT
- Transport protocols such as TCP, UDP, ICMP
- Telnet (23), SMTP (25), and others
- Time of day

Traffic Snapshots
- Controls deep packet inspection traffic such as TCP, UDP, and ICMP

Application Classification
- Identification of applications, including P2P applications
- Identification of specific flows for billing or fraud detection
- Identification of HTTP requests
- Identification of FTP requests
- Identification of SSL traffic
- Instant messaging, including MSN Messenger and ICQ
- Wireless applications such as WAP and Wi-Fi

Traffic Encapsulations
- Control of encapsulated traffic such as L2TP, MPLS, and PPPoE

Application Classification
- Hundreds of applications, including P2P applications such as BitTorrent, DirectConnect, eDonkey/eMule, Gnutella, Kazaa, WinMX, and others
- Encrypted and HTTP tunneled applications
- VoIP protocols such as SIP, Skype and H323
- Instant messaging, including MSN Messenger and ICQ
- Email protocols
- Online gaming

Policy Enforcement
- Hierarchy of policy rules with outbound and inbound traffic management
- Minimum/maximum bandwidth enforcement per subscriber and application
- Ten levels of priorities
- Per flow guaranteed bandwidth, burst rate and CBR
- Maximum number of connections per VC/pipe
- Fairness between traffic flows, subscribers and applications
- Admission control

Network Security
- Access control (pass/reject/drop)
- Protection from DDoS attacks
- Control of number and rate of connections

Configuration
- Central management and setup via WebManager
- Remote policy configuration via CLI or web browser

Policy Management
- Policy management of multiple and flexible traffic rules in a single ruleset with WebManager
- Policy management based on time-of-day, day-of-week, week-of-year, and time
- Easy re-organization of VC and pipes (providing to multi-provider flexible)

Customer Support (Available via NetXplorer)
- Discover new connections in a single view
- Fairness between traffic flows, subscribers and applications
- Admission control

Monitoring and Accounting
- Central reporting system using WebManager for traffic monitoring, statistics, and reporting
- Demographics, top hosts, top VCs, top pipes, top connections, number and rate of connections, utilization, bandwidth usage, time periods, and statistical data and CDR
- Detailed bandwidth utilization
- Accounting per user, per subscription, and per VC/pipe

SNMP Support for Operation, Collection of pre-VC/pipe

Fail-Safe Performance
- No single point of failure
- Support of redundancy using two systems
- External fiber/copper bypass controlled by main board
- Dual 200W load sharing, hot-swappable power supplies, dual power feeds and redundant fans

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