

# NetEnforcer®

## Enterprise Network and Application Performance Management



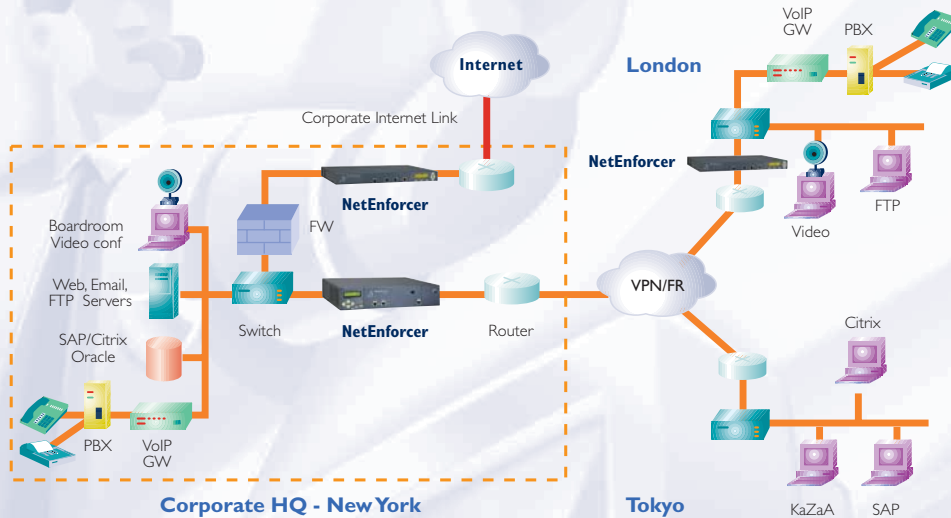
DDoS protection    P2P throttling    ROI    performance  
SLA enforcement    quality of service

- Maximize business-critical application performance
- Maximize ROI on network infrastructure
- Monitor network activity
- Implement application- and IP-based accounting

The exponential growth in the use of the Internet, combined with increased reliance on IP-based networks (private, public or VPN) for mission-critical and time-sensitive traffic, has resulted in unprecedented demands on existing communication systems. In order to achieve an acceptable quality of service (QoS) and maximize the performance of business-critical applications, network managers need to allocate network resources based on business priorities.

## Policy-Powered Networking

Allot Communications NetEnforcer® policy enforcement devices let you link your business policies to specific network actions that improve and control users' productivity and satisfaction. On corporate networks, the NetEnforcer enables you to control expensive network resources so mission-critical business applications deliver the performance your company needs to succeed.



The NetEnforcer is placed at the network edge, between the switch and the router.

## Three Steps to Policy-Powered Networking

Policy-Powered Networking lets you efficiently manage traffic crossing the LAN/WAN boundary of an enterprise network. The process of implementing a Policy-Powered Networking solution includes three steps:

### 1. Monitor network and bandwidth usage

Use the NetEnforcer's NetWizard setup utility to auto-discover applications in your network. Using this information, you can determine which protocols affect your network performance and should be managed.



NetWizard auto-discovers applications on your network

### 2. Define policies that link business priorities to computing needs

Use the QoS Policy Form to quickly define QoS attributes for the desired policies. Assign minimum and maximum percentages of bandwidth, and prioritize traffic from 1 to 10. For additional policy definition, use the Policy Editor to define policies based on addresses, protocols, VLAN tags, Type of Service, or time of day. For example, limit music downloads to 10% of your WAN link capacity.

### 3. Enforce the rules

Let NetEnforcer examine all traffic crossing the WAN link. Upon matching a traffic session with a rule, NetEnforcer forwards the packets per the specified policy actions. Continually monitor network resources using NetEnforcer's Traffic Monitor and refine policies to maintain maximum network control and application performance.

## Features and Benefits

### Maximize ROI on Network Infrastructure

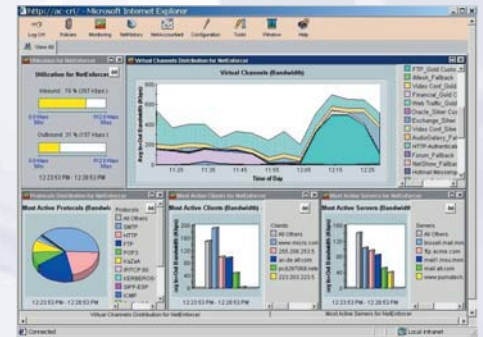
The NetEnforcer allows you to maximize the ROI from your corporate network by effectively managing bandwidth contention. On many networks as little as 5% of the users use up to 80% of the bandwidth—and often for non-business purposes. Use NetEnforcer to discover—and throttle—these bandwidth abusers who download KaZaA and other peer-to-peer (P2P) files that negatively impact your network's performance. Define policies that limit excessive consumption and assure fairness for all users of the same class of service.

### Maximize Business-Critical Application Performance

The NetEnforcer allows you to maximize the performance of your business-critical applications by grouping and defining policies (called "Pipes" and "Virtual Channels"). After classifying traffic into categories such as "Oracle-based Application" or "Time-Sensitive Videoconference", the NetEnforcer maintains application performance during peak traffic periods by guaranteeing bandwidth for higher priority applications and limiting bandwidth for others.

### Monitor Network Activity

The Java-based NetEnforcer-Traffic Monitor presents real-time macro and micro views of traffic and performance from a single, easy-to-read GUI. For example, you can view top consumers of bandwidth or discover the presence of a DDoS attack and its source.



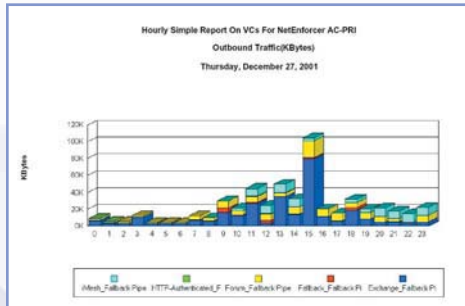
The Traffic Monitor

### Implement Application- and IP-Based Accounting

The NetAccountant software add-on for the NetEnforcer collects traffic data per session, gathering information on source address, destination address, application type and policy. The NetAccountant Reporter uses the collected data to create tabular and graphical reports for capacity planning and resource management.



Network managers can guarantee bandwidth for business-critical applications as well as block or throttle the flow of high bandwidth-consuming applications like P2P.



The NetAccountant Reporter

### Intuitive Java-based GUIs

The NetEnforcer has intuitive Java-based GUIs for policy editing and creation, device configuration, and traffic monitoring. Special emphasis has been placed on ease-of-use and customization so you can easily work with the data most important for maximizing the performance of your business-critical applications.

### Multi-layer Policy Support

The NetEnforcer's multi-layer policy support was especially designed for the quality of service (QoS) needs of corporate networks. Define a Pipe for each of your WAN links and then create Virtual Channels for applications that affect your network's performance, including mission-critical applications such as Oracle, Citrix and VoIP or bandwidth-draining applications such as P2P.

### DDoS Protection

The NetEnforcer detects known types of DDoS attacks and offers a first line of defense that enhances the performance of firewalls and internal network devices. By deploying NetEnforcer you can monitor, record, and block malicious traffic flows and alert users of imminent attacks.

### Enforce Service Level Agreements

The NetEnforcer enables you to enforce service level agreements (SLAs) by assigning fixed minimum and maximum amounts of bandwidth to branch offices, business units, or workgroups.

### Secure Device Management

The NetEnforcer offers a dedicated management port that is physically separated from the ports that carry your network traffic. This prohibits unauthorized access to the device and enables out-of-band management even when the device is in bypass mode.

### LCD/Soft Key Configuration

An LCD and set of soft keys located on the front panel of the NetEnforcer speed the initial configuration of the device. Instructions on the LCD guide you 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 traffic.

### LDAP Directory and Backend Support

The NetEnforcer interfaces to standard LDAP-based directories or text files. This enables corporations to integrate their network policies with their existing corporate user directory so that policies may be defined per department, group or application.

### Complete Fault Tolerance

The NetEnforcer offers 100% uptime with a two-tier approach to fault-tolerant operation:

1. If any software or hardware component fails, the NetEnforcer will switch over to a hardware bypass mode and transparently pass all traffic through the box.
2. Two NetEnforcers can be placed in parallel, with the primary unit acting as the active system and the other as a hot-backup system.

### End-to-End QoS Delivery and MPLS Support

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

### Traffic Redirection Control (Optional)

The CacheEnforcer<sup>®</sup> and the NetBalancer<sup>®</sup> software add-ons enhance your network's performance by controlling traffic flows. The CacheEnforcer reduces WAN bandwidth consumption and simplifies caching administration in a single layout to manage multiple cache servers. The NetBalancer goes beyond traditional load balancing equipment by allowing you to define single policies that control both the prioritization of applications on the network and the distribution of those applications to servers.

Name	In Use	Connection Source	Dir	Connection Destination	Service	Time	Access	Quality of Service	Connection Control
London	✓	London	↔	Any	All IP	Anytime	Accept	Max - 2 Mbps	Pass As Is
VoIP	✓	Any	↔	Any	H.323 G729 Codec	Anytime	Accept	15 kbps per session	Pass As Is
Videoconference	✓	Any	↔	Any	H.323 Video	Anytime	Accept	768 Kbps per session	Pass As Is
Oracle	✓	Any	↔	Any	ORACLE	Anytime	Accept	Min - 128 Kbps	Pass As Is
Web Direct	✓	Any	↔	Any	HTTP	Anytime	Accept	Normal Priority - Virtua...	Pass As Is
Digital Music-P2P	✓	Any	↔	Any	KaZaA-Morpheus	Work Hours	Accept	Max - 10 Kbps	Pass As Is
Mail	✓	Any	↔	Any	EMAIL	Anytime	Accept	Normal Priority - Virtua...	Pass As Is
Fallback	✓	Any	↔	Any	All Service	Anytime	Accept	Normal Priority - Virtua...	Pass As Is
Paris	✓	Paris	↔	Any	All IP	Anytime	Accept	Max - 1 Mbps	Pass As Is
Tokyo	✓	Tokyo	↔	Any	All IP	Anytime	Accept	Max - 1 Mbps	Pass As Is
Fallback Pipe	✓	Any	↔	Any	All Service	Anytime	Accept	Normal Priority - Pipe	Pass As Is

The Policy Editor

## Product Specifications

### Interface Connections

- **AC-202/402/601:** Three 10/100BASE-T half/full duplex autosense Ethernet interfaces, including one management interface, all with RJ-45 connectors
- **AC-802/C:** Two 10/100/1000BASE-T half/full duplex Ethernet interfaces and one 10/100BASE-T management interface, all with RJ-45 connectors
- **AC-802/F:** Two 1000BASE-SX fiber interfaces with SC-type connectors and one 10/100BASE-T management interface with one RJ-45 connector

### Traffic Classification (Per Flow)

- IP/MAC address (with IP range, list or subnet option, or host name); retrieval via LDAP or text file
- Network protocols, IP protocols and applications
- Dynamic port applications (e.g., Citrix, P2P, H.323, Oracle, and more)
- Application content for HTTP (URL, content type, method, host), Citrix (published application, user name), Oracle (database name, user name) and H.323 (audio/video, CODEC)
- Protocol Authentication
- VLAN (ID, priority)
- 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-level-priority traffic flows
- Management for full/half duplex links
- Admission control
- ToS byte re-mark (in-profile byte/out profile bytes)
- "Reserve-on-Demand" bandwidth for very high priority traffic

### Network Security

- Access control - pass/reject/drop
- Protection from Distributed Denial of Service (DDoS) attacks
- Control number/rate of connections

### Cache Redirection and Load Balancing

- Policy-based connection control including cache redirection and server load balancing (optional software packages)

### Configuration

- IP configuration and setup via integrated LCD and keypad
- Remote policy configuration via CLI or Web browser

### QoS Policy Management

- Easy-to-manage, single-table view based on catalogs
- Easy expansion of VCs/Pipes to multiple hosts
- Policy distribution from primary NetEnforcer to other units

### Monitoring and Accounting

- **Monitoring** - Protocol distribution, top clients, top servers, top VCs, top Pipes, VC/Pipe distribution, number and rate of connections, utilization, bandwidth usage (inbound/outbound) with 30-second granularity and storage of historical data
- **Accounting** (via optional NetAccountant) - Inbox accounting of traffic per session for all sessions; accounting using RADIUS server; powerful reporter; ODBC interface for external applications
- **SNMP** - Support statistics collection per VC/Pipe

### Fail-Safe Performance

- Hardware bypass
- Full redundancy support (dual configuration with hot-standby)
- **AC-601/802:** Dual 200W hot-swappable power supplies
- **AC-802:** Dual power feeds

### Network Standards Support

- LDAP, DiffServ/ToS (RFCs 2474, 2475, 2597, 2598), IP Precedence (RFC 791), SNMP, RADIUS and ODBC

### Browser Support

- MS Internet Explorer 5.5, 6.0

### Dimensions

- **AC-202/402:** Standard 1U by 19-inch, rack mountable
- **AC-601/802:** Standard 2U by 19-inch, rack mountable

### Weight

- **AC-202/402:** 12.1 lbs. (5.50 Kg)
- **AC-601:** 21.83 lbs. (9.92 Kg)
- **AC-802:** 25.48 lbs. (11.58 Kg)

### Environmental Standards Compliance & Certification

- EMC Directive 89/336/EEC; EN60950; ETS 300 019-2-2; ETS 300 019-2-3; IEC-68
- FCC-Part 15 Class B; UL 1950
- VCCI: 2002 Class B emission requirements

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### Ordering Information\*

Part No./Model	Bandwidth	Pipes	Policies	Connections
KAC-202/MO-DK <i>Monitoring-Only (No QoS)</i>	10 Mbps	128	1,024	24,000
KAC-202/128-DK	128 Kbps	128	1,024	6,000
KAC-202/512-DK	512 Kbps	128	1,024	6,000
KAC-202/2M-DK	2 Mbps	256	2,048	12,000
KAC-202/10M-DK	10 Mbps	512	2,048	24,000
KAC-402/MO-DK <i>Monitoring-Only (No QoS)</i>	100 Mbps	512	2,048	96,000
KAC-402/10M-DK	10 Mbps	1,024	4,096	64,000
KAC-402/45M-DK	45 Mbps	1,024	4,096	64,000
KAC-402/100M-DK	100 Mbps	1,024	4,096	96,000
KAC-601-PS	100 Mbps	2,048	8,192	128,000
KAC-802/155M-PS-I	155 Mbps	2,048	8,192	128,000
KAC-802/310M-PS-I	310 Mbps	2,048	8,192	128,000

#### Notes:

- 1) When ordering AC-x02, please specify: DK - Disk (HD - hard disk or FL - Flash Memory). For example: KAC-402/45M-FL
- 2) NetEnforcer with Flash memory does not support the NetAccountant add-on.
- 3) When ordering AC-601, please specify: PS - power supply (AC or DC). For example: KAC-601-AC.
- 4) When ordering AC-802, please specify: PS - power supply (AC or DC); I - interface (C - Copper or F - Fiber). For example: KAC-802-AC-F.

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