

Executive White Paper

NETEQUALIZER

Internet bandwidth consumption continues to grow, seemingly exponentially, making it a high priority to find solutions that affordably and effectively optimize your bandwidth. With the growth of cloud-based computing, Video on Demand, SaaS, VoIP, and "all things web", the load that Internet traffic is putting on your network pipes has never been greater. NetEqualizer technology helps you to optimize your network bandwidth by intelligently shaping your Internet traffic. This solution briefing is intended to get you quickly up-to-speed on the NetEqualizer technology, what it can do for you, & why you might want to consider it for your environment.



Our company mission is to create solutions to give you faster networks, with zero maintenance, at the best prices. NetEqualizers are 1U rack-mountable appliances, shaping bandwidth from 20Mbps to 10Gbps bi-directionally. See [Data Sheets](#) for detailed specifications.

What is a NetEqualizer?

The NetEqualizer (www.netequalizer.com) is a traffic shaping appliance that performs advanced Quality of Service (QoS). Through our proprietary **equalizing** behavior-based algorithms, our bandwidth shaping favors well-behaved, latency-sensitive traffic over hoglike traffic.

Simply put, a NetEqualizer shapes your Internet traffic by applying fairness rules to allocate scarce network resources across your entire user base. Fairness is achieved by penalizing network hogs during periods of peak congestion, before they bring your network to a halt.

Along with QoS, the NetEqualizer offers the **core capabilities** in the table at right for even greater control over your network. Two key capabilities are: 1) Bandwidth Limiting, which enables you to set rate limits for different user groups (via IP or IP subnet hard limits, or shared limits using Pools or VLANs), and 2) P2P Containment, which controls both encrypted and unencrypted peer-to-peer traffic. We do all this while remaining easy-to-install, affordable, and low maintenance.

Advanced capabilities built-in to the NetEqualizer include providing [CALEA](#) Compliance, acting as a [HEOA Technology Deterrent](#), and restricting bandwidth usage through setting User Quotas. We also offer a DDoS Monitor and add-on DDoS Firewall, to identify and thwart suspected malicious activities.

NetEqualizer offers a **fresh approach** to bandwidth shaping. Our behavior-based philosophy is the culmination of years of research into the science and behavior of Internet pipes.

Art Reisman, Co-founder & CTO, APconnections, Inc.

Core Capabilities	
Bandwidth Shaping & QoS	Shapes both encrypted and unencrypted traffic on pipes from 20Mbps up to 10 gigabits traffic (full duplex). Behavior-based bandwidth shaping, also known as equalizing, uses fairness algorithms give priority to latency-sensitive applications, such as VoIP, web browsing, web-based applications, and e-mail over large file downloads and video.
Bandwidth Limiting	Bandwidth can be limited by individual IP, IP subnet, VLAN, or Pool. We offer bursting above the rate limit for individual IP addresses. Alternatively, define shared bandwidth by group or location using Pools or VLAN limits.
P2P Containment	Turn-key behavior-based control and containment of all common encrypted and unencrypted Peer-to-Peer (P2P) applications, such as GNUTELLA, KAZAA, etc. P2P Limits can be set for an IP, subnet, or your entire network.
Dynamic Real-Time Reporting (RTR)	Real-time visibility into active connections, penalties, and top flows via Dynamic RTR . View logs and suspected P2P traffic. Set email notifications on key events.
Historical Reporting	Graphical reporting on network traffic included via Traffic Reports. View from 1 hour to up to 4 weeks of upload & download data, by IP, Pool, VLAN or network.
DDoS Monitor & DDoS Firewall	Use DDoS Monitor to identify suspected malicious activities, such as traffic storms and worms. Use our add-on DDoS Firewall to prevent wide-scale brownouts caused by Distributed Denial of Service (DDoS) attacks.
Low Maintenance	Plug-n-play, low maintenance solution. Quick and easy set-up, shape your network. Easily accessible to configure via parameters defined in the NetEqualizer web GUI. Command-line interface supported.
Bandwidth Rules	Supports up to 20,000 simultaneous bandwidth rules.
Affordable	Units priced from \$3,750 to \$22,000. Yearly support & software upgrades (NSS) are less than \$1,500. Yearly hardware warranties (NHW) are \$600 or less.

Why should I invest in a NetEqualizer?

All traffic shaping is a matter of making trade-offs, in order to optimize the use of a critical resource - *your network bandwidth*. As bandwidth costs go down, and adding bandwidth becomes more affordable, how do you decide when you just need more bandwidth versus a traffic shaping appliance?

The NetEqualizer appliance will optimize your existing bandwidth. The ROI for the NetEqualizer comes from several key areas: 1) increased contention ratios (detailed in our blog article [@netequalizernews.com Field Guide to Contention Ratios](#)), 2) deferral of purchasing more bandwidth, which reduces bandwidth costs, 3) increased user satisfaction, thereby reducing Help Desk calls, 3) reduced troubleshooting by network administrators, and 4) increased customer retention (applies to subscriber networks).

How does the NetEqualizer compare to other traffic shapers?

Some traffic shapers use Application Shaping, also known as "deep packet inspection" (DPI). The NetEqualizer does not; we use **behavior-based shaping** (*aka "equalizing"*).

Equalizing looks at the *behavior* of the applications and their usage patterns. By adhering to some simple rules, real-time business critical applications can be differentiated from heavy non-real-time activities, and thus be granted priority on the fly, *without any specific policies needed*. Business critical applications, such as email, VoIP, and web-based applications (including SaaS and cloud-based computing) automatically get priority. Also, as equalizing looks at traffic behavior, it works on both encrypted & unencrypted traffic.

Equalizing enables you to optimize your network resource by fairly allocating bandwidth across all of your users. You do not need to anticipate traffic types, and all network bandwidth is available for use.

For more on this topic, see the table at right or read our in-depth [Comparison White Paper](#).

Comparison: NetEqualizer to Other Traffic Shapers	
NetEqualizer = Equalizing (behavior-based shaping)	Others = Application Shaping (deep packet inspection)
Works well on both encrypted & unencrypted traffic.	Ineffective on encrypted traffic.
Priority is set <i>on-the-fly</i> , based on the behavior of the actual traffic on your network. <ul style="list-style-type: none"> Short, bursty, latency-sensitive traffic gets priority (VoIP, email, web applications). Long, persistent traffic is given less priority. 	Priority must be determined in advance and defined for <i>known</i> application classes. <ul style="list-style-type: none"> False positives may show data incorrectly. No easy way to confirm accuracy.
<i>All bandwidth is available for use</i> , regardless of application classification.	Bandwidth can go <i>unused</i> if application class is not running at expected capacity.
Supports high contention ratios.	Does not support contention ratios.
The most effective for shared Internet trunks	Not the best fit for shared Internet trunks <ul style="list-style-type: none"> Constant labor to tune with changing application spectrum Expect approximately 40% of traffic to be unclassified due to SSL encryption
Simple turnkey solution to optimize VoIP and business applications (corporate WAN).	Good for static links where traffic patterns are constant (corporate WANs)
Low initial cost & low ongoing cost. <ul style="list-style-type: none"> Yearly support is economical 	Higher initial cost & higher ongoing costs. <ul style="list-style-type: none"> Yearly support is expensive
Little or no recurring labor <ul style="list-style-type: none"> No policy files to maintain 	Recurring labor <ul style="list-style-type: none"> Policy files need to be maintained
Conceptually, it takes some getting used to.	Intuitive. Makes sense and easy-to-explain to non-technical people
Detailed Reporting by IP address & subnet <ul style="list-style-type: none"> Shows real-time traffic to help stop abuse Graphs and charts available for history 	Detailed reporting by application type <ul style="list-style-type: none"> Focus of reporting is to show history Only a static snapshot of a changing spectrum
Supports Net Neutrality	Violates Net Neutrality

To Learn More...

We would be happy to provide a detailed walkthrough of the NetEqualizer technology, to help you to determine if this is the right solution for you. Please email sales@apconnections.net or call us at **303.997.1300 x103** (U.S. toll free # (888) 287-2492) to schedule a discussion and online demonstration.

About APconnections, Inc.

APconnections is an innovation-driven technology company that delivers best-in-class network traffic management solutions to give our customers faster networks, with zero maintenance, at the best prices. We design and develop NetEqualizer bandwidth shaping appliances that solve Internet congestion issues while remaining easy-to-install, affordable, and low maintenance. We built our behavior-based "equalizing" technology to optimize critical network bandwidth resources.

APconnections is based in Lafayette, Colorado, USA. We released our first commercial offering in July 2003, and since then thousands of customers all over the world have put our products into service. Today, our flexible and scalable solutions can be found in Fortune 500 companies, major universities, Internet providers, small businesses, non-profits, military, and government agencies on six (6) continents.