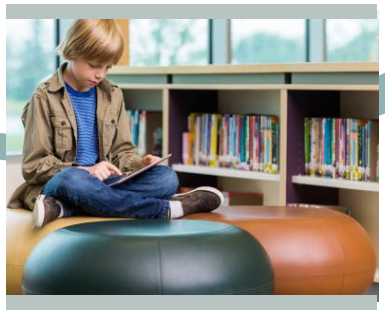
NETEQUALIZER

Library Guide



In working with network administrators at Libraries over the years, we've repeatedly heard the same issues and challenges facing them.

Here are just a few:

- We need an affordable, low maintenance bandwidth shaping solution.
- We need to meet the varying needs of all our patrons while keeping the network truly open to the public.
- We need to ensure access to our online resources for remote users (online catalogs, databases, etc.).
- We need to ensure that even during busy times at the library, our Library Staff gets adequate bandwidth to perform their job functions.
- Our patrons want to play games and watch videos (e.g. YouTube).
- We need a solution that will protect our investment and grow with our network.

NetEqualizer Key Functions

- Fairness-based bandwidth shaping ("equalizing") looks at behavior
- Automatically prioritizes latency-sensitive applications such as email, web browsing, web applications, & VoIP
- Low-maintenance. No policy files to maintain.
- Controls both encrypted & unencrypted P2P
- Reduces RIAA/MPAA requests
- CALEA compliant
- Shapes up to 5 Gbps
- License-upgradeable
- Affordably priced from $3,000 to $14,000. Read our *blog article on ROI*.
- Leasing option available.

About APconnections, Inc.

APconnections is an innovation-driven technology company that delivers best-in-class network traffic management solutions to give our customers better networks, with zero maintenance, at the best prices. We specialize in turnkey bandwidth shaping and intrusion prevention system (IPS) appliances. 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 many types of public and private organizations of all sizes across the globe, including: Fortune 500 companies, major universities, K-12 schools, and Internet Providers on six (6) continents.

Call or email to talk to an engineer: 303.997.1300 x103
sales@apconnections.net

What customers are saying...

"I provide support for sixteen servers with 120 devices attached, thirty-five of which are public work stations. We were getting bogged down by patrons in the library downloading larger and larger files, plus patrons on the outside of the library accessing catalogs and other services.

I found NetEqualizer and once I had it in my hands, it was up and running within twenty minutes. Immediately we saw a difference."

Getty admits it took a day to get used to what he NetEqualizer was doing. The patrons were no longer getting first-served service, but they were getting best-served service. Heavy users were being slowed down so all users could flow optimally.
NetEqualizer also gave him more control and understanding of the usage of his network, so he could see heavy users and identify problems he never could before, and all without having to actively manage it to get the results.

"In a second I can look at the logs to see if there's a problem. The NetEqualizer helps us troubleshoot problems on the network. It's been really great. Solutions like NetEqualizer help me do my job better."

-- **Kevin Getty**, Warren Newport Public Library

Of all the purchases I have made for IT in my 19 years here at Handley Regional, the NetEqualizer was perhaps my best decision ever.

I am thankful to the consultant who did some research to find this product and recommend it. While it doesn't solve our fundamental problem of inadequate bandwidth, it has been a lifesaver in keeping essential ILS functions operating. Thanks, NetEqualizer!

-- **Sara Holloway,** Handley Regional Library

NetEqualizer has been used to solve these issues and challenges for many libraries around the world.

We need an affordable, low maintenance bandwidth shaping solution.

NetEqualizer is intended to be a "set it and forget it" type solution. Once you install and configure your NetEqualizer, it handles traffic shaping around the clock with little additional maintenance from your network administrator.

Configuring Equalizing is as simple as three steps:

1) Define the size of your inbound & outbound Internet pipe,
2) Establish the level of total bandwidth usage at which you want equalizing to kick in (default is 85%), and
3) Make sure that equalizing is "on".

We believe that traffic shaping can be affordable. Our NetEqualizer units range from $3,000 to $14,000, licensed bi-directionally to shape 10Mbps to 5Gbps. Our yearly fees for access to software upgrades, support, and hardware warranties are under $1,500. In addition, under our Lifetime Buyer Protection Policy, we also protect your initial investment by offering a trade-in credit towards a new unit when it is time to retire a unit. We offer a compelling ROI, helping you to optimize your Internet resources.

The NetEqualizer is typically installed between your Router and your Switch, acting as a transparent bridge. As we do not perform deep packet inspection (DPI), we maintain Net Neutrality for traffic passing through the NetEqualizer.

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We need to meet the varying needs of all our patrons while keeping the network truly open to the public.

Patrons who come into the library have a variety of needs for computer usage. Some want to just surf the web, send email, or hold an online chat session. Others may need to download files or watch YouTube videos.

What is great about NetEqualizer bandwidth shaping (aka "equalizing") is that it is *fair*. Low-bandwidth users do not have to share the pain of a slow, congested network with the network hogging applications. Your patrons *expect web applications, email, VoIP, and web surfing to be responsive, and with equalizing, they will be.*

For example, suppose you have 50 patrons using the network, as follows:

- 85% are web surfing
- 50% are also running online library applications
- 40% are also using email
- 30% are also watching YouTube

In this example, if your trunk were saturated, equalizing would kick in and would add latency to the YouTube streams watched by 30%, since they are the most bandwidth-intensive, leaving all the other streams alone. So instead of having your network crash completely, a few YouTube videos would break up for a few seconds, and when conditions abated, they would be allowed to run. The majority of the traffic on the network is well-behaved, short/bursty bandwidth uses, such as web surfing, web-based applications, and email and so will not be penalized.

Notice that bandwidth allocations per user do not matter. We do not try to hit fixed allocations, *we just put delay on the nastiest "hog" traffic until the bandwidth usage overall drops back below 85 percent* (or the setting you choose). The value is that you get the best possible usage of your bandwidth without having to micro-manage y our network.

We need to ensure access to our online resources for remote users (online catalogs, databases, etc.).

In today's library environment, patrons are relying increasingly on technology to access library resources and manage their library accounts from home. It is important that they can all access and effectively use library applications over the Internet.

The NetEqualizer automatically gives priority to web-based library applications and portals, which typically use short-bursty bandwidth, and so will retain priority during peak periods of congestion on your network.
The NetEqualizer reviews bandwidth utilization for both inbound and outbound traffic, utilizing its "fairness" rules to reduce network congestion for all patrons on your network.

The NetEqualizer not only will improve the web-user experience of patrons on-site, but also remote users. Freeing up the network from patrons using bandwidth-intensive applications in-house will ultimately enable better access to all patrons of the library's online resources.

We need to ensure that even during busy times at the library, our Library Staff gets adequate bandwidth to perform their job functions.

A common complaint we hear is that library staff are unable to use the Internet to complete their job functions during busy times. We offer a way to allocate network resources to library staff, in order to protect them from patrons consuming the entire pipe. This feature supplements equalizing and is called "Pools".

Pools are shared bandwidth limits. Typically, Pools are defined to split out bandwidth to either groups (library staff, patrons) or buildings (library branches within a region) giving them separate bandwidth allocations. Think of a Pool as a mini virtual NetEqualizer, as each Pool is shaped when it becomes congested (typically 85%).

Faster Networks

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For example, if you have a 30Mbps pipe, and set up Pool 1 for your library staff at 10Mbps and Pool 2 for your patrons at 20Mbps, you are allocating shared bandwidth maximums for each group. Your patrons can only use up to 20Mbps, thereby keeping 10Mbps free for library staff use at all times. Note that this bandwidth is not reserved; Pools just define a maximum shared allocation.

Our patrons want to play games and watch videos (e.g. YouTube).

When your Internet is not congested, which we define as below 85% utilization, anything can run freely on your Internet pipe.

However, during congested periods, your Internet is in danger of coming to a halt due to hoglike traffic. During peak, YouTube and other videos will be equalized, in order to keep the majority of traffic running smoothly.

We have written a lot about YouTube, which is definitely considered a bandwidth hog. Bottom line, the NetEqualizer will add latency to "hog" traffic when the network is congested (over 85% utilization, or whatever setting you choose). This will add delay to the YouTube videos, while enabling other users to continue working with low-bandwidth applications, such as online applications, email and web surfing. This concept of "fairness" enables your network to continue providing quick response times to most of your users while restricting network hogs.

To learn more about our thoughts on YouTube, please review our blog posting How Much YouTube Can the Internet Handle? We also offer a NetEqualizer Caching Option (NCO) as an add-on, for those interested in caching YouTube and other port 80 files of sizes 2MB-40MB (read our FAQ).

Gamers will typically see *improved* performance once a NetEqualizer is in place. Gaming traffic by its very nature will get priority, just like emails and VoIP. This is true 99% of the time (except Second Life which can use a full T1 per player).

We need a solution that will protect our investment and grow with our network.

When you purchase a NetEqualizer, you automatically get our lifetime buyer protection policy. We protect your investment in NetEqualizer hardware by offering a trade-in credit towards a new unit, when it is time to retire a working unit or in the event of an equipment failure. You can read more about our Lifetime Buyer Protection Policy.

In addition, each NetEqualizer series can be updated as the size of your pipe is increased, by purchasing a NetEqualizer license upgrade. Also, unlike other solutions on the market, you pay a one-time license fee for the NetEqualizer, and then only a reasonable yearly support fee (NSS) to cover software upgrades and support questions. We also offer an optional yearly hardware warranty (NHW) for up to 4 years.

You can size your network to support your anticipated number of patrons, staff, and remote users. Then purchase the NetEqualizer that matches your network pipe size, knowing that you have the option of a license upgrade to support more users later on as your network grows.

Furthermore, if you need to architect your network to support full redundancy, you can buy a second NetEqualizer and put it in place as either a cold backup or in hot swappable mode.

For more information...

Although we've covered a few of the most pressing issues libraries face, we understand that everyone's situation can be different. To learn more about how the NetEqualizer might help your library, please contact us at sales@apconnections.net or call us at 303.997.1300 x103.