



CASE STUDY

SCHOOL SYSTEM DEPLOYS FLOWTRAQ TO MANAGE INTERNET BANDWIDTH USAGE AND AVOID COPYRIGHT INFRINGEMENT

THE CHALLENGE: LIMIT INTERNET BANDWIDTH USAGE AND PREVENT COPYRIGHT VIOLATIONS

While managing Internet access by students, faculty and administration, SAU 70 needed to ensure end users could not consume an inordinate amount of the school unit's bandwidth and that no peer-to-peer (P2P) file-sharing occurred outside the network. The school unit firmly believes in enhancing education by giving faculty and students access to Internet resources but also needs to ensure movies and other copyrighted material are not illegally downloaded and shared.

This requirement was particularly challenging because of the school's policy to allow end users to access the wireless network with their own devices including smartphones, tablets and laptops. "We did not know at any given time what devices might be using our network bandwidth," said Marion Bates, District Technology Supervisor. "We also did not have a filtering policy to prevent rogue devices from taking up too much bandwidth. P2P networks established by students to share movies saturated the bandwidth on a daily basis, and we began receiving copyright infringement notices from the movie industry."

"We first tried adding more bandwidth and upgrading the network backbone as well as requiring log-ins for the wireless network, but the bandwidth problems still persisted," Bates said. "We wanted a solution that would allow us to monitor the network and find offending IP addresses. In addition, we did not want to ban users from the network, but we did want to warn and restrict them so that they would not impact other users."

NEW HAMPSHIRE SCHOOL ADMINISTRATIVE UNIT 70

Hanover, New Hampshire and Norwich, Vermont created the nation's first interstate school district in 1964 while allowing each town to retain its respective elementary schools. Operating as New Hampshire School Administrative Unit #70 (SAU 70), the school system now employs a staff of close to 50 teachers, administrators and support personnel that provide educational services to approximately 500 students.

THE SOLUTION: FLOWTRAQ BANDWIDTH-THROTTLING DISCOURAGES INAPPROPRIATE INTERNET USAGE

SAU 70 evaluated multiple tools including a content filter to address the issue. But these solutions did not offer the traffic-shaping capabilities Bates sought and provided limited features such as bad-site/good-site filtering. “We needed more capabilities than this and did not want a solution where we would give each user a specific amount of bandwidth” Bates said. “We wanted the bandwidth to be expandable for legitimate uses.”

The school district found the answer it needed in FlowTraq, which provides capabilities that effectively alter end-user behavior. FlowTraq alerts the IT team when an IP address exceeds the threshold for each usage pattern, hands the IP address to shell scripts, and deploys a firewall rule to throttle the bandwidth allocated to that user. The user is also placed into a pool with other users accessing too much bandwidth. This slows down the speed of user Internet protocols even further.

“FlowTraq helped us with the implementation, which was fairly easy and straightforward,” Bates added. “We used an inexpensive Linux-based router with a traffic shaping tree and scheduled four different alerts, each looking for a different class of traffic. If a user continues to consume too much bandwidth, FlowTraq takes them through progressive levels of reduced bandwidth, which increasingly slows down their access and eventually discourages rogue users from trying to download illegal content. This approach suits us because we didn’t want to be too aggressive in limiting legitimate uses of the network.”

The FlowTraq free-flow exporter runs on the Linux router with two Ethernet interfaces. All traffic passing across the WAN is analyzed in real time by FlowTraq, which generates alerts based on two patterns:

- A single internal client with many connections to external clients (P2P)
- A single internal client steadily pulling large amounts of data (such as streaming video) for longer than a few minutes

THE RESULTS: A PERFECT BALANCE BETWEEN VIDEO NEEDS AND LIMITING INTERNET ABUSES

FlowTraq and the traffic-shaping router provided SAU 70 was exactly what the school unit needed to manage Internet bandwidth usage as well as identify and punish bandwidth abusers — at approximately 10 percent of the cost of other solutions the school unit investigated.

“We also benefit from FlowTraq offering personal support from experts rather than a sales team, which is what we have experienced with other software solution providers,” said Bates. “With the FlowTraq approach, we can immediately address any issues we run into because the front-line team knows the technology so well.”

“ FlowTraq essentially gives us the perfect balance we need: We can make sure Internet activity does not get out of hand, but we can still encourage teachers and students to take advantage of our internal video capabilities. ”

— Marion Bates,
District Technology Supervisor

Since the FlowTraq deployment, SAU 70 has experienced no copyright violation notices, and the available bandwidth from the school district's ISP has not topped out at the established ceiling. FlowTraq also gives Bates the ability to define exceptions for internal servers and other unfettered hosts. Bates particularly appreciates the multiple-level bandwidth throttling that FlowTraq allows so that users accessing a P2P network are throttled more than users accessing video.

ABOUT FLOWTRAQ

FlowTraq® provides software and services for high-performance network monitoring, analytics, security and forensics to detect a range of network behaviors, including distributed denial of service (DDoS), brute force attacks, botnets, worms, network scans and other network traffic anomalies. To request a free trial of FlowTraq, visit www.flowtraq.com/trial.



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