



## KENTUCKY DEPARTMENT OF EDUCATION

# KENTUCKY DEPARTMENT OF EDUCATION CUTS SPAM WITH HOSTED E-MAIL FILTERING SOLUTION

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INFORMATION SECURITY AND PRIVACY

STATE OF KENTUCKY



## ***EXECUTIVE SUMMARY***

The Kentucky Department of Education manages the public educational system for the state's 174 school districts. An internal IT services group, the Office of Education Technology (OET), oversees the schools' Microsoft® Exchange Server 2003 e-mail environment, which has more than 750,000 mailboxes. That environment was plagued with a growing spam problem, which slowed down the system and resulted in lost time and productivity for students, teachers, and IT administrators. To fix the problem, OET deployed a hosted spam-filtering solution from Microsoft EHS. Since then, the department has seen improved protection against spam while realizing millions of dollars in savings related to e-mail management costs. The department's solution has also restored lost instructional and administrative time, and empowered individual school districts with better e-mail management tools.

## ***BUSINESS PROBLEM AND SOLUTION***

The Kentucky Department of Education manages the K–12 public educational system for the state of Kentucky. Based in Frankfort, Kentucky, the department employs 650 people to oversee the state’s 174 school districts, which comprise 1,243 schools, 650,000 students, and 100,000 teachers and administrators.

The educational system’s e-mail environment is based on the Windows® operating system and Microsoft® Exchange Server 2003, and it contains more than 750,000 mailboxes. There’s a mailbox for each student, teacher, and administrator. It is a critical messaging system for all users. Students rely on it to communicate with teachers, and administrators use it to send important information to teachers via distribution lists.

Unfortunately, the e-mail system experienced a growing spam problem. Of the approximately 9 million e-mail messages that came into the network each day, only 250,000 were legitimate. Some of the spam was offensive. The whole network was getting backed up, and could not deliver legitimate e-mail messages to users. The system was not capable of handling that much traffic.

As a result, it would often be four or five days before a legitimate e-mail message reached its intended recipient. School e-mail users and IT administrators alike experienced decreased productivity. Lost technical support time was also a major issue. Staff was working many extra hours at night and on weekends to try and control the spam problem which kept them from doing other support work. Although OET had an internal e-mail filtering solution in place, it was costly and clearly not effective at handling the massive amount of spam.

In May 2007, KETS learned about Microsoft® Exchange Hosted Services. Exchange Hosted Services (EHS) provides a range of managed services that help companies address e-mail security and other management issues. EHS offers a solution that eliminates spam and other e-mail-related threats before they enter corporate firewalls.

It was determined the EHS was the best solution as it allows cost savings in the form of both equipment and staff time. The spam assassins enabled utilization of other services resulting in a cost savings in multiple areas of the organization. With EHS in place, the security team is able to focus on the customers’ issues and resolve problems that affect day to day business.

In June 2007, KETS contracted with EHS to deploy the Microsoft Exchange Hosted Filtering service. This solution was fully implemented July 1, 2007. With this service, all incoming KETS e-mail messages are routed through the Microsoft global data-

center network, where multiple filters screen out spam, viruses, and other security threats before passing the messages to the KETS e-mail servers. If a data center in the network is unavailable, traffic is automatically sent to a different data center, without interrupting the service. The service also uses Microsoft algorithms to analyze and route message traffic between data centers, which means companies' networks receive the timeliest and most efficient e-mail delivery possible.

Communications were dispersed through the Office of Education Technology (OET). The OET KETS Engineers (KE) were provided documentation on what services were offered and how to navigate the product. Web tutorials were also provided by EHS on managing the product. This solution was discussed at several of the KE regional meetings at which time each region was provided with a visual walkthrough of the product. As it stands today, the districts have access to the management guide that is available on demand through the EHS console.

### ***SIGNIFICANCE OF THE PROJECT***

Exchange Hosted Filtering is deployed over the Internet, with no need to modify the existing e-mail infrastructure; a simple mail exchange record change gets the process started. As a result, the overall investment was manageable for KETS.

IT administrators can quickly and easily review e-mail marked as spam, which is quarantined at the data center network for up to 15 days. These messages can also be sent to a specific user's mailbox, such as that of a district IT administrator, for review. This option provides school district IT employees with their own e-mail management capabilities.

Using Microsoft Exchange Hosted Filtering, the Kentucky Department of Education has been able to greatly protect its messaging infrastructure against spam and viruses. As a result, the department is seeing drastically reduced IT services costs and is restoring valuable instructional and administrative time. The solution also makes it possible to provide school district IT administrators with better spam-management capabilities.

Within one month of deploying its new spam-filtering solution, the Kentucky Department of Education noticed that spam messages simply were not entering the network. In October 2007, for example, the hosted service handled almost 48 million e-mail messages for the entire KETS-managed Exchange Server environment. It was determined that about 37 million of those messages were either spam or viruses, none of which were allowed to go to student, teacher, or school administrator mailboxes.

Because it offers protection against spam, viruses, malware, and other threats, Exchange Hosted Filtering gives KETS IT administrators confidence that they did not have before. Exchange Hosted Filtering has greatly improved the ability to protect the e-mail environment and deliver mail in a timely manner.

## ***BENEFIT OF THE PROJECT***

### ***Increased Productivity/ Improved Operations***

Because Exchange Hosted Filtering is so effective at filtering spam and analyzing and routing message traffic, e-mail messages are now sent and received within the KETS network practically instantaneously. As a result, teachers and administrators can be more productive, completing student evaluations and other tasks much more quickly and efficiently.

The success of Exchange Hosted Filtering has also meant a big reduction in help-desk calls from teachers and administrators. Users are no longer frustrated from waiting for important e-mail messages; therefore, they are not calling the service desk anymore. That gives OET even more of an opportunity to focus on supporting other important instructional technology services for schools.

### ***Reduces IT Costs by Millions of Dollars***

By deploying Microsoft Exchange Hosted Filtering, the Kentucky Department of Education avoided spending millions of dollars that might have otherwise been spent on spam management. The department calculated that the average amount previously spent per user to process spam had been \$77 per month, factoring in loss of productivity, network utilization, and data storage. Using that figure, the department says that by using Exchange Hosted Filtering to filter spam, instead of requiring administrative staff members to process those messages, it saved more than \$11 million in productivity dollars in October 2007.

An extensive cost analysis was conducted comparing the costs paid for this service to what was spent on other filtering services. In the month of October 2007 alone, Exchange Hosted Filtering helped save more than \$2 million for all the school districts combined. The industry average cost per message to filter spam is \$.06, meaning it would have cost \$2,190,773 for the month of October if KDE had paid the industry rate. Using Exchange Hosted Filtering instead of other spam filtering services, the Kentucky Department of Education and the Kentucky K-12 school districts saved \$2,154,261 in the month of October.

***Restores Lost Instructional and Administrative Time***

The Kentucky Department of Education is also giving back valuable student instructional time thanks to Exchange Hosted Filtering. The department recently conducted a review of lost instructional time related to the massive amount of unwanted e-mail messages. Estimating that the average time spent handling one piece of spam is five seconds, the department determined that, in aggregate, it is saving teachers and students more than 40,000 hours of classroom time by reducing spam with Exchange Hosted Filtering.

The new solution is also restoring lost time to the 16-person OET Infrastructure Support Team. Exchange Hosted Filtering eliminates almost all incoming spam, so staff can now concentrate fully on daily IT tasks such as configuration, patch management, and general maintenance issues.