



Case Study



Mount Saint Agnes Academy

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Case Study for Mount Saint Agnes Academy

Company profile

Mount Saint Agnes Academy is a private school on the island of Bermuda established in 1889 by four sisters of charity of St. Vincent DePaul. Mount Saint Agnes is dedicated to providing a high quality education in a caring, Christian environment and has done so for 115 years. The school currently consists of 350 students and 45 teachers.

Business situation

Mount Saint Agnes called upon Computer City to assist in evaluating the existing network with the goal of improving internet performance and developing a network that would allow them to effectively deliver and use a technology curriculum. The network was to also become scalable and flexible allowing students to comfortably work in other areas besides the computer lab.

The school was utilizing a 512k DSL connection providing internet access for all students and faculty. With the original solution the staff and students struggled with their internet connectivity especially during peak usage making this learning aid unusable and restrictive.

The initial network design was very labour intensive. It required that during the majority of the summer IT staff had to load new software and fix hardware issues in preparation for the next school year. IT staff also needed to keep track of all the network addresses assigned to each computer as they were manually set each summer. Keeping track of these lists was also administratively heavy and resulted in quite a few IP conflicts throughout the year.

The school ran two different networks, one for teacher access and one for student access. This limited the number of workstations that teachers and students could use and the areas in which they could work. Teachers could only log onto machines that were connected to their designated network and students to theirs.

Technical situation

Computer City engineers went on site to provide an assessment of the current infrastructure with the goal of better organizing and developing a strategy to enhance the existing infrastructure in stages. This would allow the school to budget for the system enhancements over time and not be a large financial burden all at once, which was a requirement for Mount Saint Agnes.

The following key points were the areas that the engineers felt needed to be addressed to ensure that the goals were met by Mount Saint Agnes:

- Restructuring of internet access
- Consolidation of the servers into one location and network
- Increase the speed and access to the network for greater mobility throughout school
- Establish a messaging system that would be more efficient

Solution

The project was broken up into three segments, spanning over three years. The first segment started in 2006. Computer City engineers broke all of the scattered domains and rebuilt the servers to properly allow them redundancy and load balancing. Services that were improved upon were load balancing the DNS servers and adding three additional DHCP servers. IP scopes were changed as there was not a sufficient amount of addresses available for their future equipment needs and expansion. By changing the scopes, Computer City also added in additional subnets for management purposes. During this phase the engineers also carried out a complete wireless survey and installation allowing at least ninety percent of the school building to have wireless network coverage. There is also a plan in place to expand the wireless coverage to one hundred percent coverage including the gym, cafeteria, and courtyard at a later date.

The scope of the project included the additional installation of various software modules and the creation of four hundred plus user accounts in multiple active directory organizational units.

Exchange Server 2003 was installed and Mount Saint Agnes moved to a self hosted mail solution rather than relying on limited POP3 services hosted by an external provider. This allowed for all students to have personalized email addresses.

Installation of SQL 2000 and a web server allowed for the library to make their large book collection available via the web. Students gained the ability to search and check out books from home as well as anywhere in the school.

During the second stage in 2007 the project covered upgrading and replacing core network components. Computer City engineers implemented a managed switch environment consisting of multiple VLAN's to reduce broadcast traffic and allow more control in implementing security policies. During the implementation of the switches by the engineers, the server racks were rearranged and all drops (network cables) colour coded for identification of teachers, students, wireless access points and printers.

The final stage took place in 2008 in which a server room was constructed on site, utilizing the former supply room. Working with local vendors, Computer City recommended a new air conditioning system, and supervised electrical work to support the new server and rack system that finalized the project. One of the key points of hardware was a storage solution and a new Exchange server. Storage was configured in two arrays to provide additional user storage on one and dedicated Exchange stores and log files on the other.

Uptime monitoring software was purchased and the agents installed on the servers, enabling health and statistical tracking of all the service and disk usage.

Finally the engineers from Computer City installed an email and content filtering system from MessageLabs which decreased their spam e-mail 98%, conserving space on the server and bandwidth on the internet connection.

End Results:



Benefits

The solution provided by Computer City provided a cost savings to the school. Less time is required by the IT staff at Mount Saint Agnes to monitor and manage the network, especially during the summer months. The staff is able to work in several locations of the facility, able to connect to the network wirelessly, resulting in an increase in daily productivity. The installation of the MessageLabs service decreased spam and eliminated malware, including viruses that are attached to email and websites, which reduced the workload to remove malware or re-image infected machines. Also, future upgrades to internet bandwidth could be postponed as existing bandwidth was more effectively used, and less storage was taken up by unwanted content. The controlled temperature server room decreased down time for servers that were experienced due to overheating in the previous location.