How one school's simple hardware upgrade helped improve its entire IT infrastructure

By Michael Patrimonio

Even the simplest IT environments can harbor complex challenges. And for some organizations, one simple fix only uncovers a new need. A public charter school in Washington, D.C. had exactly that kind of environment.

The school has a fairly simple IT environment to support its more than 320 students from grades 6 to 12. An HP shop, it had two servers and a SAN, and virtualization through VMware.

Upgrading that environment by replacing a few components seemed simple on the surface, but some network constraints and unexpected challenges made the job a search-and-rescue operation of installations and fixes. These challenges were more than the IT department could handle in house with a school of students, teachers, and staff to keep up and running.

A seemingly easy hardware upgrade? Maybe not.

With a few hardware components approaching end-of-life, the school aimed to expand its processing capability by adding two next generation (Gen9) servers to its environment and decommissioning one of the older (Gen5) servers, increasing the number of production servers from two to three. It also needed to replace its one storage array, an HP MSA 2212. The school was satisfied with its HP hardware, and budgeted to replace its soon-to-be-obsolete server and storage unit with the newest models.

Of course, a storage replacement would also entail some data migration, which posed a challenge. Nearly every school-related IT task, from email to VoIP to management applications to students' personal information, was stored and run on this simple architecture. Any downtime, as a result of the migration, had to occur during non-school hours or weekends, or threatened to effectively shut down teaching for a school day.

But the school's IT department was lean, and needed a helping hand in installing the servers and storage, and migrating the data, without disrupting teachers and students and while attending to the day-to-day IT workload. What the school needed was a plan, and an expert that could help carry it out.

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Solving one problem, followed by solving a few more

The school purchased the new hardware through SHI, which had provided virtualization software support for the past year and a half.

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And although it was only increasing its net server capacity by one, the school's IT department needed help to install and configure the new hardware, two HP DL360 Gen9 servers and one HP MSA 2040 array, while also providing in-classroom support to students and staff. SHI's technical expertise would mean the new hardware was installed quickly and properly.

But when it started replacing the hardware, the IT team and SHI saw this was a bigger job than anticipated. Working together, the parties were able to rack, cable, and initialize the hardware without a hiccup, but as they did so, they discovered that the school's VMware needed proper configuration and was behind in the upgrade cycle. It was another wrinkle to the project, but one that could be solved by cleaning up improperly defined rules within VMware, in addition to upgrading the software to version 6.0.

Still, the biggest part of this hardware upgrade was yet to come – data migration. Transferring the data to the new MSA wasn't the most complex job, but it needed to be carefully executed to minimize work disruptions. SHI's experts teamed up with the school's IT team to take the system down during night and weekend hours to complete the migration, which redistributed 19 VMware virtual machines and migrated approximately 3 terabytes of data.

The school's hardware upgrade ballooned into a bigger project that, once carried out, improved the IT setup of the entire school through new storage and enhanced virtualization. But in a busy IT environment central to the school's operation, an expert's help not only accelerated the project, but set the entire IT house in order.

But while they were at it, they discovered another issue that needed to be fixed – two storage network switches needed proper configuration. Finding the right tools and establishing the right credentials took time and expertise to sort through, even for a relatively simple task like this one. Finally, the school's data migration was completed, its minor problems patched up, and its network enhanced.

The slow and steady approach to a set of problems

The school's hardware upgrade wasn't as simple as plug in and go – it learned its network switches could be better utilized and its virtualization needed a proper configuration. Its data migration had to avoid disrupting students learning in the classroom.

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Case Study: How one school's simple hardware upgrade helped improve its entire IT infrastructure
https://blog.shi.com/hardware/how-one-schools-simple-hardware-upgrade-helped-improve-its-entire-it-infrastructure/

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