

## **Information Systems**

In 2009, the department's main focus was on upgrading the server room's infrastructure to increase efficiency, add redundancy and create a necessary disaster recovery plan.

We began the year with the replacement of the server room's electrical panel with an 18 circuit, 120/240 volt, 100 amp, 3-phase panel. This upgrade allowed us to install an 8 kVA (expandable to 16 kVA) uninterruptible power supply (battery backup). This new battery backup device was hardwired directly to the newly installed panel via a 240 volt 50 amp power cord whip. Utilizing the higher voltage, allows for the same power to be delivered to this unit using ½ the current. Devices running on less current tend to generate less excessive heat and in turn require less cooling.

In March we installed a blade server center, a 1.5 terabyte (expandable to 64 terabyte) NAS/SAN hybrid storage repository and an 8 tape autoloader library. The combination of these units allow us to begin to retire old stand alone servers using direct attached storage and direct attached backup tape drives and redeploy them in a shared storage environment with automated tape backups. The 1<sup>st</sup> server to be replaced was the town's domain controller. With the new domain controller in place, we now have the ability to allocate block level storage to each user as needed, and automatically backup this data to tape. We will also be able to allocate storage space for all other server applications as needed. As more servers continue to come online and we begin to use up the original 1.5 terabytes we can easily add more storage drives to the array by scaling up to 64 terabytes. By consolidating these devices we are creating an environment which best leverages our IT resources for the future and reduces our overall energy consumption. This design is also the ideal configuration for future virtualization of both servers and virtual desktops.

With the server room being the hub of the town's fiber distributed network, both the town & school district have added a substantial amount of equipment along with the additional accompanying heat output to this room over the past few years. Last spring it became quite obvious that our current cooling system was inadequate. The old cooling equipment consisted of a 24-year old 1.2 ton AC wall unit and a 20-year old .9 ton wall unit. Neither of these units was designed for cooling a true computer room. Both were incapable of regulating temperature relative to BTU output. The BTU output of a server room will normally fluctuate with use, more output during normal business hours with less during nights and weekends. Working together with the school's technology director, the town's facilities manager and the DPW director, we concluded that a 4.2 ton ceiling mount unit designed specifically for computer rooms would be the best solution. The new unit was installed in June and has enough cooling power for us to double our current capacity in the server room, yet consume less energy then both of the older wall units combined.

In 2010, we intend to deploy virtualized servers and desktops (thin-net clients) to further increase efficiencies and hope to deploy a secondary NAS/SAN for additional disaster recovery capabilities at another location within town via the town's fiber optic network.

Respectfully submitted

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