

NETVERSTY

Netversity Solutions for the small-to-medium size data centre

A medium size company was planning to move to a new office and warehouse complex, a decision that allowed them to design and plan a better data centre for their current and future needs.

The one problem was it was restricted by floor space and the room allotted to the company was long and narrow. Any design would have to be extremely effective in maximizing the floor space. The initial design that was looked at was a single row design incorporating data cabinets, in-row cooling and an in-row UPS.

There were some issues with this design starting with the fact a row started from one wall and continued through the data centre.

This created a path of about 12 metres for the data centre personnel to walk to get from the front of a cabinet to the back of the same cabinet.

As well, with only one door to the data centre there was only one path in or out, which created a potential escape hazard.

A single in-row cooling cabinet would not have been able to provide effective "hot aisle/cold aisle" cooling. The UPS required two cabinet spaces to house it and an accompanying PDU/transformer. In addition, since the data equipment cabinets were only 61 centimetres wide, available space for cable management in a Cat 6 environment was minimized.

Netversity Solutions reviewed the design and recommended changes that made the special requirements of the long narrow data centre more efficient and effective.

The in-row cooling units were eliminated and two Canatal Series 8, 10-tonne air conditioning units were specified for redundancy for data centre cooling. These were ducted together up and across the ceiling into the cold aisle.

The hot aisle air returned into the lower portion of the AC units across the aisle rather than out and back into the aisle. Access to the units was now available through three sides rather than two and the redundant unit allows for one unit to be serviced while the other is running.

As well, the AC air filters are outside of the equipment row so that when the filters are cleaned or replaced, any dust that may fall out is far away from the equipment.

An in-row Eaton Powerware Modular Blade UPS with four 12k UPS modules was also specified. The Powerware Blade UPS required only one cabinet space, as it did not require a separate cabinet for a transformer or PDU. This move also eliminated the associated heat and EMI issues that transformers create.

The power distribution from the Blade UPS is conducted via Eaton RPM's (Remote Power Modules) and power patch panels mounted in the equipment cabinets. The RPM's have power monitors and circuit protection in them making it easy to access the circuit protection and power consumption within a cabinet.

The in-row UPS allowed us to take advantage of the 'hot aisle/cold aisle' cooling to keep the UPS electronics and batteries cooled. The modular approach also allowed for UPS sizing to increase as the client's data centre grows and allows for safe maintenance as each module has a built in bypass switch.

Overall, the reduction in cabinet requirements allowed a design change in how the cabinets were laid out allowing an increase in cabinet width to 81 centimetres.

This provided better cable management, more airflow around the equipment and easier access in mounting and routing power and patch cables.

It also allowed the row to be moved away from the end wall allowing easier access from the front to back of the cabinets and more importantly, allowed a secondary escape path if there was a safety issue within the room.

Netversity Solutions provides clients full infrastructure support by offering equipment racks, cabinets, cable management systems, UPS solutions, power distribution and cooling solutions needed to effectively and efficiently design, support and manage data and voice networks.

For additional information on this project or any of Netversity's other installations, please contact Roman Dabrowski RCDD at Netversity Solutions at 905-952-2288 or e-mail: rdabrowski@netversity.ca, or on the web at www.netversity.ca.



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