



ABOUT THE COMPANY

Established in 2009, Micron21 started out as a contract supplier to Australia Post. Since then, it has transformed its original Melbourne facility into a high-efficiency, managed service provider led by its pioneer and Managing Director James Braunegg. Today, Micron21 prides itself in holding a niche position in the market by offering quick turnarounds to solutions ranging from single websites to complete enterprise grade data centre solutions and Network Security Products. Micron21 hosts a large array of high-profile clientele, including local, national and international businesses and government agencies all of whom are relying on Micron21 to provide mission critical services 24 x 7.

Micron21's Kilsyth facility boasts a fully redundant data centre, which provides continuous power, cooling, security and a highly diverse data transmission service. Its core business products include Server Co-location, DDoS Protection as-a-service, Virtual and Physical Dedicated Servers, Cloud Services, Domain Names, High Performance Webhosting, Disaster Recovery Solutions, Load Balancing, IP Transit, Wireless Network Services, Point to Point Fibre Services, Security Services, Backup and Infrastructure as-a-service, Managed Services and Solution Architecture.

Case Summary

Location: Australia

Vertiv Solution:

- Liebert® HPC-M free-cooling chillers
- Knurr E-series racks
- Chloride 80
- NET XL UPS
- Liebert® XDP cooling systems
- Liebert® PEX CRAC
- Liebert® CRV (in-row coolers)

The Situation

Micron21's ultimate goal was to have their data centre awarded an Uptime Institute Tier IV Fault Tolerant Facility. The first step in that process is the Tier Certification of Design Documents. A Tier IV Fault Tolerant classification includes high reliability and active fault monitoring and management capabilities that will provide continuous and stable power despite maximum IT loads.

MICRON21

A Vertiv Case Study

The Journey towards Achieving Tier IV Status

Relatively few colos have achieved a Tier IV rating from Uptime Institute. Hence, a major challenge for Micron21 was finding local experts who have real-world experience in understanding design requirements to achieve 100 percent redundancy in a high density data centre. Vertiv was able to provide knowledge and expertise in the power and cooling design, build and servicing of Tier I III and IV data centres. This was critical to Micron21's ambitious plans to grow an existing footprint from a 10-rack to a 100-rack high density colocation data centre.

James Braunnegg explains, "My main goal was to have a purpose-built facility that provides my customers with the very best in service and redundancy – keeping them online at all times. Having had a long standing relationship with Vertiv, I found very few suppliers who could partner with us and provide the solutions that could help Micron21 in its journey towards achieving Uptime Institute Tier IV status. Luckily, Vertiv were able to help, and introduce me to other experts in this field."

Maximising rack space on an existing floor plan was one of the biggest challenges in the design of this colocation facility. This meant the design needed to be both scalable and energy efficient all on a small footprint.

The Solution

The colocation facility relies on a free-cooling chilled water solution with complete redundancy built in. In addition, they have deployed a separate refrigerant solution. The two systems are designed to run independently in order to ensure complete redundancy, therefore, Micron21 is uniquely able to offer 100 percent cooling system redundancy to the racks contained within the facility.

The chillers are also designed to run at high temperatures via multiple chilled water coils. By increasing the temperature supplied and returned to the IT load, it increases the window of opportunity for free cooling. For example, if water is supplied at 15 degrees and it returns back to the chillers at 20 degrees, then anything below the set ambient temperature allows the customer to take advantage of free cooling, hence removing the need to run a compressor. It is only during the days that exceed the pre-set temperature that Micron 21 will consume compressor energy.

Working within an existing footprint has meant making the most of the available floor space. Vertiv's Liebert® XDV indoor cooling system was selected due to its easy fit on the top of

the racks. The design draws the hot air from the hot aisle and discharges cool air down into the cold aisle where the electronic equipment air inlets are located.

Meanwhile, the backup system uses an in-row air-cooled DX solution, the Liebert® CRV. This is units are designed to stand between the racks and blow cold air through the baffles out to the front of the racks, while drawing hot air into the back of the racks. The heat is then exchanged and removed via the roof top condensing units.



The Liebert® CRV, PEX XDV and XDP cooling systems are all integrated with the Liebert® iCOM technology. This controls the variable capacity to ensure Micron21 is not running more power than need and only provides as much cooling as is required. This in conjunction with Liebert® EC fans that provide variable capacity such as the right amount of airflow for the IT load, which varies as the facility is growing. This is an ideal solution for a new build that is starting off on day one with a small load, however with a view to future expansion to reach full capacity. The Vertiv solution was designed to allow the hardware to grow with the data centre's immediate needs and allows a growth contingency into the future.



Liebert iCOM controls enabled Micron21 to see in real time the cooling capacity via a dedicated monitoring network. The system combination offers Micron21 complete redundancy, giving them the ability to switch between a completely closed chilled water system to an air and refrigerant cooled data centre. At the same time, the Liebert iCOM control, digital scroll technology and EC fans significantly contribute to achieving a low Power Usage Effectiveness (PUE).

“I wanted to turn our facility into the best facility in Australia, where nobody could ever question the robustness of our mission critical fault tolerant services. Instead of purchasing a new data centre, it made more sense due to our existing customers to just upgrade our existing facility,” said James.

Achieving 100 percent redundancy in the cooling and power space isn't a straight forward process when you are aiming for a Tier IV rating from the Uptime Institute. For instance, the chilled water system is designed with two independent loops that provide complete redundancy within the chilled water system. Working globally and locally with the Vertiv engineering teams was critical to achieving the Uptime Tier IV rating.

The Outcome

Micron21 was awarded Tier IV rating by the Uptime Institute in February 2017.

“Uptime Institute is pleased to award Micron21 with the Tier IV Fault Tolerant Certification of Design Documents, the essential first step towards constructing an Uptime Institute Tier IV Fault Tolerant Facility,” said John Duffin Managing Director, South Asia.

Micron21 praised Vertiv for its support toward the company's Tier IV certification. *“Selecting a supplier to help us in our road to Tier IV status is no easy job. Vertiv was among the few who are able to support us and they did a really fantastic job not only in providing us with the right power and cooling solutions but also with onsite project management and setup. Uptime Institute is very stringent when it comes to awarding Tier IV certification and it is very critical for us to have a partner who understands exactly what we need, not just putting together solutions, but providing the skill set and capability to facilitate are redundant and robust design needed for an Uptime Institute Tier IV data centre,”* added James.



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“Our project scope included a total engineered solution that addressed Micron21 demands from day 1. Collaborating with the Vertiv global team allowed us to best understand what Micron21 needed and provided them with the perfect solution to achieve the Uptime Institute Tier IV rating,” said Tony Gaunt, Senior Director for Colocation and Cloud, Vertiv.