



Canovate's cold aisle containment system with inrow cooling units was the most optimum and energy efficient solution for Qassim university



Canovate has been selected by the Qassim University of Saudi Arabia as the solution provider for their new state of art datacenter after a long investigation to find the right solution suitable to their demanding requirements.

Qassim University is a public university in Buraydah in the Al-Qassim Province of Saudi Arabia. It was established in 2004 jointly between King Saud University and Imam Muhammad ibn Saud Islamic University,

each of which used it as its Qassim campus. The main campus of Qassim University covers about eight square kilometers serving more than 40.000 students.

Qassim University wanted to increase its IT infrastructure capacity by the directives and support of Ministry of Education to cope up with ever increasing data processing requirements.

In order to achieve these goals Qassim University has decided to invest in a brand new datacenter with latest technology. They wanted their datacenter with highest capacity per rack and smallest footprint as possible since they have a limited datacenter space.

Their main criteria for the new datacenter were high cooling capacity, power efficiency and Tier III compatibility.

Canovate teamed up with our local datacenter system integrator partner BTC, which has more than 30 years installation experience in KSA. Together the two companies faced the challenge of designing and constructing data centers in a challenging environment with extreme temperatures. The team approached the project using an open architecture design to create a layout that would support Cold Aisle Containment with inrow cooling systems while saving space.



Maximum cooling capacity with energy efficient inrow cooling units

Once we determined that the infrastructure would fit into the area provided, a combination of cold aisle containment and DX based inrow cooling system has been chosen as the best solution to provide high capacity and energy efficient cooling.

Cold aisle containment has been designed to accommodate 2 rows of 12 pieces 42U 800x1200 Server racks (total 24 racks) and 10 pieces of 28 KW DX type inrow cooling units to ensure best cooling efficiency. By deploying cold aisle containment system complete separation of cold and hot air is ensured. Therefore uneven distribution of cold air and possible hot spots are eliminated.

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www.canovate.com

Canovate Istanbul
Eksioglu Mah. Atabey Cad.
No:12 Cekmekoy,
Istanbul, TR 34794
T: +90 (216) 484 22 22
F: +90 (216) 429 02 02

Canovate UAE
Saif Zone Q4-272
P.O BOX: 121650
Sharjah, Dubai
T: +971 6 5528523
F: +971 6 5528522

Canovate America
4210 L.B. McLeod Rd
Suite 111-113
Orlando, FL 32811
T: +1 407-286-0178
F: +1 407-914-2845

Canovate Hellas I.K.E
VAT: 800886889
Adress: Argiri G.10
Likovrisi, Athens 14123
Greece
T: +30 6944 571000

Inrow DX cooling system was chosen as preferred cooling system to provide energy efficient and reliable cooling. N+1 redundancy is ensured by adding an extra inrow cooling unit in case one of the cooling unit fails. With this combination, we managed to achieve 10 KW cooling capacity /rack, which allows to install two big capacity Blade Servers in a single rack.

Inorax-Al Aluminum frame racks were installed inside the cold aisle containment. These patented racks are supported by a complete aluminum frame which can carry up to 2000 kg load. Thus it is a perfect rack for such a demanding high capacity datacenter with a robust and aesthetic design. Furthermore 1200 mm depth racks were used to accommodate new blade servers with high depth.



2N+1 redundancy is ensured by hot-swappable modular UPS system

4 pieces of 100KVA Modular UPS systems were installed on the site to ensure 2N+1 redundancy. Modular UPS system ensures highly efficient and uninterrupted power supply for this critical datacenter. Maintenance can be easily done via hot-swappable fans without stopping the UPS system in case of failure. Furthermore modular UPS systems ensure a long battery life time compared to conventional UPS systems.



Switched IP-PDU's ensure best power optimization and reporting

Each rack has two switched IP-PDU's (A and B feed), one of the them is sourced from the mains power and the other one from the generator so that power redundancy is obtained even on rack level. Canovate's switch IP-PDU's enabled the customer to monitor power consumption per outlet basis remotely and provided the ability to switch each outlet. Energy optimization of the datacenter was done based on the power consumption data of connected devices obtained via IP-PDU's.

All environmental conditions like temperature, humidity, airflow, smoke etc and all cooling, power, and fire suppression devices are monitored via Canovate DCIM (Datacenter Infrastructure Management) and EMS (Environmental Monitoring Systems) solutions. Therefore any problem inside the datacenter will be reported immediately to the datacenter manager via e-mail and GSM

message for immediate action and intervention.

Qassim University's new data center is now operating with complete hot and cold air isolation and zero hot spots in the most energy efficient way without any downtime. The Canovate products not only do exceed expectation functionally, but also they provide a clean, high-tech look.



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Canovate Istanbul
Eksioglu Mah. Atabey Cad.
No:12 Cekmekoy,
Istanbul, TR 34794
T: +90 (216) 484 22 22
F: +90 (216) 429 02 02

Canovate UAE
Saif Zone Q4-272
P.O BOX: 121650
Sharjah, Dubai
T: +971 6 5528523
F: +971 6 5528522

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Orlando, FL 32811
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Greece
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