



Canovate's modular cold aisle containment with inrow cooling system was the most flexible and energy efficient solution for Ministry of Haj's new datacenter

Canovate has been selected by the Ministry of Haj in Kingdom of Saudi Arabia as the solution provider for their new state of art datacenters after a long investigation to find the right solution suitable to their demanding requirements.

The Ministry of Haj carries out its duties in coordination with the government and local authorities to facilitate observance of pilgrimage, control and regulate all services related to Haj and Umra by using state of art technology and increasing the effectiveness and performance of their IT infrastructure to achieve best service to visitors up to 6.5 million per year.

Haj is the biggest gathering in the world in a short time frame

In order to achieve these goals the minister of Haj has decided to invest in new datacenters. Following tasks will carried out by this new planned datacenters.



1- The establishment of the electronic control center and system at the Ministry of Haj and Umra; so as to link the different Haj and Umra pilgrims' services centers with decision makers; to enhance cooperation with the Haj and Umra system agencies; and to make the control panel available to the different governmental agencies.

2- The launch of the Haj pilgrims' e-bracelet program, and implementing it this Haj season for the first time; so as to help the pilgrims; to provide with the adequate support; and to make the e-bracelet information and data available to the governmental agencies of the Haj and Umra

3- Launching the Haj pilgrims' e-portal; so as to protect the pilgrims' rights; to quicken the mechanism of obtaining Haj visas electronically; to create equal opportunities for Haj to those willing to perform it; and to establish the transparency principle in the Haj and Umra



All these goals require an enormous data transaction and a high capacity datacenter. They wanted their datacenter with highest capacity per rack and smallest footprint as possible since they had a limited datacenter space. Their main criterias' for the new datacenter was high cooling capacity, power efficiency and Tier III compatibility.

Datacenter is designed according to Tier III requirements with latest technology

Canovate teamed up with our local datacenter system integrator & service partner Tunki Electronic & Computer, which has more than 20 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.



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

Cold aisle containment was designed to accommodate 2 rows of 10x 42 600x1000 Server racks (total 20 racks) and 14 pieces of 28 KW DX type inrow cooling units in a cold aisle containment to ensure best cooling efficiency. By deploying cold aisle containment system complete separation of cold and hot air was ensured. Therefore uneven distribution of cold air and possible hot spots was eliminated .

Maximum cooling performance with energy efficient inrow cooling system

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 18KW cooling capacity /rack, which allowed to install two big capacity Blade Servers in a single rack.

Inorax-AI Aluminum frame racks are 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. Each rack has two 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.

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 ad GSM message for immediate action and intervention.



Flame retardant yellow fiber duct system ensures professional cable management



Furthermore Canovate's fiber duct systems were installed on the top of the containment system to protect and guide all incoming&outgoing fiber cables in a professional way. The fiber ducts are made from halogen free UL94/VO plastic to provide flame retardancy and absolute protection of fiber cables against critical bending. We also deployed special cable management system integrated on top of the racks to guide the copper and fiber cables separately.

The ministry of Haj's 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. Not only do the Canovate products exceed expectation functionally, they provide also a clean, high-tech look. 24/7 days after sales support service is provided by our service partner Tunsı Electronic& Computer to ensure continuous and healthy operation of the datacenter.

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