GFS
Crane RMS
Enabling Internet of Machines

Edge Computing & Modular Data Centers

Modular Data Centers (MDCs) are becoming a strong option for deployment as Edge Data Centers given their attributes of standardized components within a converged infrastructure framework, plug and play and easy scalability as needs grow.

 Modular Data Centers were initially conceived in the early part of this century as a low capex, time-saving and flexible option to the traditional custom ground-up build of data center taking months of construction and electrical and mechanical fittings before becoming operational. After over a decade, and the rise of IoT, the value proposition of MDC has evolved to a rapid deployment of Edge Data Center.

What is a Modular Data Center?

- The first characteristic of MDC is Portability. From the MDC manufacturer to the customer site as well as between sites. If computing needs change from Location A to Location B, the MDC can be relocated and commissioned within hours.

- The second characteristic is Modularity. Built with high degree of standardized components for power, cooling, safety and access security, the MDC can be shipped as single rack, single row or multiple rows. Modules of racks and rows can be added as computing needs grow.

- Lastly, all the critical infrastructure components (power, cooling, safety, access security), come as a Converged Unit for a Rack or a Row of Racks, unlike the discrete elements of a traditional data center.

- Once shipped at customer site, it's virtually plug-and-play. All that the customer needs to add are the IT infrastructure within the available U-space of the Racks.

- So, what's missing? The monitoring piece of the converged infrastructure. Even in MDC, one needs to ensure that actual power load on rack is within rated capacity, the heat levels are within safety limits and there is appropriate load balancing within the redundant UPS units.

Sl. No.	Device Type	Monitoring Method (Protocol method)	Monitored Parameters
1	UPS	SNMP	UPS load, current, phase-wise voltage, real power (UPS load), frequency, internal core temperature, battery health
2	Rack ipdus with T & H sensors	SNMP	Rack load (kW) against allocated load, Energy Consumed over a time period (kWh)
3	Rack based Environment Module	SNMP	Temperature and humidity values within the Racks
4	Air Conditioning Units	SNMP	Cooling Parameters – Set points for temperature, humidity, Return Air and supply air temperature & humidity, etc.,
5	Fire Alarm and Access Control	SNMP	Fire alarm Status (Normal/Alarm) Access control Status (Door Open/Closed)

GFS Crane Rack Management System

GFS Crane Rack Management is a subset of GFS Crane DCIM, purpose-built for each vendor's MDC offering. It is shipped with device OIDs in the seed data base, making it 100% plug-and-play. The Rack Management System monitors and sends alerts for the critical infrastructure devices shipped with the MDC: UPS, Cooling Unit, iPDUs, temp/humidity sensors, fire alarm system, water leak detection probe, CCTV and Access Control System. Our MDC manufacturing partners include GFS Crane Rack Management as part of their converged infrastructure offering - installed, pre-configured and shipped from their factory.

Key Features of GFS Crane Rack Management:

- Shipped as an appliance. Licensed in options of 1, 2, 3 Racks & multiples of the same.
- Lightweight web-based DCIM for centralized monitoring of geographically distributed MDCs
- Besides SNMP support, provides option for monitoring devices over Modbus/TCP
- Pre-configured: Seed database includes relevant OIDs and Modbus register set
- Monitoring of iPDUs, Rack T/H sensors, UPS and Cooling system
- Rack reports with power consumption, Temperature and Humidity level
- Monitoring of Access control device & CCTV cameras
- Monitoring of WLD, smoke sensor system and Fire suppression system
- Option for monitoring IT Devices over SNMP and showing rack elevation
- Widget-based Dashboard and standardized reports

Benefits to MDC Customers

- Shortened commissioning time
- Automated Device monitoring and alarm management - enhanced uptime.
- Reduced Operational Costs
- Ready Dashboard with Rack's Key Parameter Indices.
- Web based application – Allows Customer to Remotely monitor distributed/ multiple Intelligent Racks

Modular Data Centers need a purpose-built, pre-configured and factory-installed Rack Management System so that it becomes plug-&-play at customer site

GreenField Software Private Limited
P-25 Transport Depot Road, Kolkata – 700088, India
Email: sales@greenfieldsoft.com
Tel: +91-33-2448-0307 | Fax: +91-33-2440-6073
www.greenfieldsoft.com