GFS Crane DCIM – Product Overview
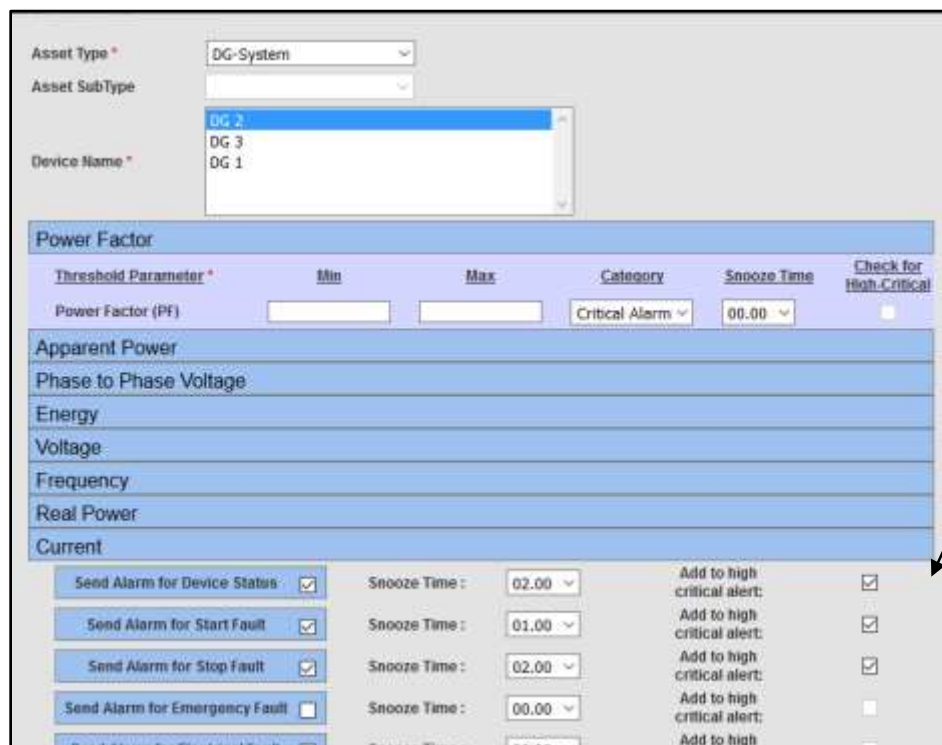
GFS Crane DCIM Philosophy

The foremost responsibility of a Data Center Manager is High Availability. To achieve this, the topology of the modern Data Center has been defined by extreme redundancies. This has made the Data Center capital-intensive, complex and costly to operate. Ironically, extreme redundancies multiply the vulnerable points, as some recent high profile Data Center failures have shown.

GreenField Software's GFS Crane® DCIM Software addresses this DC challenge: how to de-risk the Data Center while helping CFOs & CIOs control over-provisioning or wasteful capital expenditure and reduce operating costs.

De-Risking the Data Center

GFS Crane DCIM helps to overcome the three root causes of data center failures: human error, lack of integration between facility and IT systems/teams, and poor capacity planning.

1. Policy-driven framework that lists the conditions of device failures and what actions to be taken and by whom, besides sending alerts.
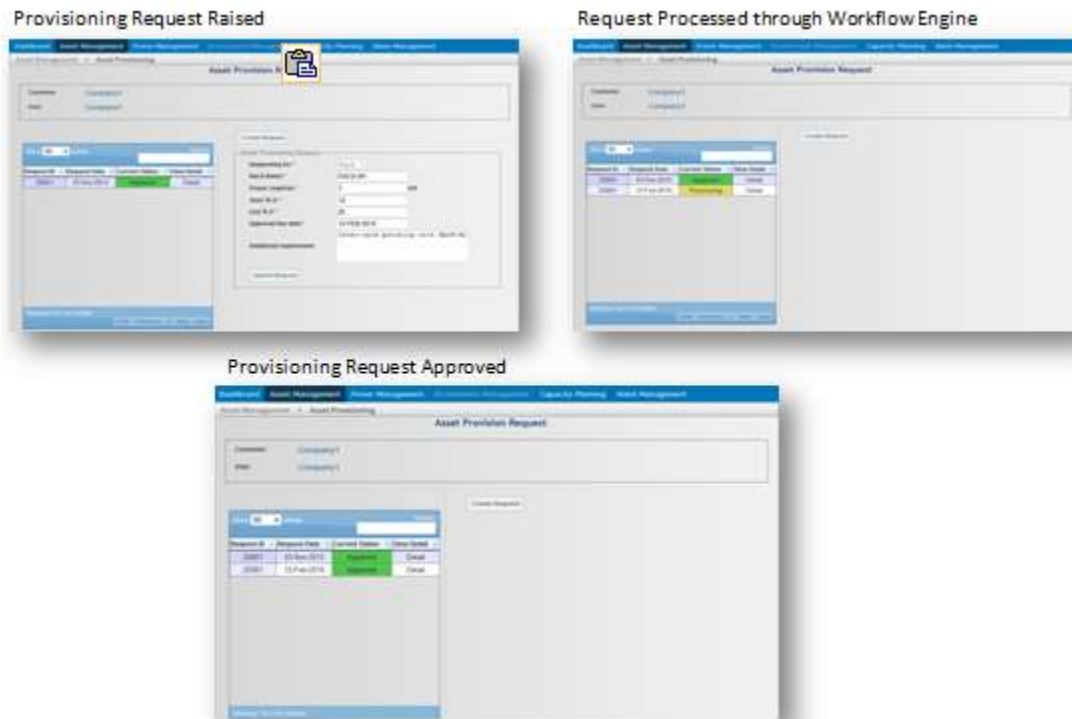

Creating rules of escalation and email alerts for various devices based on alarm severity and

2. Workflow-based approval systems prevent ad hoc actions in Move-Add-Change operations.

Provisioning Request Raised

Request Processed through Workflow Engine

Provisioning Request Approved

3. An up-to-date Power Chain. When a scheduled activity on any part of the Chain is being undertaken, all downstream owners are notified for making contingency plans.

Power Chain
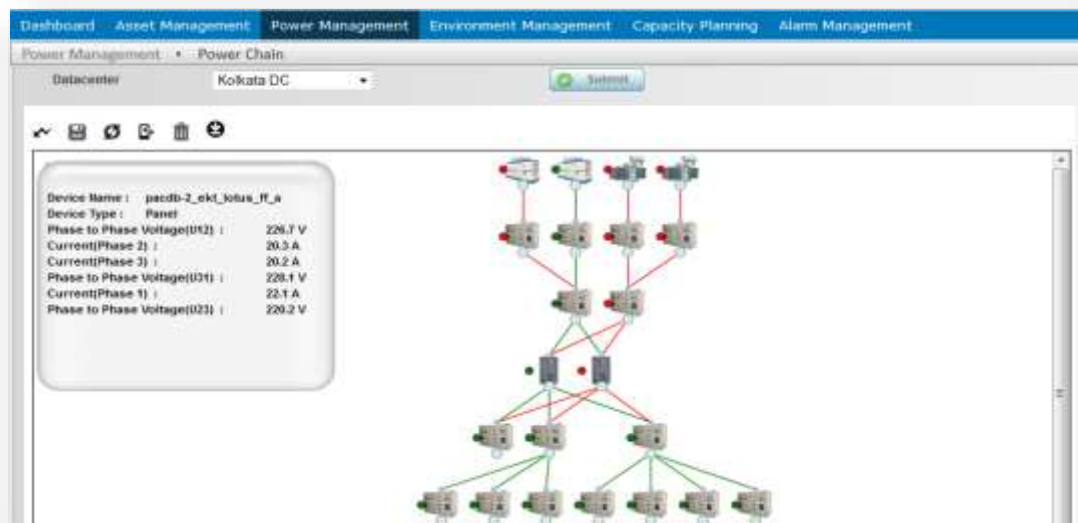
4. Visualization of the data center with danger-level hot spots alerts the Facilities team to take immediate corrective actions.

Temperature & Humidity Profiling
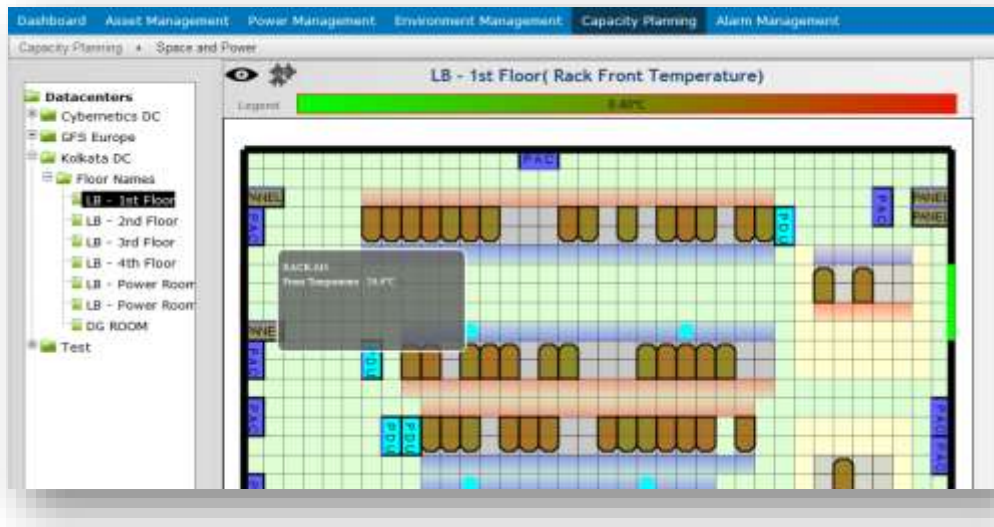
5. Configurable to broadcast alerts to System, Network and Application administrators in case of emergency situations in critical infrastructure so that immediate remedial actions can be taken.
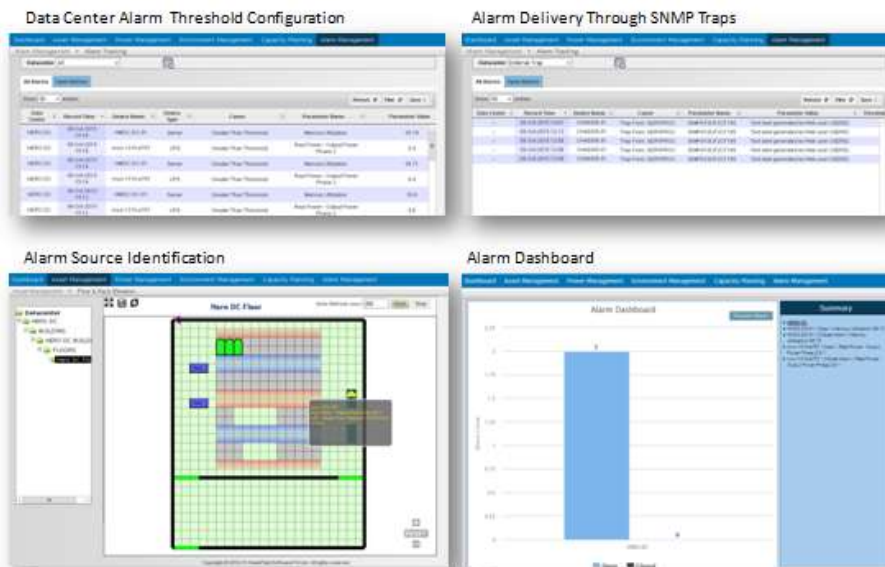
6. Capacity Planning for future growth in IT infrastructure, in conjunction with Power Chain modeling, helps to identify single points of failure.

Controlling Wasteful Capital Expenditure

While building redundancies is absolutely necessary for maintaining high availability, the trade-offs are lower asset utilization and higher capital expenditure. The goal therefore is to avoid over-provisioning and control wasteful capital expenditure. GFS Crane DCIM enables this through:

1. Visualization, reports and analytics of all IT and facilities infrastructure and their utilization
2. Full asset life-cycle management. This enables planned growth of IT infrastructure using up-to-date utilization data and an OEM library, called GFS Manufacturer Repository
3. What-if analysis (or capacity forecasting) of Power, Space and Cooling to accommodate the growth of IT infrastructure, thereby avoiding over-provisioning, and savings on capital investments or deferring investments to later date.

Visualization, reports & analytics
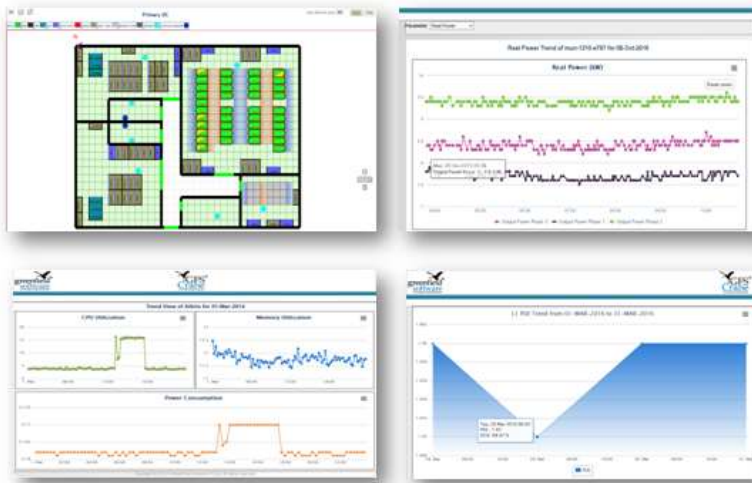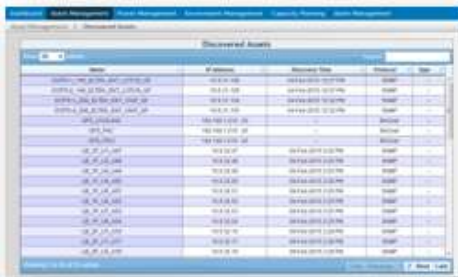
GFS Crane DCIM's asset management, capacity management, and reporting convert into savings as they assist utilizing existing infrastructure to their fullest extent and provide data to plan for future investments.

Reducing Operating Costs

The quickest payback for GFS Crane DCIM comes from improved productivity and reducing power costs.

1. Putting the Data Center on an auto-pilot mode through live monitoring
2. Enterprise asset management functionality: auto-discovery, completing asset database through built-in OEM library, getting rid of multiple, outdated and at most times inconsistent spreadsheets

Auto-discovery of Facility & IT Assets

Built-in OEM Library

Asset Location Tracking

Preventive Maintenance of critical assets

3. Workflow-based Asset Move-Add-Change
4. Visual live alerts in the power chain, besides multi-mode notifications
5. Live monitoring and reporting on power and energy
6. Calculating multi-level and period-based average PUE with analytics to show how power consumption can be reduced
7. Live temperature profiling helps to determine hot and cold spots: cooling optimization could lead to reduced power costs
8. Live Status of Racks on 3D Layout provides granular view for further optimization
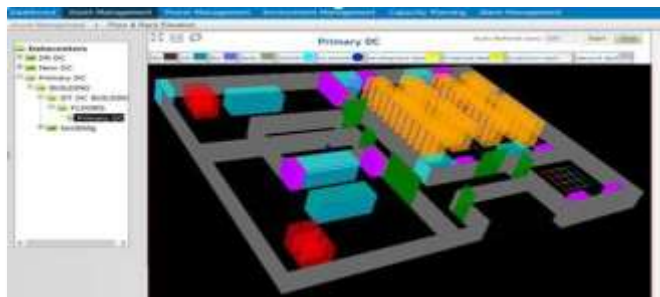
Operations, Planning & Management

GFS Crane DCIM is an operations planning and management software for the Data Center.

Most data center operation problems happen due to the absence of a comprehensive, up-to-date and accurate asset database. A Move-Add-Change operation goes untracked in a spreadsheet. GFS Crane automates this function with workflow-based approvals. The asset database itself is created through a discovery process and populating static attributes from an in-built OEM library, called GFS Manufacturer Repository.

6

Beyond Data Center Operations, GFS Crane also helps in Planning and Management. GFS Crane helps identify the best-fit racks to place a new server, based on available space and remaining allocated power. It provides alerts when a Preventive Maintenance date is due. So, downtime can be properly planned especially when there's possibility of downstream cascading impact. GFS Crane Power Chain provides ready visualization to help avoid an adverse situation.

Finally, GFS Crane provides Data Center metrics. A customizable widget-based dashboard can be configured to display metrics like rack space utilization, PUE and rack, row & room temperature for the month as against the SLA terms.

Summary

In a world of always-on service delivery, data center failures are unthinkable. The financial implication and loss of reputation alone make it imperative that we put in place systems that prevent such failures. At the same time, CFOs and CIOs are grappling with increasing capital expenditures and operating costs involved in running a High Availability Data Center. GFS Crane DCIM delivers both on the High Availability promise as well enabling a leaner, greener and operationally more efficient data center. GFS Crane DCIM's multi-protocol support, flexible layered architecture and simplicity makes for rapid deployments, giving a payback period of less than two years.

Annexure: What GFS Crane DCIM Delivers:

DCIM Functions Device Monitoring	Power Management	Environment Management	Asset Management	Capacity Planning	Alarm Management
Facility Device Monitoring (BACnet/IP, Modbus/TCP, SNMP)	1. Power Chain 2. Power Use Reports of: • Transformers* • Feeder Panels • UPS* • Row & Rack PDUs* • DG System 3. Trend Analysis 4. PUE/DCiE calculations (*Power Meters required)	Reports on: 1. Room/Row/ Temp ** 2. Humidity ** 3. Air pressure ** 4. Air quality ** 5. Water leak ** 6. Smoke ** ** Sensors required	1. OEM library for Facility Devices 2. Asset Relationship Mapping of: • Transformers • DG systems • UPS • PDU • PAC/HVAC • Racks • Meters/sensors/ & probes 3. PM Schedules 4. Uptime Reports	1. 2D & 3D DC Layouts 2. What-if Planning & Forecasting • Power • Cooling • Space 3. *Optional: WF-based Provisioning*	1. Power parameter alarms 2. Environmental parameter alarms 3. Facility device health alarms 4. Smoke alarms 5. Access control alarms 6. PUE Alarms 7. Time-based Breach reports 8. Other alarms (WLD, fire)
DCIM Policies					
IT Device Monitoring (SNMP, WMI)	1. Power Use Reports of: • Servers • Racks (with iPDUs) 2. Trend Analysis 3. IT Power Costs & Billing 4. PUE/DCiE calculations	Reports & Trend analysis of 1. Rack temp & humidity** 2. Differential Pressure** 3. Server Carbon Emissions ** Sensors required	1. OEM library for IT Devices 2. Relationship mapping: IT Infra with applications & business users 3. Reports on: • Server utilization • Aging Analysis • Retirement candidates	1. 2D & 3D DC Layouts 2. What-if analysis for optimal IT placement on racks 3. Reports on stranded capacity	Threshold breach reports: 1. Server power consumption 2. Server CPU, memory utilization

GreenField Software Private Limited is an Indian venture pioneering smart infrastructure management solutions based on Industrial IoT architecture. The product portfolio includes GFS Crane® DCIM, a complete Data Center Operations, Planning & Management software, with installations in colocation as well as enterprise data centers of Financial Services, Telecom, Power Utilities, Media, Oil & Gas, Automotive, Government, Higher Education and Technology.

For more details:

Email: sales@greenfieldsoft.com

Visit: www.greenfieldsoft.com