Unified DCIM: Achieving Data Centre Efficiency Beyond IT
Today’s data centers are not just a factory that houses storage systems and stores bytes; they enable to gain competitive advantage and are intertwined to corporate success. Emergence of new deployment models such as cloud, hosting, colocation and virtualization in recent years have placed additional pressures on infrastructure management. The current explosion in cloud computing is driving the demand for data centers, and is expected to grow at a CAGR of 10%. As growing fleet of data centers witness expansion in terms of capacity, it is also faced with spiraling operating costs.

As the performance of data centers are linked to business success, data center managers have been challenged to deliver availability, capacity, and efficiency in the face of escalating demands. The growing facilities infrastructure not only amplifies costs and carbon footprint but also puts business under risk.

Also the threatening profitability of data centers, regulatory requirements and the need to deliver business demands of today’s data center has derived the importance of real-time holistic management capabilities and visibility of IT and facilities infrastructures. Effective data center infrastructure management strategy can propel the efficiency, utilization, and availability of data center assets and services.

**Bridging DCIM Gap**

DCIM encompasses IT infrastructure layer (servers, network switches, routers, LAN, WAN and storage arrays) and data center facilities layer that enables IT realm to function (power, temperature, humidity, inventory, battery, security). Monitoring and managing IT assets doesn’t tackle vital issues of operational performances like cooling utilization, battery health, PUE (power usage effectiveness) and security. Further, IT management solutions fail to provide alarm management capabilities and central visibility of asset utilization.

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Unified DCIM is a new perspective to manage and bridge the critical infrastructure gap through:

- **Proactive – approach** providing real-time information to swiftly react to potential issues
- **Holistic management** of IT and facilities infrastructure
- **Remote Monitoring** eliminates failures, prevents data loss and increases uptime
- **Remote diagnostics and troubleshooting** enables data center personnel to quickly respond and control changes in infrastructure facilities
- **Resource Utilization** – resources are optimized in line with business needs
- **Analytics** provides actionable insight on the passive assets utilization

**Streamline and Simplify through an Integrated DCIM**

Growing floor space requires more IT devices, more power and immeasurable flow of costs. Although a DCIM solution simplifies the management of data centers, its occupied value can be realized only when an integrated DCIM is in place. Organizations have to liberate from the silos that exists within the data center – involving performance management, asset utilization, reporting and analytics. Data centers can leverage infrastructure management by monitoring and controlling tens of thousands of heterogeneous passive assets stretched across multiple locations and geographies.
Comprehensive visibility and management of data center facilities is attained by integrating various sensors and system feeds to collect data from the assets which are fed into process to derive information and then the information is presented to data center managers in the form of dashboard.

- **Power Management** notifies critical electrical network problems and monitors energy consumption
- **Asset Management** maximizes returns on investment by proactively managing assets to extend their life
- **Alarm management** detects fluid leaks, smoke and triggers alarm
- **Security** provides identification and tracking of human activity in and around the data center
- **Sensors** placed within the physical space enable to collect, orchestrate and evaluate data across the data center. For instance, temperature sensor prevents overheating and ensures optimal temperature is maintained and also reduces cooling costs. Vibration sensor prevents malicious or accidental tampering of racks.

**WebNMS M2M as DCIM**

To address the DCIM gap and operational challenges, WebNMS M2M DCIM presents a web-based centralized solution for comprehensive management of entire data center infrastructure, including IT and non-IT assets. WebNMS M2M DCIM is a convergence of WebNMS M2M framework and ManageEngine Integrated IT management solution.
WebNMS M2M architecture comprises of RTU as hardware and central monitoring software. The RTU (Remote Terminal Unit) collects data from devices and communicates to central management system via Ethernet/GPRS/Satellite.

WebNMS can monitor tens of thousands of devices located in remote sites, and can serve dozens of NMS users remote sites managed from central Network Operations Centre (NOC). It enables operators to understand, anticipate, and respond to real-time information from the remote sites thus making more-efficient, cost-effective and greener environments.

Figure: Unified DCIM

The unified dashboard provides accurate real-time visibility into facilities infrastructure from a single console. For instance, the dashboard below shows power consumption trends, sensor status, temperature and recent alarms:
Managing the critical infrastructure gaps ensures data center managers to focus on strategic IT issues. WebNMS M2M DCIM offers centralized management of infrastructure facilities that enables to cut data center costs and complexity and increases capacity and uptime.

For more information, please visit www.webnms.com/m2m

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