Data Center Infrastructure Management (DCIM) **Demystified**

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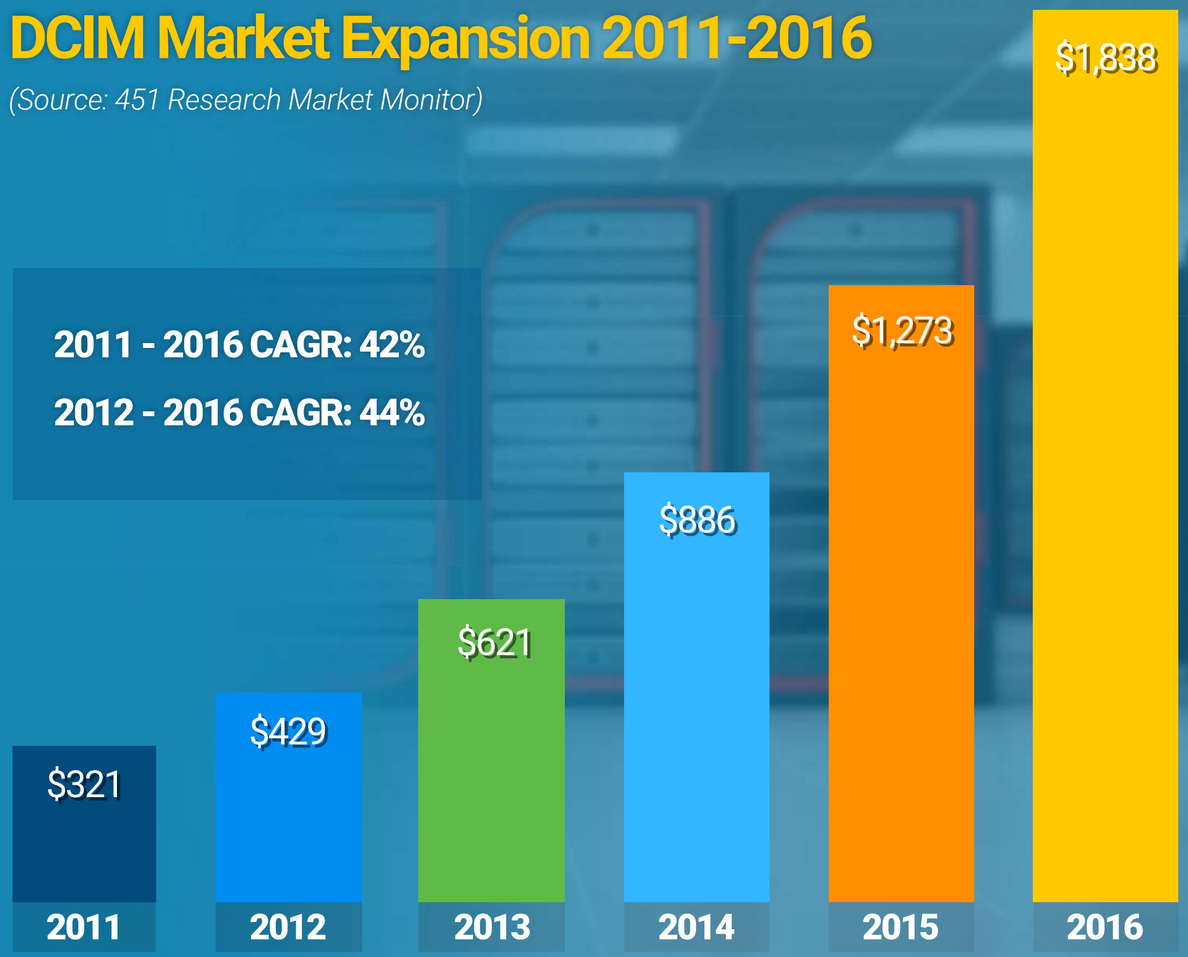
Data Center Infrastructure Management (DCIM) Demystified

Data Center Infrastructure Management (DCIM) software is quickly becoming the core engine of data center operations. Only five years ago, manual spreadsheets, sometimes supplemented with Visio diagrams, were accepted as the default tools for data center management. However, the arrival of powerful, yet easy-to-use DCIM solutions has resulted in a 40% CAGR growth in DCIM adoption (sales) with annual revenue now close to half a billion dollars.

Since the IT function is so vital to the success of any modern organization, improving the productivity, efficiency, and reliability of data center operations delivers an immediate competitive advantage to DCIM adopters. This eBook will offer some facts about why this is so and, if not already the case, why DCIM is clearly in your future.

DCIM Market Expansion 2011-2016

(Source: 451 Research Market Monitor)



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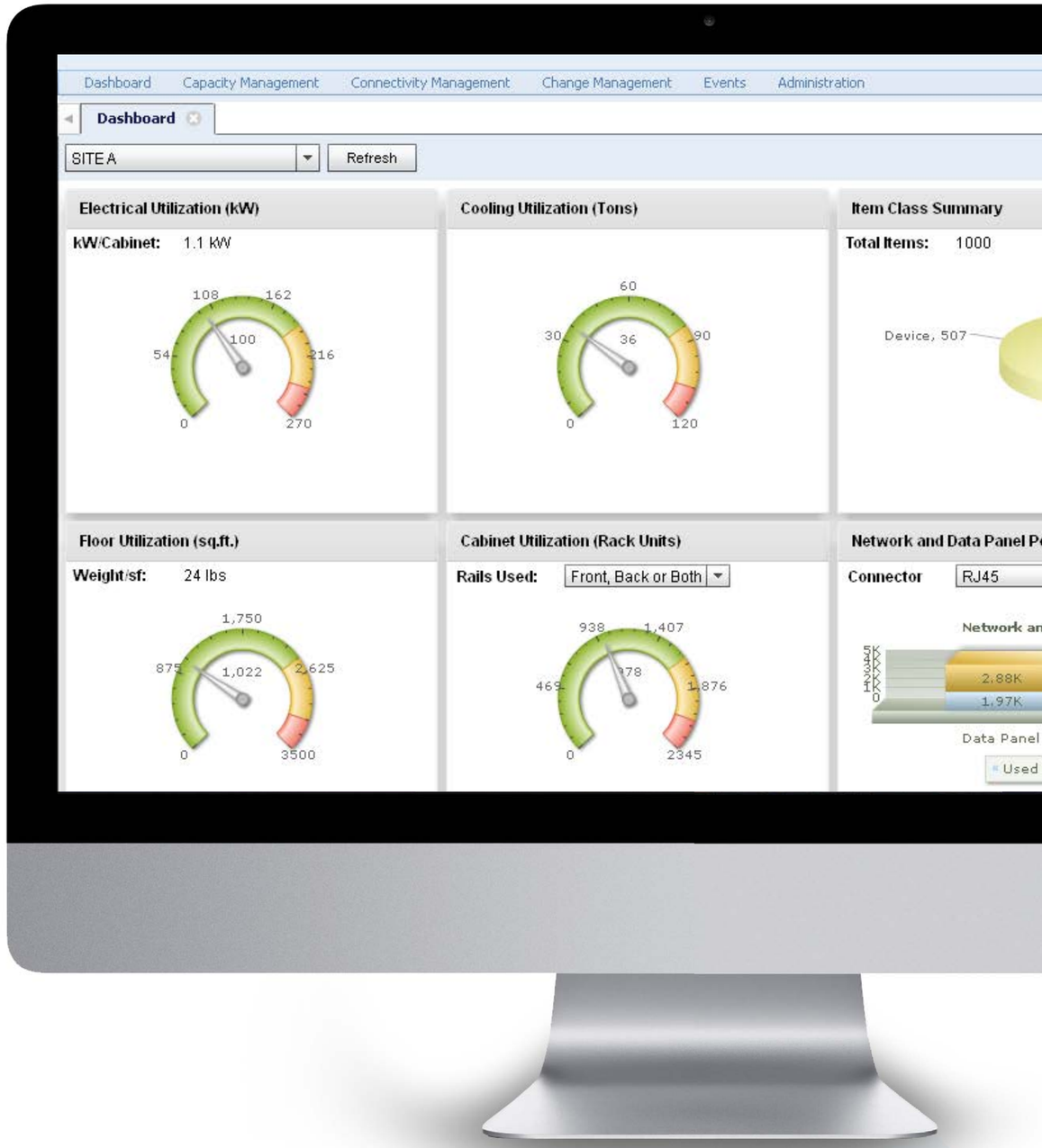
What Is DCIM?

The most basic definition is offered by 451 Group: “A data center infrastructure management (DCIM) system collects and manages information about a data center’s assets, resource use and operational status. This information is then distributed, integrated, analyzed and applied in ways that help managers meet business and service-oriented goals and optimize their data center’s performance.”

DCIM is a new class of software for a data center that:

- Enables data center operators to efficiently run data centers.
- Replaces Excel, Visio, and homegrown databases.
- Bridges information across organizational domains—Data Center Operations, Facilities, and IT—to maximize utilization of the data center.
- Increases data center efficiency, capacity utilization, and operations workflow to save time and money.



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Typical Components of DCIM Systems

A DCIM solution provides accurate and meaningful information about your data center's assets, resources used, and operational statuses–from the lowest level in the power chain to the highest level–in an integrated fashion.

A good DCIM architecture has the flexibility to adjust to user needs, makes it easy for the users to do their jobs, and has the right components necessary to solve real-world data center issues. A comprehensive DCIM solution should provide:

Enterprise-Class Monitoring

Monitoring for data collection, thresholds, and alerts to accommodate tens of thousands of nodes in the data center white space. This includes Intelligent Rack PDUs, Floor PDUs, Remote Power Panels (RPPs), Busways, UPS, CRACs, and environmental sensors.

Complete Inventory Information

Inventory information from racks, servers, storage, network connectivity, power chain, and applications.

Multiple Ways Visualize and Report on Data Center Assets

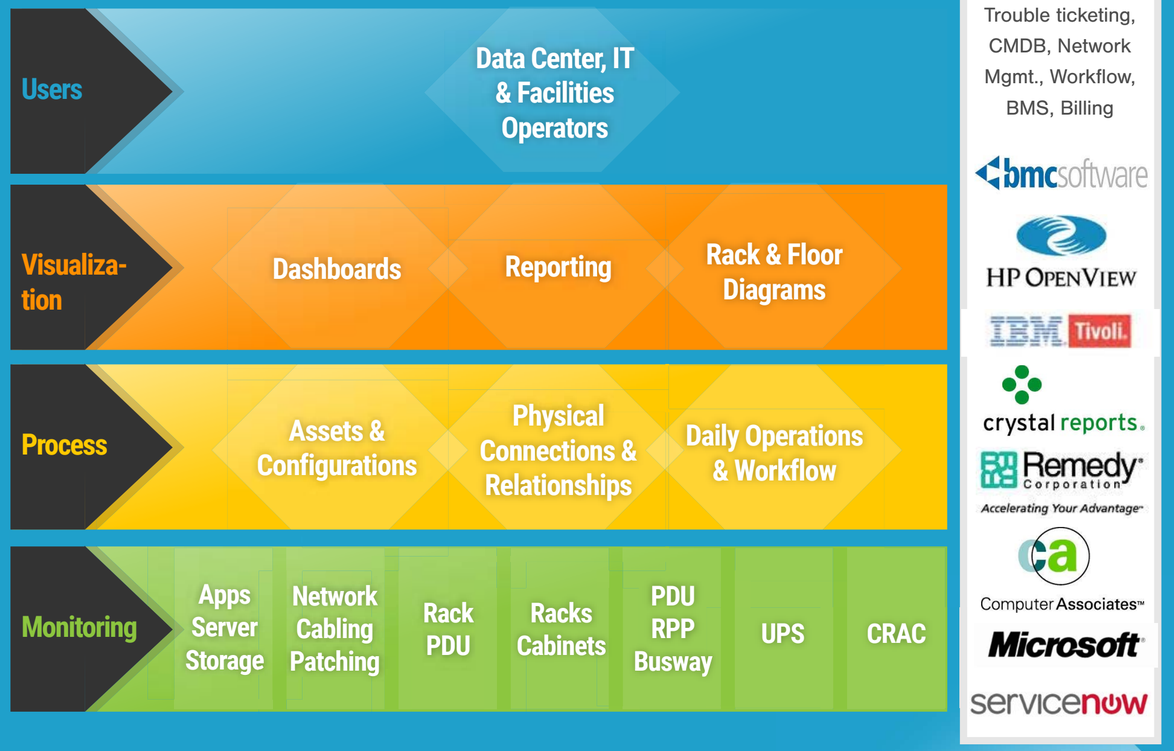
Information can be provided in terms of a dashboard, report, floor plan, or rack elevation.

Workflow Management

Processes and relationship mappings should help users to create workflows, quickly and easily understand the capacity at every point in the power chain, and indicate relationships between devices within the data center (what is connected to what and the impact when changes are to be made).

Open Integration Capabilities

Integration tools, such as APIs, should enable the integration between third-party CMDBs and ticketing systems.



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Common Data Center Management Problems

DCIM software solves problems related to gathering the information needed to enable data center managers to effectively and efficiently manage the data center infrastructure.

Specifically, DCIM enables data center managers need to ensure continuity of service, reduce capex/opex spend, and meet capacity needs.

To do all of these most efficiently, they need to answer these specific questions:

Asset MANAGEMENT

- What do I have?
- How is it configured and connected?
- Where is it located?
- Who owns it?
- What's the maintenance on it?

Change MANAGEMENT

- How do I manage moves, adds, deletes?
- What is the impact?
- Who does the work?
- When is the work done?
- How do I know the work is done correctly?

Capacity MANAGEMENT

- How much do I have (space, power, networking)?
- When do I run out?
- How do I manage the power chain?
- Where can I put stuff?
- How do I better utilize it?

Power MANAGEMENT

- How much is being consumed?
- How much is available?
- How do I ensure uptime and reliability?
- How can I accommodate high density?

Environmental MANAGEMENT

- How can I better manage hot spots?
- Am I over-cooling my data center?
- Can I use free cooling?
- How do I maintain a safe environment for IT equipment?

Energy MANAGEMENT

- How can I save energy?
- What is the cost of it?
- Who's using it?
- Who is meeting their saving goals?
- What costs can I bill back to other organizations or customers?

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DCIM Solutions: Before & After Scenarios

Without the information provided by DCIM, these questions become much more difficult to answer, and your data center becomes more difficult and costly to manage. However, with an intelligent DCIM solution, data center operators can better manage assets, change, and capacity, as well as monitor power, energy, and environmental indicators. The scenarios below illustrate how DCIM can help to address common data center management challenges.

	Before	After
Asset MANAGEMENT	Spreadsheets or homegrown tools Need to physically go on site to determine space availability and position Inaccurate and incomplete records	Instantaneous visual and textual information on the equipment in the data center reduces troubleshooting time View availability and reserve space without an on-site audit Centralized database enables accurate record keeping and processes
Capacity MANAGEMENT	Information contained within multiple systems with no way to integrate the data	Quickly model and allocate space for new servers Manage power and network connectivity in a single view or a few clicks
Change MANAGEMENT	Delays in processing work orders Inability to ensure processes are followed	Fully integrated workflow management, including automation of work orders and workflow activities, for process assurance, tracking, and auditing trails
Energy MANAGEMENT	Proprietary monitoring systems or sneakernet to the data center to manually take readings	Constant monitoring with alerts before circuits fail Locate stranded capacity to avoid costly build outs
Environmental MANAGEMENT	Wasted capacity due to inability to understand cooling requirements Overcooling Unknown hot spots	Identification of hot spots with thresholds and alerts Know whether you are overcooling and wasting energy
Power MANAGEMENT	Information contained within multiple systems with no way to integrate the data	Intelligent PUE analytics and reporting tools provide the capability for bill backs and management decision making

Your Benefits with DCIM

The benefits of a DCIM solution can be found in time, productivity, and cost savings:

Reduce wasted time and increase productivity: Employees no longer need to be on-site to identify what assets are in the data center and what space, power and cooling is available. Data center managers can have access to accurate data in real time at a click of a button.

Optimize energy consumption: Reduce waste and over-provisioning: Understanding asset details and their physical power and network connections enables highly accurate capacity planning, down to the single port or one-rack U level.

Reduce risk of downtime: Critical path capacity points are automatically and easily identified, reducing risks of failures.

Adapt to change: Reservations, moves, adds, and changes are accomplished with ease. Employee productivity and moral dramatically increases as processes and workflows are implemented to help plan investments and new data center capacity.

Confidence: A fully configured and instrumented DCIM will bring confidence in available data and capacity planning, in analytics and reports, and in strategy and budget planning.

In his report, "**Datacenter Infrastructure Management Software: Monitoring, Managing and Optimizing the Datacenter,**" Andy Lawrence summed up the impact of DCIM by saying, "We believe it is difficult to achieve the more advanced levels of datacenter maturity, or of datacenter effectiveness generally, without extensive use of DCIM software."

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Getting the Competitive Advantage with DCIM

- 84% of datacenters had issues with power, space and cooling capacity, assets, and uptime that negatively impacted business operations.

- Successful DCIM Implementations have the following characteristics: availability of IT resources, accurate capacity planning, decreased datacenter power usage, decreased overall operating expenses, increased coordination between facilities and IT, user adoption and follow through, and increased business agility. (IDC Datacenter Infrastructure Management 2012 survey)

- "Infrastructure management and its asset management capabilities are becoming key components in identifying energy use, productivity and possible sources of inefficiency and cost."

  Gartner Article Market Trends: Top-Down, Holistic Design Can Create Smart, Sustainable Data Centers

- 71% of respondents listed "improved capacity planning" as a top driver for buying DCIM.

  Uptime Institute's 2013 annual Data Center Survey

Sunbird and UF Health Shands Case Study

"Accurate asset records have given us a 50 percent gain in efficiency in terms of locating an asset's physical location within the data centers."

Joseph Keena, Manager of Data Center Operations

View Case Study

UFHealth
UNIVERSITY OF FLORIDA HEALTH

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Getting Started with DCIM

First, identify your top challenge. Then implement the solution that will provide the greatest improvement.

Identify Challenges	Implement Solutions
Gaining insight into what I have, including Floor Plan, Cabinet Elevation, and RU Capacity	Asset Management, Dashboards, and Reporting Tools
Planning and managing Power Chain, Power Capacity, Network Trace, Fiber/Copper Capacity, and Relationship Mapping	Capacity, Power, and Network Connectivity Management
Improving processes (Best practice Data Center management)	Change/Workflow Management (Ticketing)
Driving energy efficiencies and understanding the cost and carbon footprint	Power and Energy Management and Environment Monitoring
Ensuring components within the data center are up and running and being alerted to issues/problems before they happen	Power and Environmental Monitoring
Leveraging existing data, systems and processes	Integration through APIs, CMDB, Third-Party Ticketing and other standard protocols (ODBC, SNMP, Modbus)

Download the new ebook 10 Key Considerations for a Successful DCIM Deployment to learn more. eBook Download

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Ready to Get Started?

See how DCIM can help.

Use our ROI calculator to calculate your savings TODAY.

Access ROI Calculator

Take a Test Drive now to experience DCIM for yourself.

Test Drive DCIM Now

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