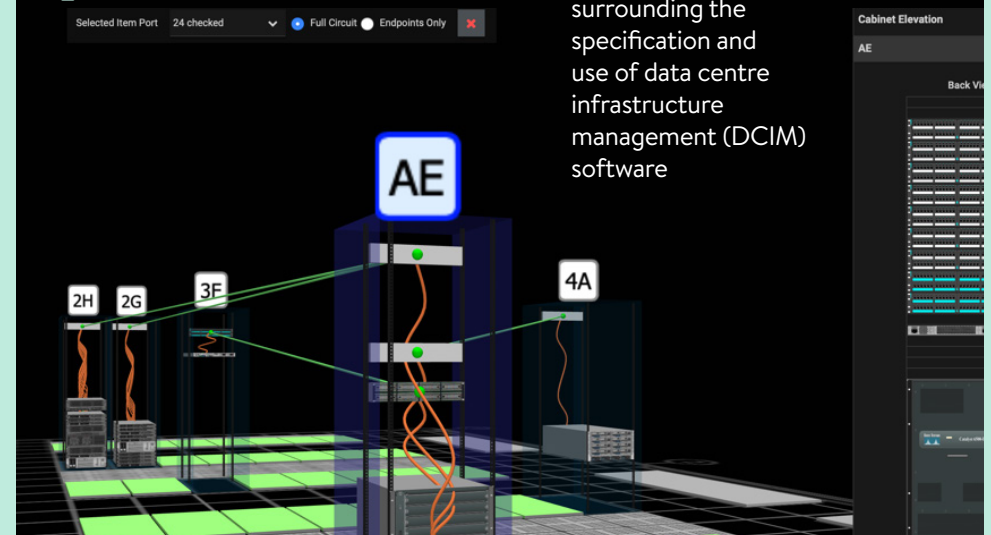# Knowledge is power

Herman Chan of Sunbird Software answers some of the common questions surrounding the specification and use of data centre infrastructure management (DCIM) software

Traditionally, DCIM software has been focused around simplifying data centre asset and space capacity management. While point tools like Excel spreadsheets and Visio diagrams were difficult to use, hard to maintain and error prone, data centre managers found success in leveraging DCIM software to maintain an accurate inventory of data centre assets in real-time, while boosting space capacity utilisation and reducing stranded capacity.

TRACK AND TRACE

As modern data centres have grown increasingly complex and higher in density, another use case is driving more and more data centre managers to deploy DCIM software – the need to track and manage port capacity and cabling. With an overwhelming number of IT assets and connections to manage, data centre managers need a tool that enables them to easily and accurately inventory and track individual physical port types residing on every device. This enables them to make the most informed decisions to improve planning for new equipment and services, plus aid infrastructure maintenance and troubleshooting.

Why is tracking port capacity and cabling so important? Consider the physical data centre infrastructure requirements of just one IT device when a decision is made to add new equipment. That single device – beyond needing space and power – spawns the need for a multitude of power and

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network ports and associated cables.

Now consider this very simple example across a data centre with 100 racks. Managing the roughly 3,000 servers in those racks is already enough to make a data centre manager's head spin, but there is also a complex system of 6,000 power supplies, 6,000 power cords, 7,200 rack PDU power ports, 10,000 in-rack patch ports, 10,000 far-end patch ports, 10,000 Ethernet ports, and 20,000 patch cords. To effectively manage those 100 cabinets, you actually have to manage over 70,000 individual components when you factor in all the ports and cables. And the complexity only increases with every additional data centre site that needs to be managed.

HELPING HAND

With such a complex physical infrastructure to manage, how are data centre managers expected to accurately track the usage, availability, capacity, cable routes and connectivity of every asset and every hop in the data centre? Fortunately, with a modern DCIM solution, you can easily answer questions that would have been nearly impossible to answer otherwise, such as:

If I need to perform maintenance on a UPS, what devices will be impacted and how do I notify the device owners?

With DCIM software you can conduct impact analysis from any point in a data

circuit or power circuit and easily see exactly which devices will be affected by maintenance. With a single click, you can send device owners an email notification regarding the status of their equipment.

If I need to replace a network line card, what devices are connected to it and will be impacted?

DCIM lets you visualise all the physical connections between ports in your data centre on your floor map in 2D, 3D or tabular formats, so you know exactly what is connected to what and how it will be impacted. Circuit trace wiring diagrams display each hop in a power circuit or data circuit from origin to termination with the details of each connection point, so you can identify single points of failure and decrease troubleshooting time.

If I need to install four new 2U servers requiring eight contiguous rack units of cabinet space, 1,600W, eight C13 power ports and 16 RJ-45 data ports, and the servers need to go to a far-end main distribution frame (MDF) cabinet, how do I know which cabinet can meet my requirements?

DCIM software

with intelligent capacity search allows you to easily set multiple requirements to find the ideal place to deploy new equipment. Simply select the device you are installing, or enter your space, power, and port capacity requirements, and within seconds the tool will provide you with the optimal cabinet to deploy your equipment.

What is the real-time available port and space capacity in all my cabinets across all my data centres?

DCIM software provides easy to understand 2D and 3D CAD-like floor map visualisations to correlate real-time data across the most common capacity restraints, such as port and space capacity, to clearly illustrate available capacity with red, yellow and green colour coding.

How can I plan, reserve, create work orders and update my resource inventory accurately and automatically?

DCIM software enables you to generate change requests, automate device moves and maintain a complete audit trail of requests and work orders for compliance.

DCIM software saves time and simplifies data sharing by eliminating manual data entry. Out of the box configuration management database (CMDB) connectors enable automatic sharing of data across disparate databases throughout the enterprise, enabling a single source of truth for all inventory and asset items.

How do I track parts like transceivers, hard drives and cards?

DCIM software with a parts management feature allows you to track the various subcomponents of your devices such as transceivers, power supplies, memory modules, network interface cards and cassettes to ensure that you don't run out of spares.

### How do I document a cabling installation?

DCIM software makes it easy to document structured and patch cabling installations by capturing cabling component information with any moves, adds or changes. Visual diagrams can be easily created to show which ports are in use on a device and which are available and remotely viewed without the need to make a trip to the data centre.

How do I know my connections are compatible?

A modern DCIM tool will automatically validate the compatibility of your connections with a built-in rules based engine that won't let you make connections without
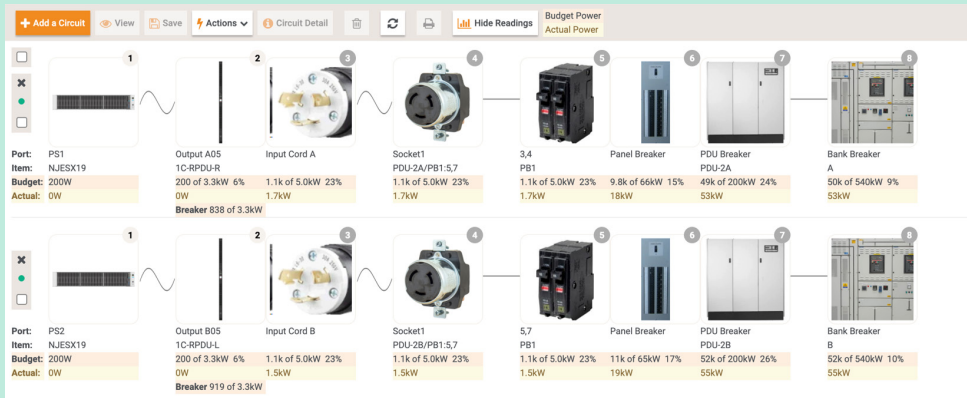
making sure that they will work. When looking for optimal locations to deploy new equipment, the software will not include cabinets without enough available and compatible ports.

How do I identify trends and simplify how I provision new equipment?

DCIM software with business intelligence dashboards and visual analytics lets you leverage reports to keep track of your data centre connectivity capacity in ways Excel and Visio can never provide. Get zero configuration dashboard widgets with key performance indicators (KPIs) like number of data and power circuits added over time, data and power port capacity trends and cabinets with free ports, to get actionable insights at your fingertips.

TOOL OF THE TRADE

Some DCIM software is just a tool for asset management with eye-pleasing 3D visuals, but the fact is that today's second generation DCIM tools offer a comprehensive data centre management solution focused entirely on solving real-world customer problems, inclusive of the need to track and manage port capacity and cabling. A complete DCIM solution will look beyond just the servers in the cabinet and allow you to track detailed

information on ports, cables, connectivity and relationship mapping to support agile remote management of everything in the white space. ∎

HERMAN CHAN
Herman Chan is president of Sunbird Software. Prior to this role he was the DCIM general manager and vice president of marketing at Raritan for over 15 years.