VISIONTEC
TOWARDS PERFECTION

COMPANY NAME

PRESENTER NAME
Job Title

Content :

COMMON MONITORING SYSTEM CHALLENGE

Common Monitoring System Challenge – Operating in Silo

Information management systems in DC commonly operate in silos, whereby features overlap but don't talk with each other, resulting in poor workflow practices.

DATA CENTER INFRASTRUCTURE MANAGEMENT (DCIM)

DCIM by Gartner

Critical Capabilities	CommScope : iTRACS DCIM	Cormant : Cormant-CS	Device42 : Decice42 Software	Vertiv : Trellis Platform	FNT : FNT Command	Nlyte Software : Nlyte DCIM	Optimum Path : Visual Data Center	Panduit : SmartZone Solutions	Schneider Electric : StruxureWare for Data Centers
Power Monitoring	4.3	3.8	3.7	4.2	4.1	3.6	4.2	3.7	4.0
Environmental Monitoring	4.3	4.2	4.2	4.0	4.3	4.2	4.3	4.0	4.3
Reporting / Visualization	4.7	3.7	3.8	4.2	4.4	4.0	4.1	4.1	4.6
Resource Management	4.5	3.9	3.2	3.9	3.7	4.0	3.9	4.3	4.5
Workflow Integration Management	4.5	3.8	2.3	3.9	4.4	4.1	4.7	4.7	3.9
Multitenancy	3.7	3.7	4.2	3.7	3.7	4.0	4.0	3.7	4.0
Summary Score	26.0	23.1	21.4	23.9	24.6	23.9	25.2	24.5	25.3
	1	8	9	6	4	6	3	5	2

Critical Capabilities for Data Center Infrastructure Management Tools. Gartner, Inc.

DCIM Market Changes

Andrew Donoghue | Sep 27, 2017

Critical Thinking, a weekly column on innovation in data center infrastructure design and management. More about the column and the author here.

Data center infrastructure management, or DCIM, software tools have been around since at least 2010, but it's still common to meet data center operators who completely dismiss the concept.

Related: Beyond Lights-Out: Future Data Centers Will Be Human-Free

A 2016 survey by Intel and Dell revealed that just over half of operators used DCIM at the time; but the actual number could be even lower. There is growth – the DCIM software market has more than 50 suppliers – but analysts recently revised the market's revenue forecasts down. Leading suppliers, such as CA Technologies (CA DCIM) and CommScope (iTracs) have exited the market, and numerous smaller vendors have gone out of business.

Source from Data Center Knowledge

Transition from Optimum Path Inc. to Eaton

Eaton has been working with Optimum Path Systems, Incorporated
as a partner since 2016
for Data Center Infrastructure Monitoring (DCIM).

Eaton acquired Optimum Path Systems, Incorporated in 2020.

Centralized DCIM : Providing a Big Picture

- PUE
- Asset Management
- Temperature & Humidity
- Power Consumption
- Water Leakage Detection
- Network Port Mapping
- CPU / RAM / HDD / Fan Speed Monitoring
- CO_2 Emission
- Alert & Notification

How DCIM **Benefits** the Corporate?

Uniting connected devices, data & insights efficiently solves critical management challenges.

Delivering new intelligent power management solutions	Creating engaging customer experiences	Enabling the digital factories of the future	Boosting internal productivity

DCIM enables you to generate analytics, uncover insights & inform real-time decision-making regarding information management systems.

VCOM
(Visual Capacity Optimization Manager)

Centralized DCIM

Facility health status:
- PUE
- UPS, PDU monitoring
- Alerts & Notifications
- Inventory
- Historical trend data

IT health status:
- CPU Utilization
- RAM performance
- HDD space
- Fan speed
- Temperature

Network monitoring status:
- Network device status
- Network connectivity status
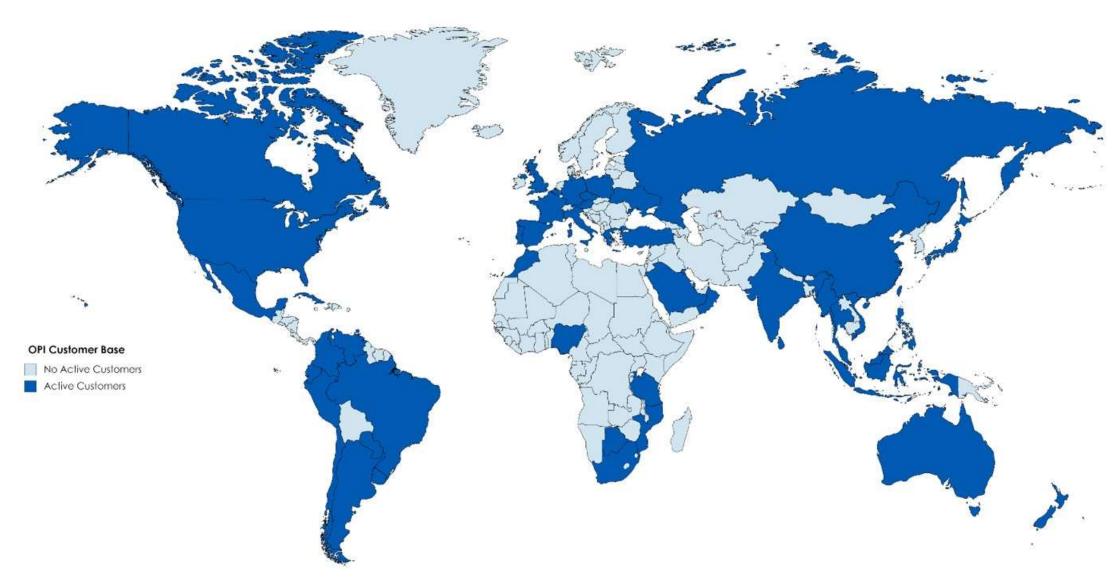- Network device port status
- Network Port Mapping

Facilities VLAN

Eaton SmartRack iCube

3rd party SmartCabinet

Eaton iCube Multirack Series

Worldwide Customer Base

Customers in 52+ countries

OPI Customer Base
- No Active Customers
- Active Customers

DCIM Core Features

Core Features

Power Monitoring
- Power Consumption
- PUE

Asset Management
- Mobile Audit
- Services
- Warranty

Environmental Monitoring
- Temperature & Humidity
- Leak Detection
- Fire Suppression

Capacity Planning
- What If Analysis
- Power Project Plan

Alarms & Notifications
- Alarm System
- Email Notification
- SMS Notification

Rack Building
- 2D / 3D / Import Rack Build

Device Controls
- Schedule Tool
- Outlet Control
- Rack Door

Port Mapping
- Cable Management
- Power / Network Path

Reports
- Customized Reports
- Scheduled Reports

DCIM Platform Components & Integration Extensions

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Platform Components

Visual Data Analytics

Mobile Security Manager

Mobile Asset Manager

Remote Data Gateway

Integration Extensions

Camera Videos

BMS Data Processing

Access Control

Active Directory

servicenow

ITSM

Our Proposed DCIM Key Strengths Comparison

No	Key Strengths	Our Proposed DCIM	Others
1.	Comprehensive 3D visualization of Data Center with a holistic global view	Yes	No or Limited
2.	PUE, Alerts, Warning on a Single Dashboard	Yes	No or Limited
3.	Innovative Interface	Yes, 3D	No or Limited
4.	Environmental Thermal Imaging	Yes	Separate module: "Thermal Management"
5.	Virtual Machine Monitoring and Control	Yes	Separate costing
6.	Mobile Device View	Yes	Separate module: "Mobile Suite"
7.	Global View of DC capacity	Yes	No or Limited
8.	Comprehensive Port Mapping	Yes	Upstream, Current, Downstream
9.	Energy Management	Yes	Separate module: "Energy Management"
10.	Allows installation on secured free OS CentOS, on Virtual Machine, no proprietary data collector required.	Yes	2 physical servers, requires proprietary data collectors

Business Values

Faster Time to Market

Capacity Management

Proper planning combined with what if analysis, organizations can determine if they have the capacity for the business demands as well as the fastest and most cost-effective way of delivering

Change Management

Improving processes and tracking changes reduces human error and can save time troubleshooting by being able to see the historical data of a device.

Increase Efficiency/Lower Cost

Power Management

Understand how their infrastructure consumes power and where they can save money by being more efficient.

Asset Management

Most companies manage their assets and inventory in spreadsheets that are prone to human error, eat up valuable time, and don't have the ability to track changes, connections, or history of the assets

Environmental Monitoring

Keeping IT and Facilities equipment cool while reducing the amount of cooling needed and drastically improve PUE.

Improve Uptime

IT/VM Management

The world is getting more virtualized every day. Understanding the utilization and performance metrics of virtual machines can allow you to quantify the impact of the virtual environment. Intelligent Automation to move and gracefully shut down and restore VMs in the event of Power Quality Issues

Predictive Analytics

Using Data Science and analytics in conjunction with monitoring, anticipate problems before they occur so that corrective action can before incidents occur
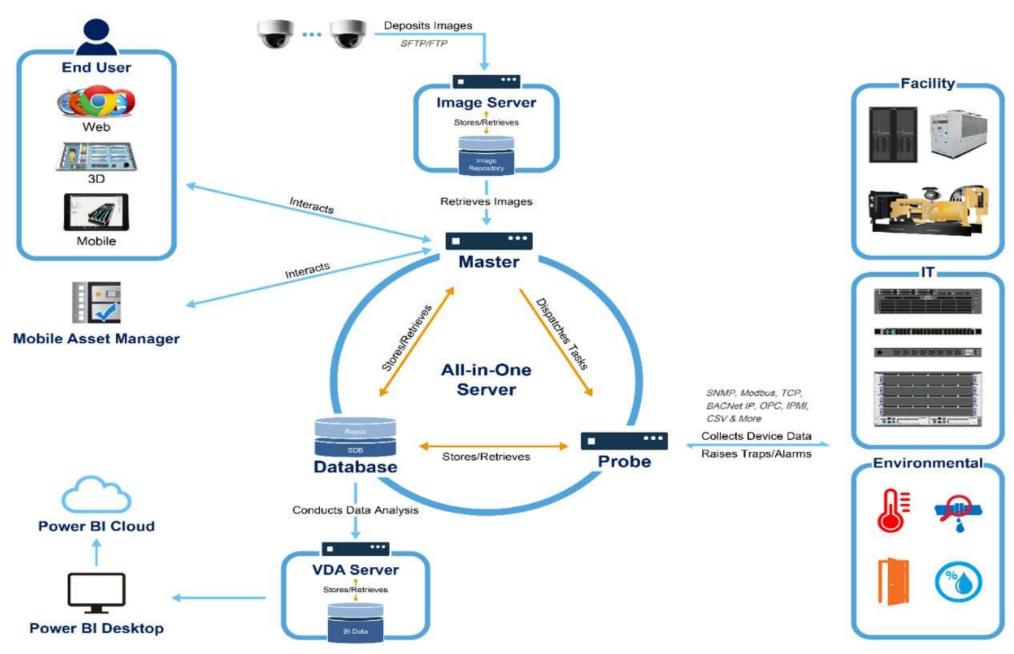
VCOM DCIM Architecture

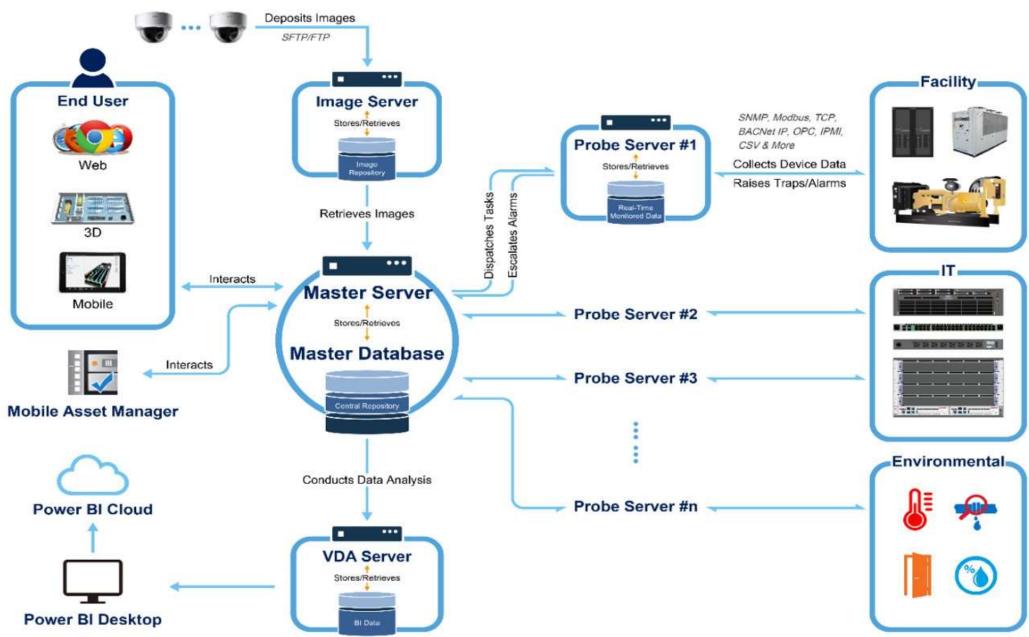# General Architecture

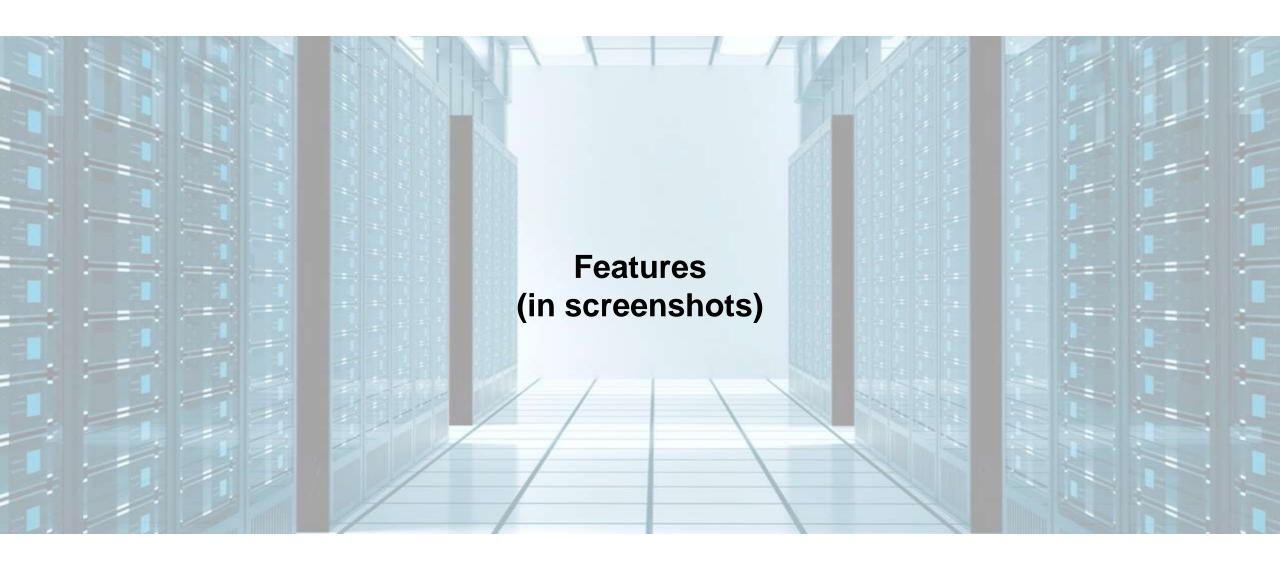# All-In-One Architecture

Distributed Architecture

Features
(in screenshots)

Global Map View

Data Center Overall Performance

Data Center **Overall Performance**

Item	Value	Item	Value
Current PUE	1.16	Total Floors	1
Power – IT Devices	421.06 kW	Total / Raised Floor Area	5,983.37 / 2,922.68 ft²
Total Power	487.76 kW	Provisioned / Sellable Raised Area	0.00 / 2,922.68 ft²
Power – Rated	690.00 kW	Common Raised Area	0.00 ft²
Power – Derated	570.00 kW	Cooling – Capacity Tons	240.00 Tons
Estimated Yearly Power Consumption	4,272,751.32 kWh	Cooling Utilization	57.79 %
Estimated Annual Cost	$427,275.13	Total / Count – Managed Racks	129 / 125
Estimated Yearly CO2 Emission	2,888.38 Tons	Total Devices / Monitored Devices	1,104 / 200

3D Rack View

Heat Mapping / Environmental Monitoring

Threshold Alert

Real-time Charts

IP Camera / CCTV Capture
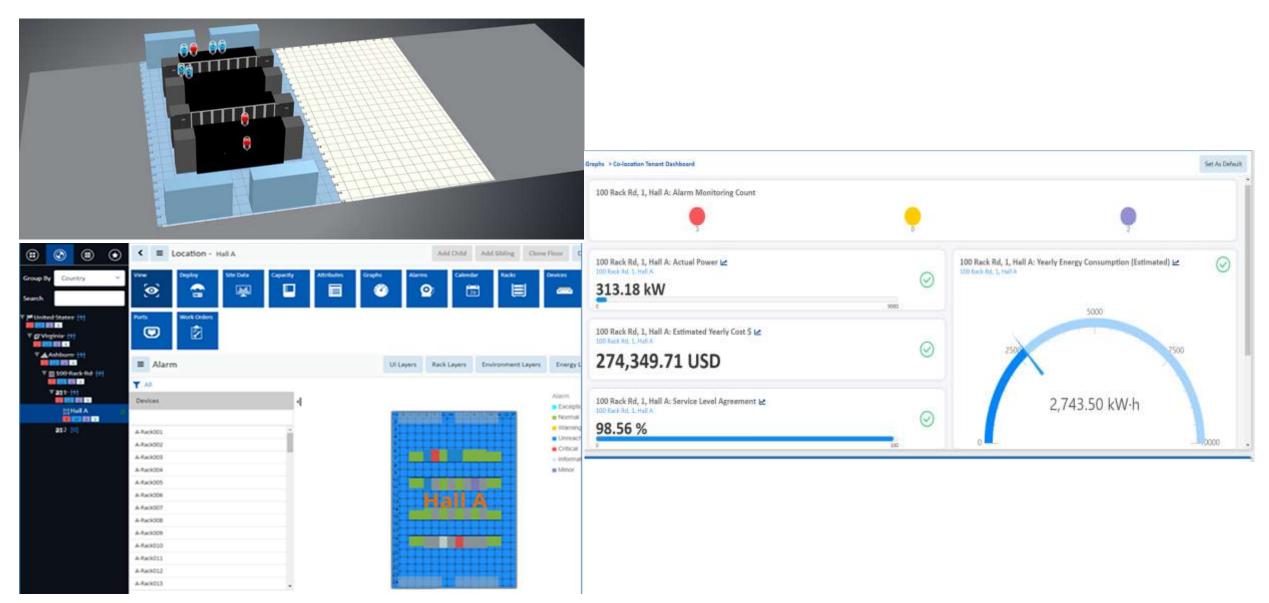
Multi-User Access Portal
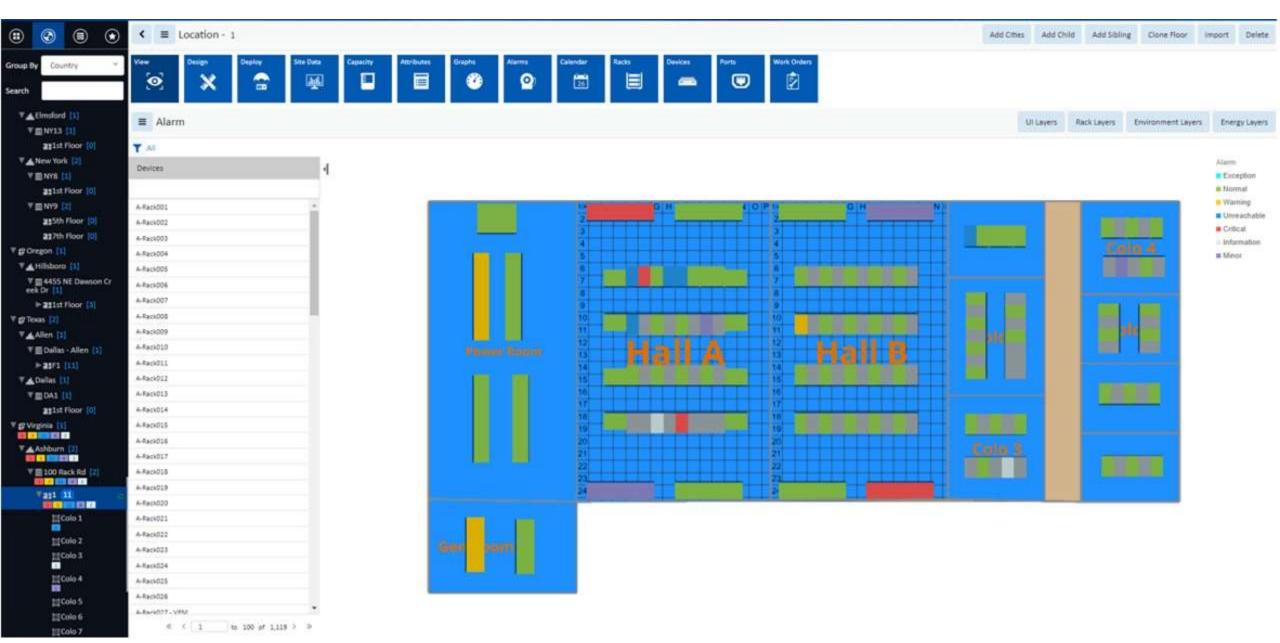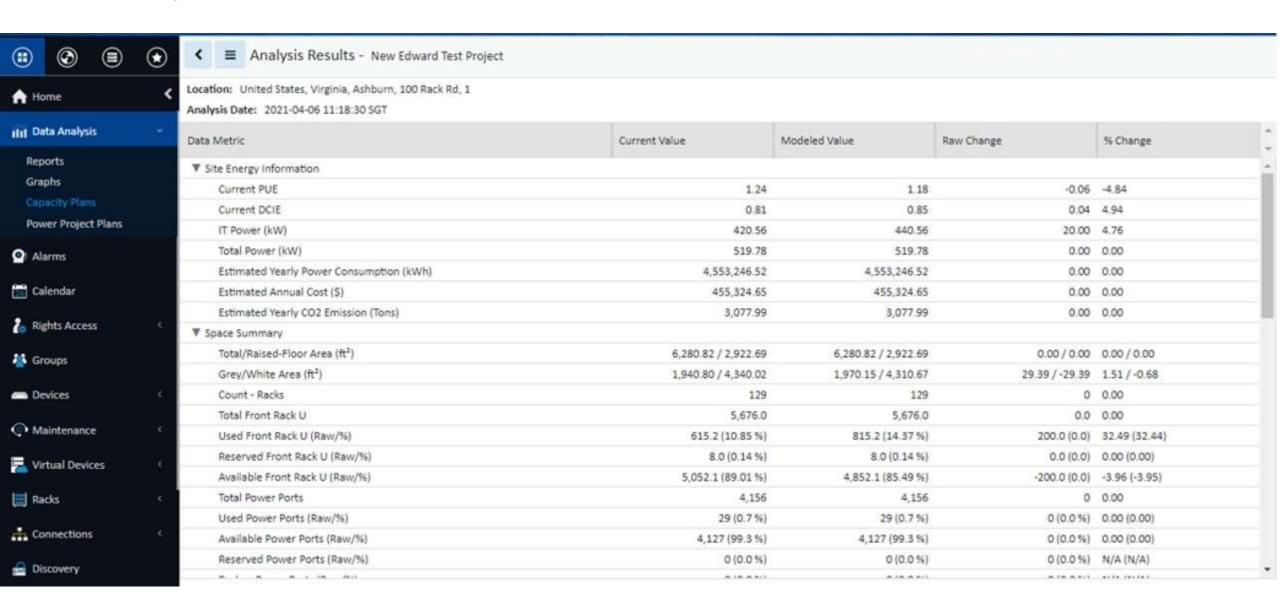Multi-User access; Customized Dashboards and Report

2D View

What If Analysis
Capacity Planning
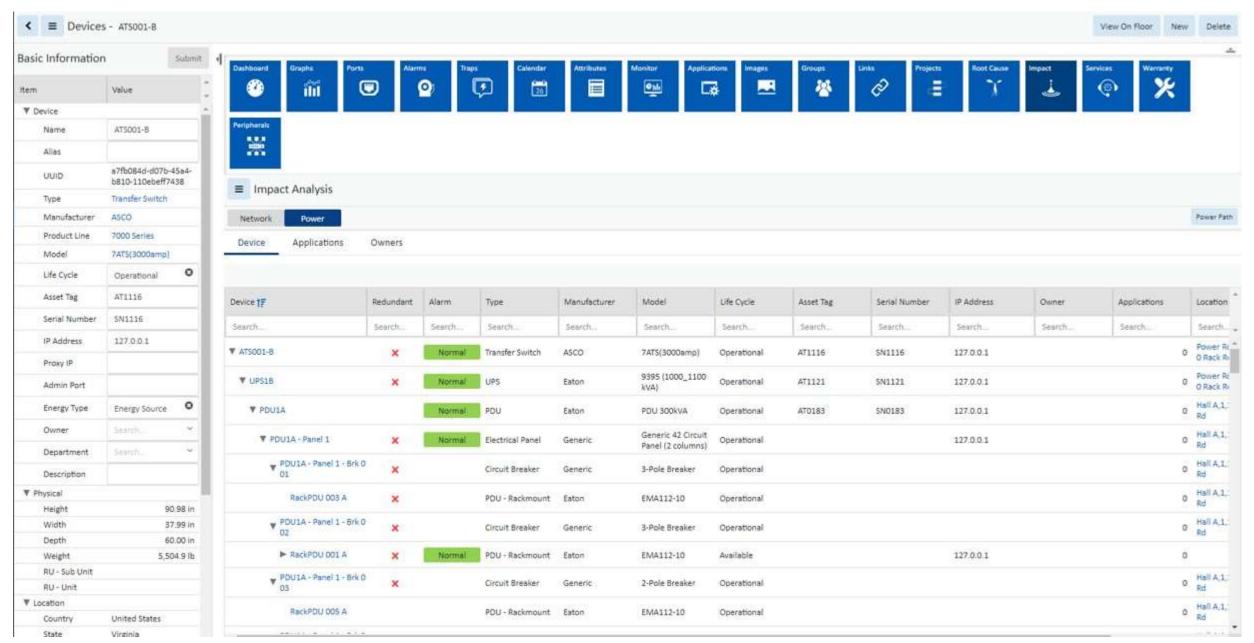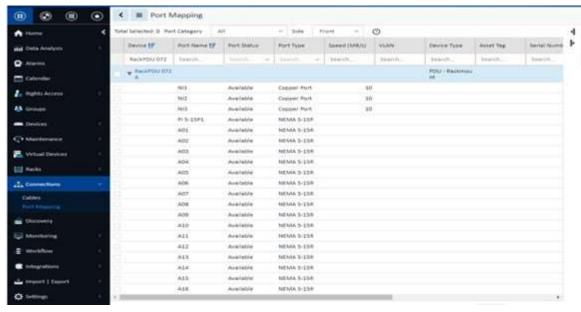
Analysis Results - New Edward Test Project

Location: United States, Virginia, Ashburn, 100 Rack Rd, 1

Analysis Date: 2021-04-06 11:18:30 SGT

Data Metric	Current Value	Modeled Value	Raw Change	% Change
▼ Site Energy Information				
Current PUE	1.24	1.18	-0.06	-4.84
Current DCIE	0.81	0.85	0.04	4.94
IT Power (kW)	420.56	440.56	20.00	4.76
Total Power (kW)	519.78	519.78	0.00	0.00
Estimated Yearly Power Consumption (kWh)	4,553,246.52	4,553,246.52	0.00	0.00
Estimated Annual Cost ($)	455,324.65	455,324.65	0.00	0.00
Estimated Yearly CO2 Emission (Tons)	3,077.99	3,077.99	0.00	0.00
▼ Space Summary				
Total/Raised-Floor Area (ft²)	6,280.82 / 2,922.69	6,280.82 / 2,922.69	0.00 / 0.00	0.00 / 0.00
Grey/White Area (ft²)	1,940.80 / 4,340.02	1,970.15 / 4,310.67	29.39 / -29.39	1.51 / -0.68
Count - Racks	129	129	0	0.00
Total Front Rack U	5,676.0	5,676.0	0.0	0.00
Used Front Rack U (Raw/%)	615.2 (10.85 %)	815.2 (14.37 %)	200.0 (0.0)	32.49 (32.44)
Reserved Front Rack U (Raw/%)	8.0 (0.14 %)	8.0 (0.14 %)	0.0 (0.0)	0.00 (0.00)
Available Front Rack U (Raw/%)	5,052.1 (89.01 %)	4,852.1 (85.49 %)	-200.0 (0.0)	-3.96 (-3.95)
Total Power Ports	4,156	4,156	0	0.00
Used Power Ports (Raw/%)	29 (0.7 %)	29 (0.7 %)	0 (0.0 %)	0.00 (0.00)
Available Power Ports (Raw/%)	4,127 (99.3 %)	4,127 (99.3 %)	0 (0.0 %)	0.00 (0.00)
Reserved Power Ports (Raw/%)	0 (0.0 %)	0 (0.0 %)	0 (0.0 %)	N/A (N/A)

Navigation sidebar:
- Home
- Data Analysis
  - Reports
  - Graphs
  - Capacity Plans
  - Power Project Plans
- Alarms
- Calendar
- Rights Access
- Groups
- Devices
- Maintenance
- Virtual Devices
- Racks
- Connections
- Discovery

Impact & Root Cause Analysis

Port Mapping
Cable management & power path
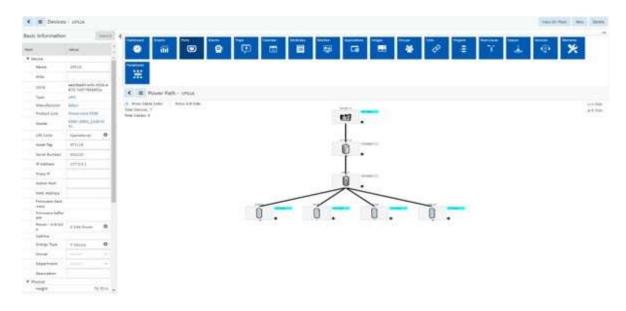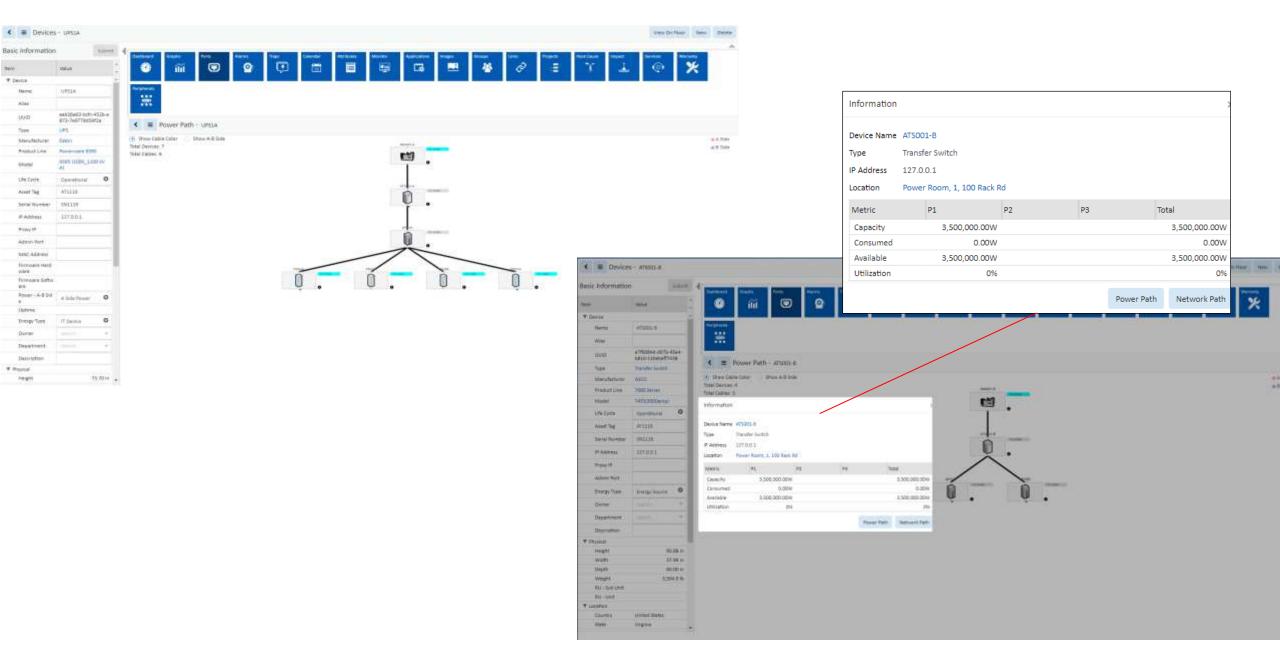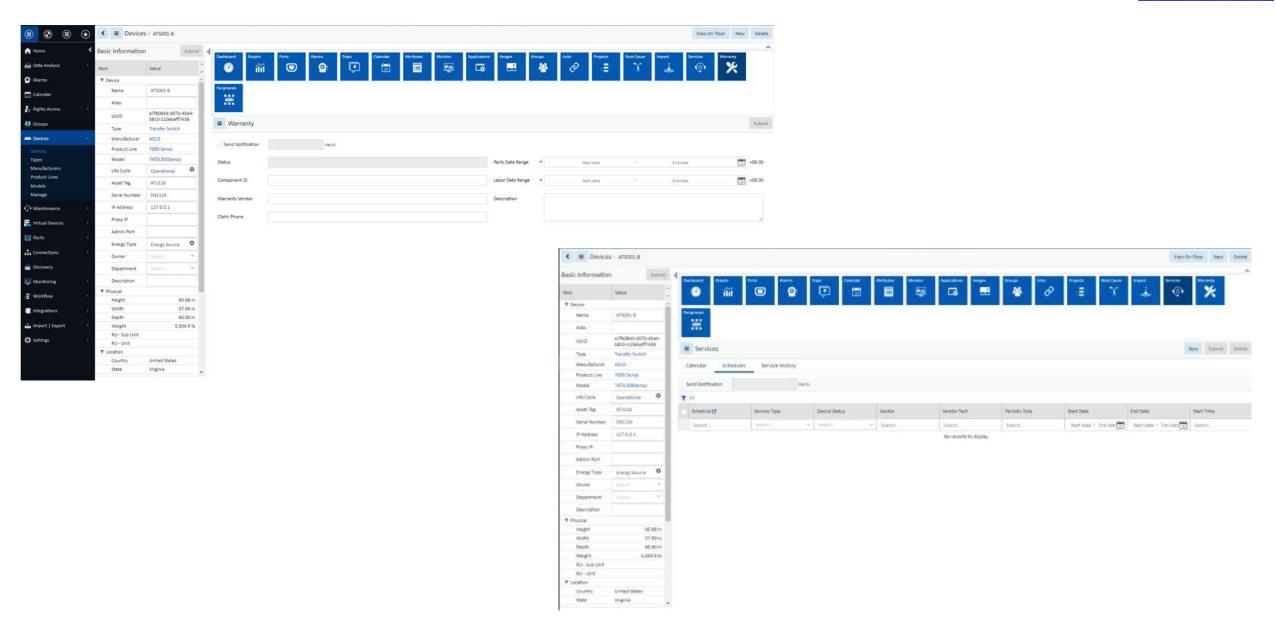
Power Path Analysis
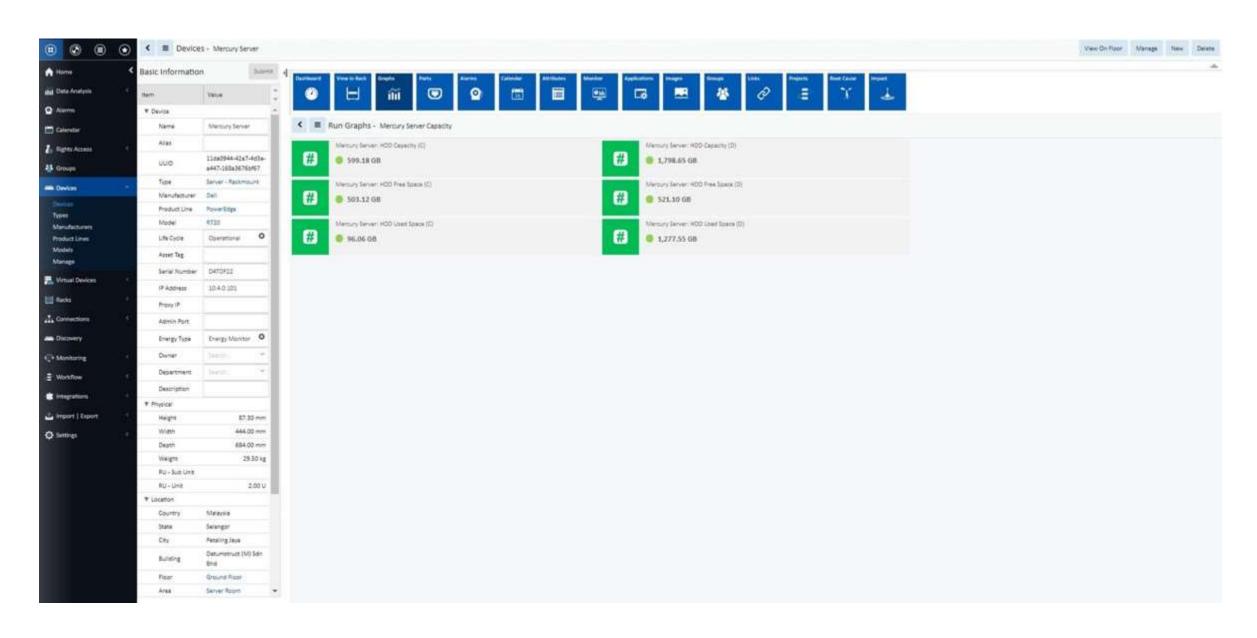
Scheduled Services & Warranty

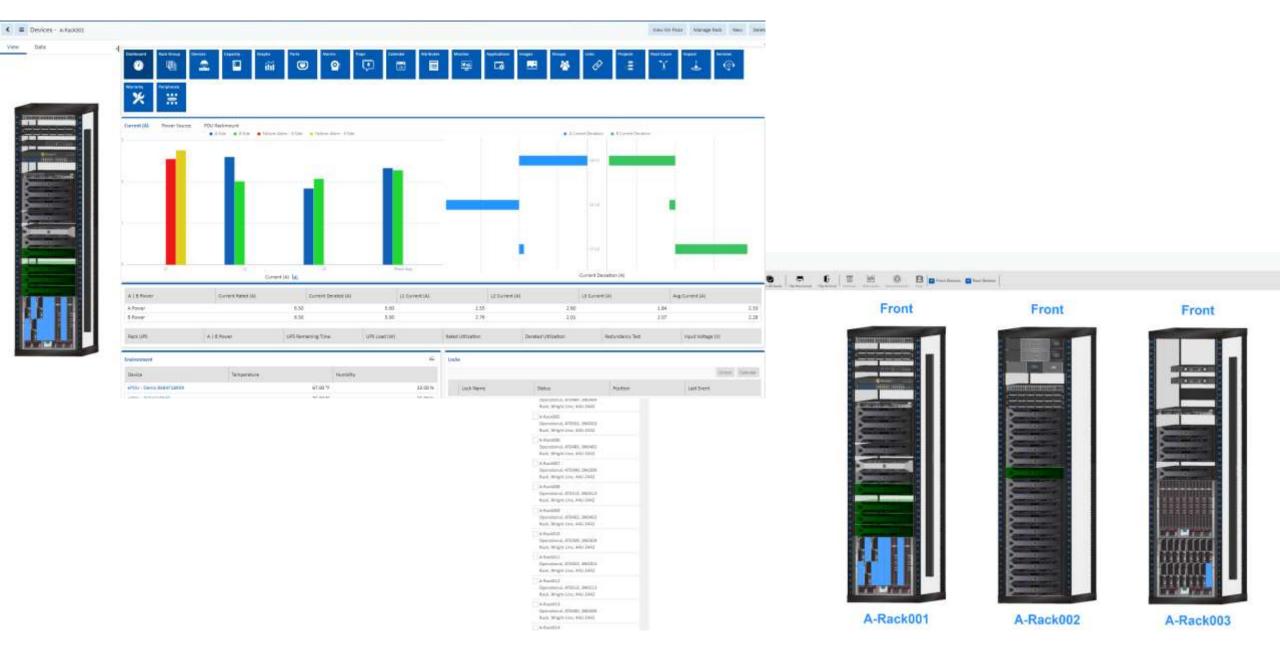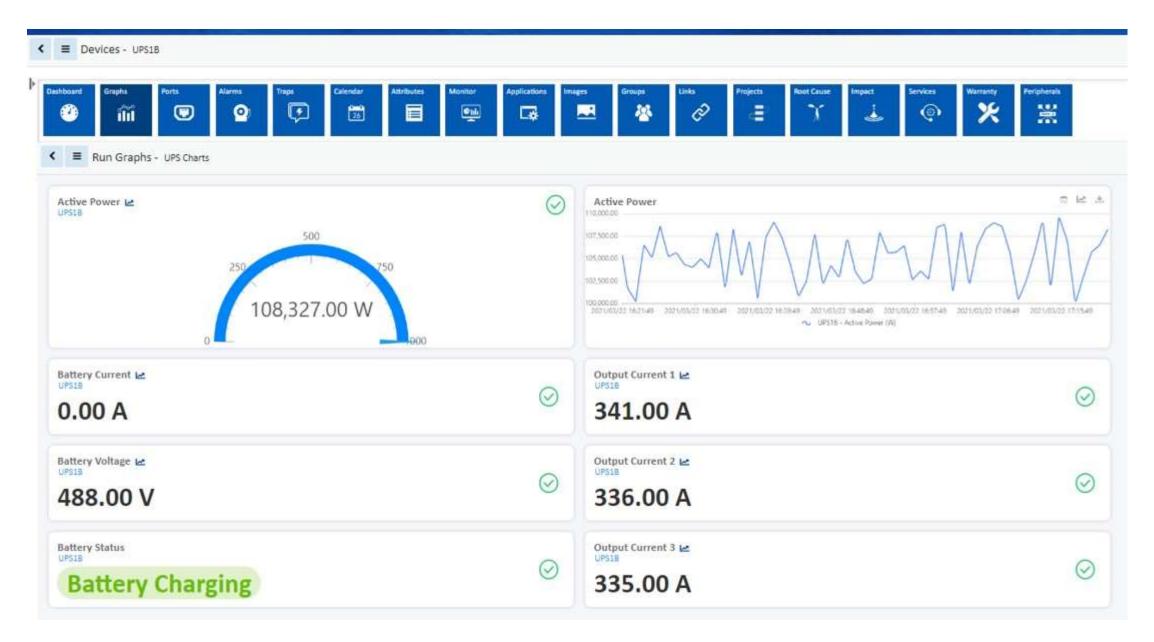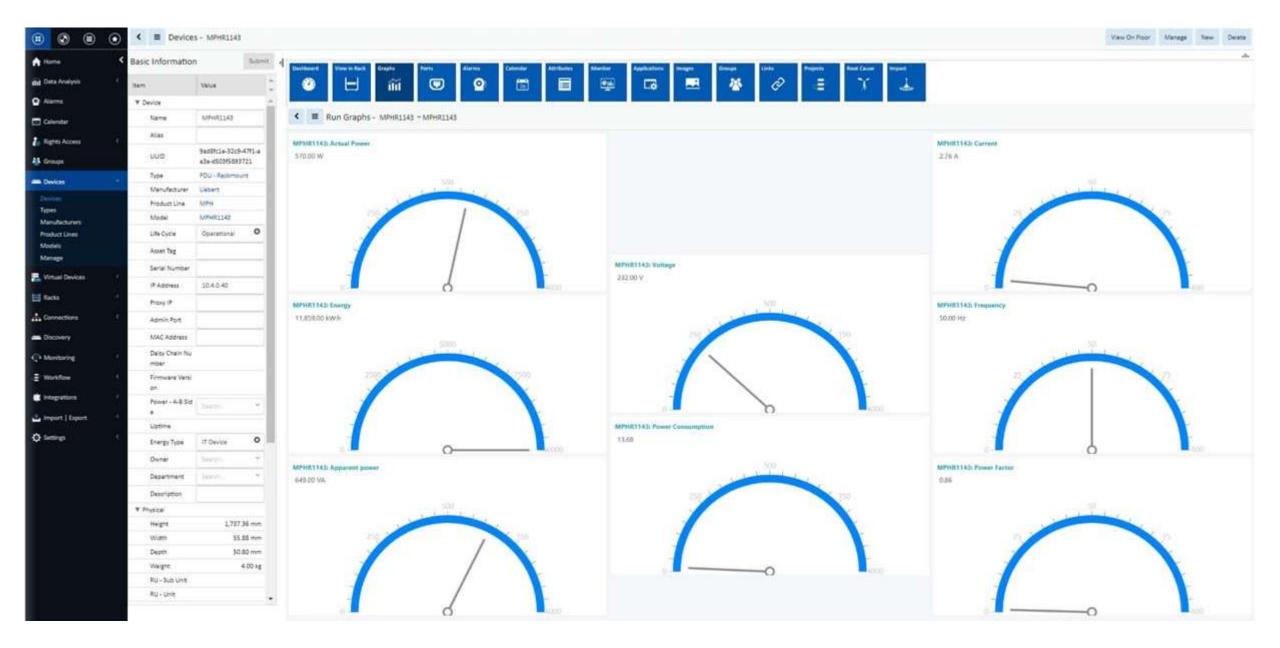# Server HDD Capacity

Rack Overview

Target Device Performance

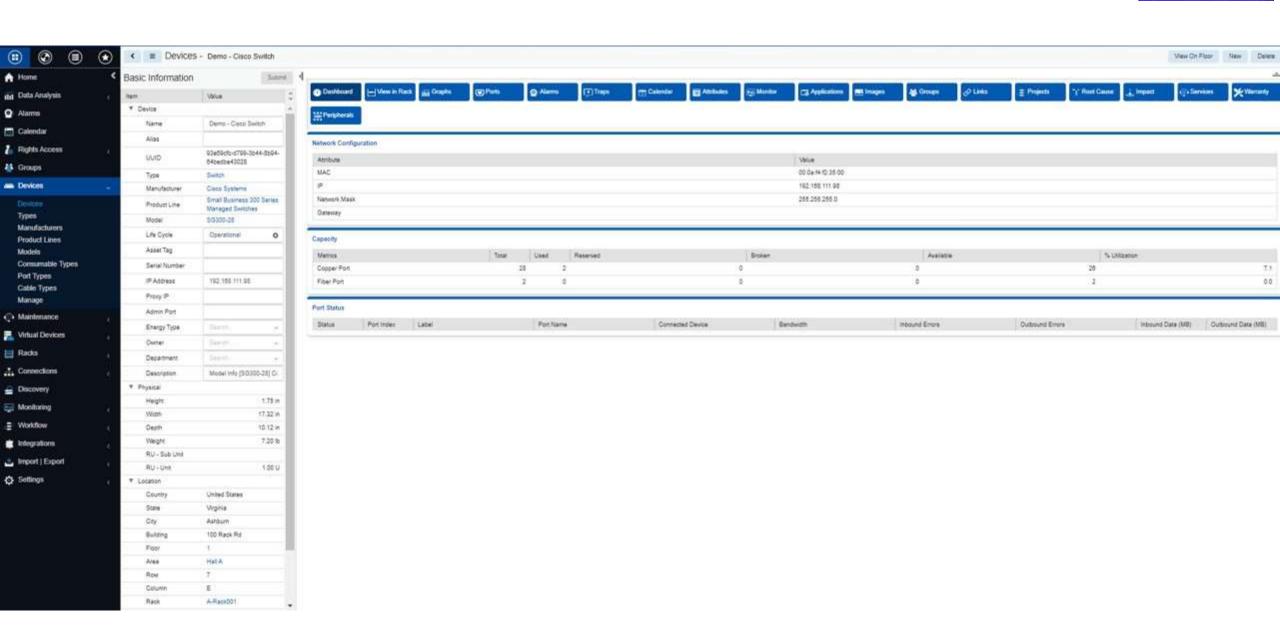# Gauge Meter View for Target Device

Network Status
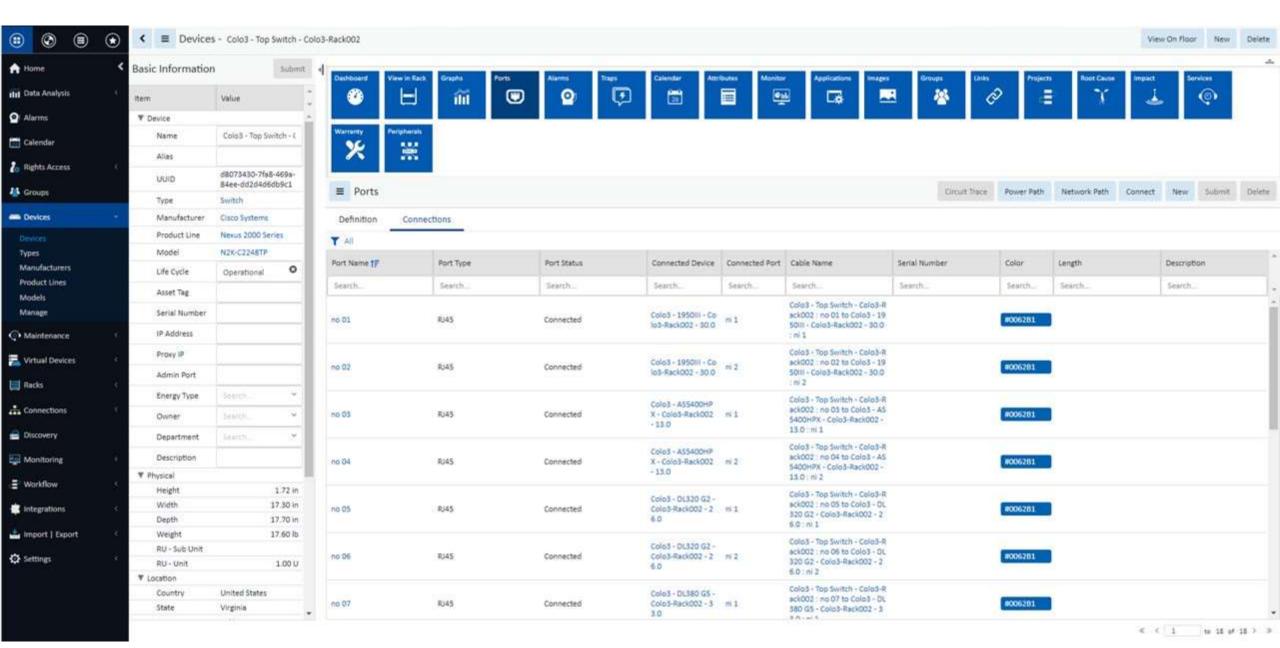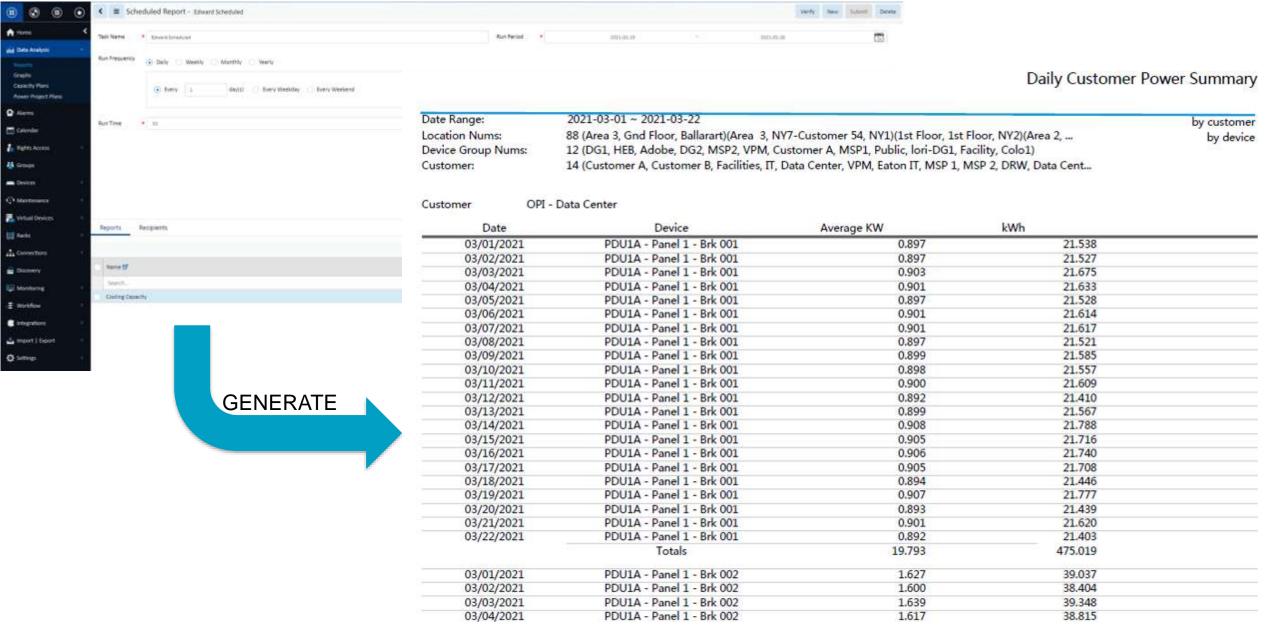
Cable Management

Scheduled Report

Mobile Audit

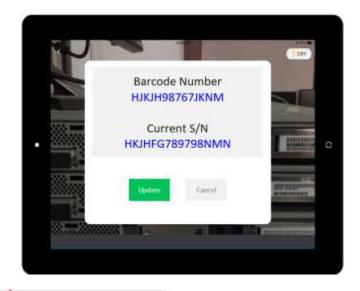**Value Added Proposition:**
3rd Party Smart Cabinet Integration

Direct access to 3rd party All-in-One Rack

© 2022 Visiontec System Sdn Bhd

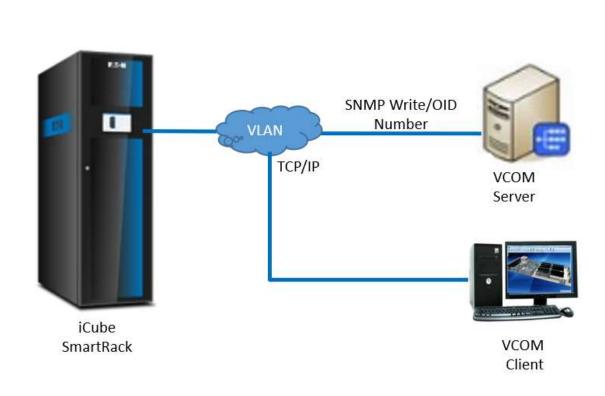# Gauge Meter View Reading Pulled from 3rd party All-in-One Rack

INTEGRATION WITH RACK DOOR ACCESS CONTROL

SNMP Write/OID Number

VLAN

TCP/IP

VCOM Server

iCube SmartRack

VCOM Client

AA AB AC AF AG AH

With a customized button, VCOM system will send SNMP message through SNMP Write to trigger iCube SmartRack to open door access remotely.
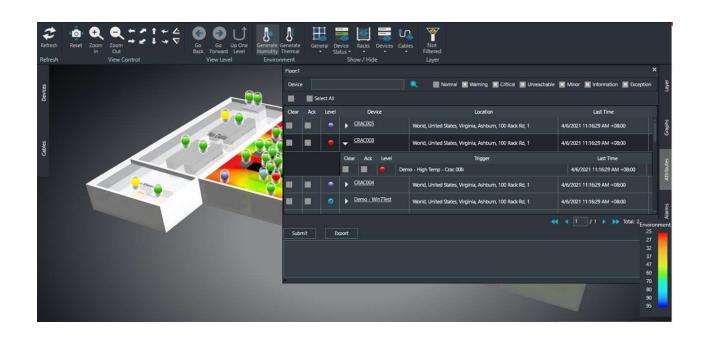
Case Studies

APAC Customers

MINDEF, Malaysia

Problem: Require a highly secure, centralized monitoring tool to monitor all devices

Solution: Deployed DCIM with environmental monitoring solutions

Outcome: Able to manage all the devices centrally and send notification alerts

Problem: Require to meet Green Grid requirement and manage power efficiency

Solution: Deployed DCIM to monitor its real time facility Power and IT equipment Power.

Outcome: Able to track actively the PUE and to able to improve its power efficiency through active management of its facility and IT equipment.

Port Singapore Authority

Problem: Untraceable Asset and errors causes by human errors in recording.
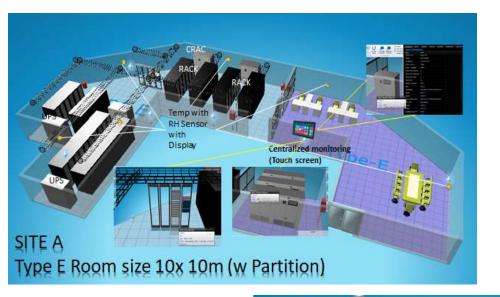
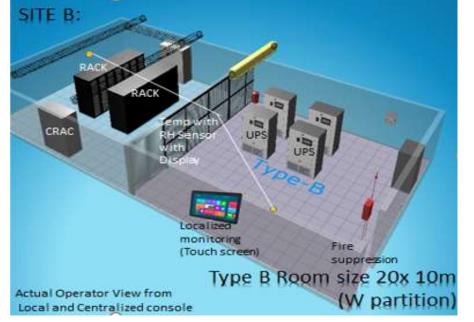**Solution:** Deployed DCIM with Active RF Asset Tags for Automated Data Center Inventory Tracking

Outcome: Deployed tracking in 500 racks. Management has good visibility of where is assets located.
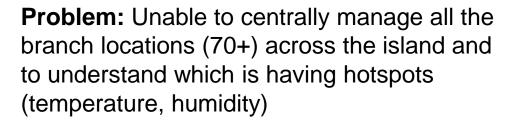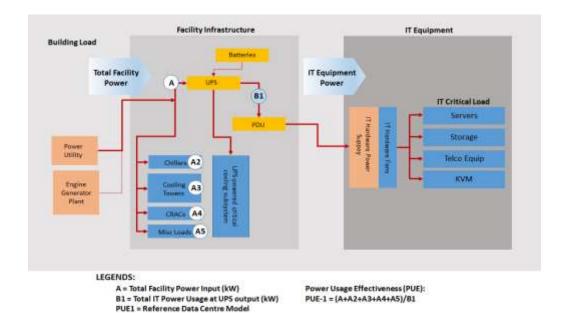
Singapore Police Force

SITE A
Type E Room size 10x 10m (w Partition)

SITE B:
Type B Room size 20x 10m (W partition)
Actual Operator View from Local and Centralized console

SINGAPORE POLICE FORCE

Problem: Unable to centrally manage all the branch locations (70+) across the island and to understand which is having hotspots (temperature, humidity)

Solution: Deployed DCIM with environmental monitoring solutions island wide
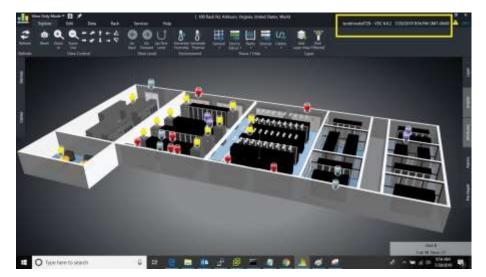
Outcome: Able to centrally manage all the 70 + branch offices data centers centrally. Able to be notified of any alarms which needed their attentions.

Institute of Technical Education

Problem: Unable to have an accurate PUE readings of its own Data Center and understand its energy efficiency.

Solution: Deployed DCIM to monitor its real time facility Power and IT equipment Power. Reports are being customized to meet the SS564 reports for annual auditing.

Outcome: Able to track actively the PUE and to able to improve its power efficiency through active management of its facility and IT equipment.

Product Roadmap-Feature Highlights for Solution

6.5 Q2 2021	6.6 Q3 2021	7.0 Q4 2021	7.1 Q1 2022
Built-in Apache Superset Business Intelligence Tool	Initial Integration with Foreseer EPMS System.	Enhanced 3D Graphics Support in Web UI	Enhanced Integration with Foreseer EPMS System
Support MSP VPN solutions	Container-based VDC Deployment	Automated Probe Deployment and Maintenance from Central ServerAdmin.	Support Distributable Master Server, Report Server, API Server, and ES Server.
Syslog Support for Splunk Monitoring	VDA Integrates With Apache SuperSet.	Remote VM Automation Support.	Image Recognition for Models.
Enhanced Port Mapping and Multi-Rack View for Batch Processing.	Implement Infrastructure Studio to allow users to manage the cable trays, fiber conduits, pipes, etc.	Support One-Line Diagram.	AR Integration
PredictPlus Remote Monitoring Services.	Support High Performance Database Clustering	Flowable Drive Project Wizard.	3D Visual for Multi-Campus/City Connectivities
MQTT Monitoring Support	Remote Configuration Automation Framework	Support External API Calls as Monitoring Protocol.	Built-in Intelligent Model Creation Tool.
Support Web Page Data Extraction as Monitoring Protocol	Read-Only Database Views for 3rd Party Integration	Hyper-V Support	Automation Supports Rollbacks and Compound Conditions

THANK YOU