The power behind competitiveness

Delta InfraSuite Manager
Data Center Infrastructure Management (DCIM)

Data Center Infrastructure Solutions

ΔELTΔ

Smarter. Greener. Together.

Delta InfraSuite Management System

InfraSuite Manager - Data Center Infrastructure Management (DCIM)

"Due to rapid technology advances, enterprises are demanding centralization of management processes and also a consolidation of infrastructure into a centralized location; limited availability of computing resources, power and space has led to an increasing demand for DCIM (Data Center Infrastructure Management) solutions."

- Global Data Center Infrastructure Management Market
Technoavio, 2016

The velocity of its growth, coupled with its real and tangible benefits makes understanding DCIM important not just for facility managers, but also for CIOs and IT managers. Delta InfraSuite Manager is the fully featured DCIM software solution to deliver automation and visibility into the data center and increase the ease of management on a comprehensive platform. InfraSuite Manager optimizes the performance and life cycle management of the data center.

Benefits of InfraSuite Manager

Central View from One Platform
InfraSuite Manager provides users a central view to observe all of the critical information for a data center based on a single real-time platform.

Cost Effective
Organizations with corporate operation of cost efficiency initiatives can also look to DCIM to better manage and optimize resource use across their entire infrastructure, as well as help lower their impact on the environment. PUE (Power Usage Effectiveness) is improved and costs are reduced accordingly.

Increased Availability
By viewing critical information in the data center, the availability of the data center has been increased. InfraSuite Manager offers advanced alert algorithms across the infrastructure. It helps the data center mitigate the risk of downtime.

Sustainability Management
Having insight into the future of the data center's day-to-day operations, and understanding how to optimize the data center's resource allocation is invaluable to a business. InfraSuite Manager not only enhances capacity and asset management but also improves overall productivity, which can extend the data center life cycle.

Empower your data center

For Facilities Managers

- Overall layout of your data center
- Overall environment mapping or profile of your data center
- All equipment status
- Chiller plant status and profile
- Power diagrams
- Alarm notification and reporting

For IT Managers

- Access control and surveillance
- Asset management
- Rack utilization, rack U-space, weight, power load and network port for each rack
- Multiple site management
- Alarm notification, reporting and schedule
- IPMI

For Chief Information Officers CIOs

- Real time and historical PUE
- Electricity cost and billing
- Overall capacity utilization
- Work order progress and approval process
- Alarm notification and reporting

Management Philosophy for Data Center Optimization
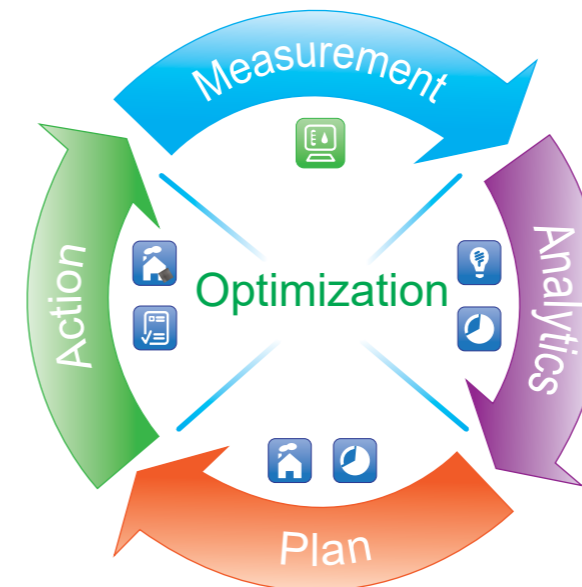
Measurement
Measure and monitor the overall data center environment in real-time from a central dashboard

Analytics
Create a virtual model of the infrastructure to digitally map the relationships between all these components

Plan
Manage the data center better based on insightful historical information and trend analysis with well-grounded planning

Action
Define actionable solutions and configurations to execute

Product Features

Base Model (Operation)	Energy	Slide Show	Asset	Capacity	Work Order	Asset Inspection

Base Model (Operation Platform)

The base model of the InfraSuite Manager provides real-time critical information for a data center across floors or locations. It also gives recommendations on how to resolve issues, and offers a built-in report generator tool and template that provide device information and trend charts in the reports. The base model is the fundamental monitoring platform and extensional function modules can be added according to the demands of enterprises or organizations. The communication architecture of InfraSuite Manager uses Master/Slave and Browser/Server architecture for the Windows client and web browser user interface.

FIGURE 1. Overview of Data Center - Temperature

PUE Energy Module

The Energy Module of the InfraSuite Manager contains the functions of energy measurement, PUE calculation, electricity tariff formula, and historical data analysis. In addition, it includes organizational energy classification and management mechanism. With time and experience operating this system, datacenter managers develop greater agility for managing energy consumption. This module can transform energy consumption data collected from power meters, UPS (Uninterruptible Power Supply), PDU (Power Distribution Unit) and environment detectors into dynamic charts and graphs, including line charts, bar charts, and pie charts based on user preference.

FIGURE 2. Dashboard of PUE

Energy Analysis Module

Energy Analysis is not just for a single site but for the entire organization. The electricity tariff formula can be customized for each department. In terms of detailed energy analysis, Delta offers diverse scenario analyses, including energy usage KPI, comparison, energy combination analysis, abnormal energy usage ranking, and energy usage estimation.

FIGURE 3. The Hierarchy of Energy Analysis

Asset Module

Asset Module offers graphical views of assets in every single rack in the data center. This makes it easy to quickly identify the power path and network topology map. In the case of assets without proper management, it often leads to a higher mean time to repair (MTTR) and lowering the availability of the data center's equipment.

FIGURE 4. Asset Module - Rack Management

Capacity Module

Capacity Module allows data center managers to plan for the future more effectively through the use of detailed data on rack space, weight, network, power and cooling capacity in the data center. For example, Capacity Module helps data center managers evaluate resource consumption, making it easier for them to plan and decide on the future allocation and most suitable installation locations for IT devices.

Work Order Module

The Work Order Module provides a highly customizable platform that enables users to design work order templates for different management purposes. Different variables such as names, types, priority, schedule, roles of tasks can then be set by the administrator. This helps users not only simplify and integrate the process of change management, but also extends the life cycle of data center operation.

Asset Inspection Module

The Asset Inspection Module of the InfraSuite Manager is used with a user-friendly mobile app which makes it smarter and more efficient for the inspector to complete his/her inspection process. Customizable templates can be designed for different types of assets. Users can also upload photos of the inspected assets to InfraSuite Manager. Unique QR codes of each asset can be generated by the system, making the tasks more intuitive.
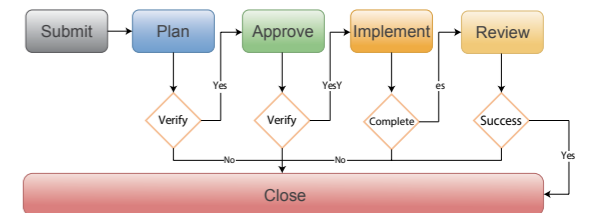

FIGURE 5. Automatic Availability Calculation

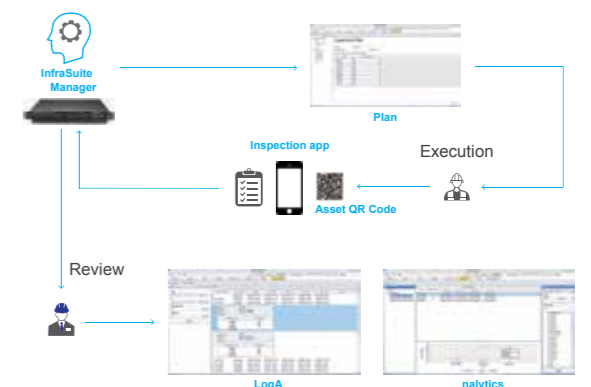FIGURE 6. The Process of Change Management

FIGURE 7. The flow of Inspection Execution and Review

System Requirements

	InfraSuite Manager (Server)	InfraSuite Manager (Windows Application UI)	InfraSuite Manager (Web Monitor UI)
Hardware	CPU: > 2GHz	CPU: > 2GHz	CPU: > 2GHz
	Memory: ≥ 8G Free HD Space: 500G mirrored	Memory: ≥ 4G	Memory: ≥ 4G
Software	Support OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Support OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Recommended Web Browser: Microsoft Internet Explorer v11, Google Chrome v30, Mozilla Firefox v23 and Safari v5.

Delta InfraSuite Management System

InfraSuite Device Master

InfraSuite Device Master provides a rich set of capabilities that simplify and automate critical device monitoring. It allows users to observe the status of all devices, query event logs or history data, and assists users in taking appropriate action. With cost effective deployment, this software solution is scalable to match your business growth.

Benefits of InfraSuite Device Master

Free to Download
InfraSuite Device Master is free to download with 5 nodes by default for monitoring your devices. Various infrastructure facilities such as power and cooling in a data center can be monitored.

Real-Time Monitoring
Users can gather the latest status of critical facilities in a data center through the system screens of InfraSuite Device Master. InfraSuite Device Master also lets you view all of a site's device information, query history and events at the same time, even for multiple sites in different countries.

Easy to Deploy
The download file is ready on the Delta Software website. InfraSuite Device Master is easy to install on your server or PC, with software designed for quick installation and implementation.

Migration to InfraSuite Manager (DCIM)
If you are not only looking for device monitoring but also a complete DCIM solution, InfraSuite Device Master is the easiest way of migrating to InfraSuite Manager, which is Delta fully featured DCIM software solution.
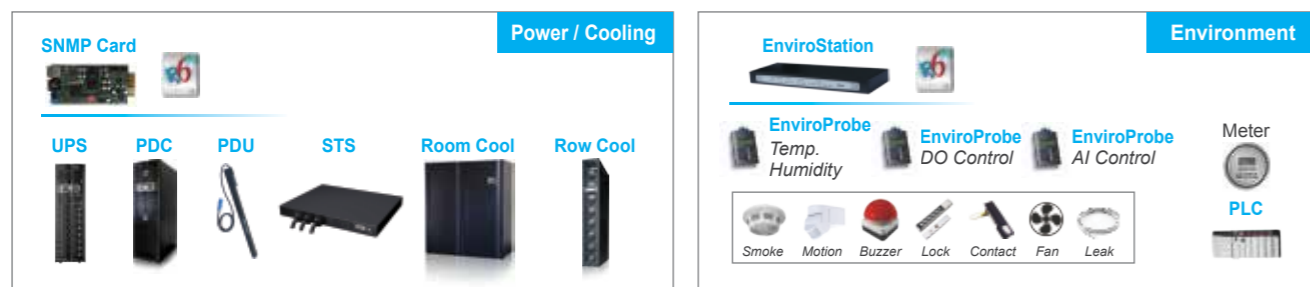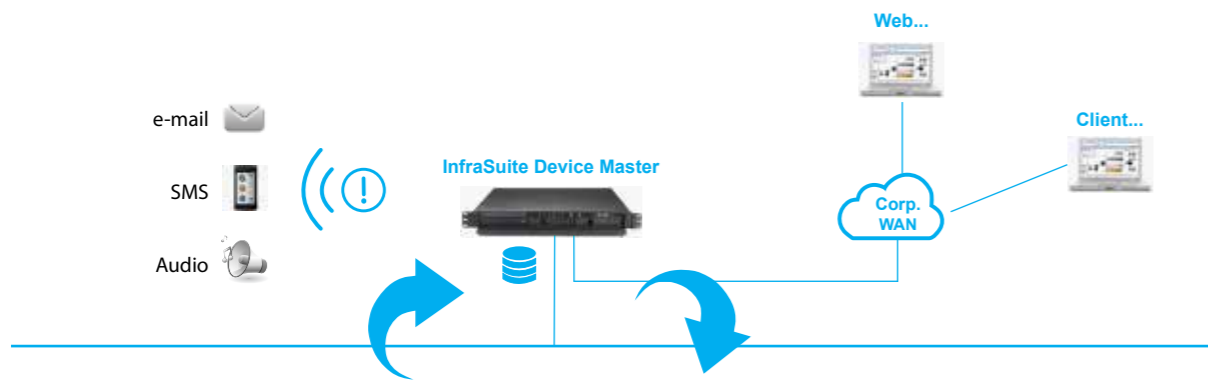

FIGURE 1. Delta InfraSuite Device Master Monitoring Application

Free Download
To try the lite version of DCIM (InfraSuite Device Master), please go to:
http://www.deltapowersolutions.com/en/mcis/data-center-infrasuite-device-master.php

Product Features

Navigational Graphics
Navigational graphics of the InfraSuite Device Master are customizable. Users can design a floor layout using the provided components.

Multiple Protocol Support
InfraSuite Device Master supports multiple device protocols, such as Modbus, SNMP and OPC.

Proactive Notification
Proactive notifications provide automated, personalized email, short messages, and audio to users.

User Account Management
Users can be classified into groups based on privilege levels. The job scope of each privilege level is defined by administrators. The jobs include the level of visible access to layout plans, device control and system operation.
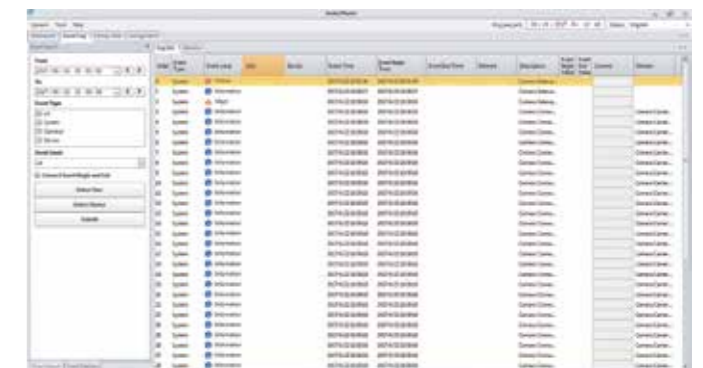
Event Management
InfraSuite Device Master has categorized event levels with 16 levels to help users take appropriate action accordingly. Besides, events can be queried by time, type, level and devices. InfraSuite Device Master records the system, operator and device events in its database where the user can review the events' status.

Data Storage and Backup
InfraSuite Device Master stores all history events and data into its database. Users may use this data for analysis. In addition, the database can be backed up automatically base on user preference.

FIGURE 2. Navigational Graphics

FIGURE 3. Event Log List

System Requirements

	InfraSuite Device Master (Server)	InfraSuite Device Master (Windows Application UI)	InfraSuite Device Master (Web Monitor UI)
Hardware	CPU: > 2GHz	CPU: > 2GHz	CPU: > 2GHz
	Memory: ≥ 4G Free HD Space: ≥ 50 G	Memory: ≥ 4G	Memory: ≥ 4G
Software	Support OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Supported OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Recommended Browser: Microsoft Internet Explorer v11, Google Chrome v30, Mozilla Firefox v23 and Safari v5.

Delta InfraSuite Management System

EnviroStation

Delta's Environmental Management System (EMS) monitors the environment and conditions in the data center, including temperature, humidity, water leakage, alarms for fire, smoke, and unauthorized entry.

The EMS offers IT managers an integrated platform for more convenient monitoring of today's data center.

EnviroStation integrates the monitoring of the data center's environment and other conditions, and sends the data to a central manager via network. User-defined alarms ensure the data center's security.

Easy to manage

- Assess and collect key data center information for enhanced management
- Real-time notification providing faster management response and more effective operations
- Setting manager password for higher security
- SNMP allowing easy integration with any enterprise management system

Convenience

- Monitoring via internet browser
- InfraSuite Manager remote monitoring software providing prompt handling of any data center situation
- Graphical interface and historical data records for more effective management
- Real-time alarm notifications shortening management response time

Flexibility

- Supports SNMP communication protocol
- Setting each alarm value based on actual requirements

Technical Specifications

Model		EMS2000
Input	Power	100~240 Vac, 50/60 Hz
	Digital Input	Wet Contact Signal • Alarm Voltage 5~24 Vdc, 1-9 mA Dry Contact Signal • Normal: Off (open circuit) • Alarm: On (short circuit)
	Analog Input	Voltage: 0~10Vdc Current: 4~20 mA
	RTD	Range: 0~50°C Accuracy: ± 1°C with 3-wire PT100
	Resistance Temperature Detection (x1)	Support 2-wire or 3-wire resistance
	Leakage	Detect Voltage < 1V (alarm signal with S-1FP leak sensor)
Output	Sensor HUB	For connection with sensor devices (such as smoke detectors, fire detectors, or door sensors, etc) and support: + 12V, 0.8A (max) + 24V, 1.0A (max) One port limit 0.6A
	Delta Bus	+ 12V, 0.8A (max)
	Relay Output	26 Vdc (max), 0.8A (max)
Alert	Warning Light (X1)	Included in the package and can connect to EMS2000 via a Sensor Hub converter (through Port 1 or Port 2) to alert for abnormal conditions.
Network Connection	RJ45 (X1) RS485 (X2) Console (X1)	10/100 Base-T Standard ModBus Connect to PC via RJ-45 to DB9 cable (cable is included in the package) A configuration port is available for the console mode.
Environment	Operating Temperature Storage Temperature Operating Humidity	0 ~ 45°C -20 ~ 60°C 0~ 90% RH (non-condensing)
Dimensions	Product (W x D x H) Package (W x D x H)	440 x 157 x 44 mm 510 x 410 x 150 mm
Weight	Product Package	2.4 kg 5 kg

These specifications are subject to change without notice.

One Tool. Complexity Mastered.

Delta InfraSuite Manager. Integrated Efficiency.

InfraSuite Manager - Data Center Infrastructure Management (DCIM)

Have the entire data center at your fingertips!

InfraSuite Manager Function Module

| Base Model (Operation) | Energy | SlideShow | Asset | Capacity | Work Order | Asset Inspection |

Delta InfraSuite Management System

EnviroProbe

EnviroProbe monitors temperature, humidity in a single cabinet or area and transmits signals from environment sensor devices in the data center (e.g. door sensors, smoke detectors, fire detectors, water-leakage detectors etc.) to management via network. EnviroProbe also controls its connected devices when equipped with digital and analog outputs, keeping the IT manager promptly informed of all environmental changes by giving alarms, controlling the activation and deactivation of an external device (e.g. a magnetic lock), or by giving a sound alert using its own built-in buzzer upon detection of water leakage.

Easy to manage
• Monitoring temperature, humidity of the environment
• Backlight LCD display
• Digital/analog inputs and outputs

Convenience
• Work with EnviroStation(EMS2000) to monitor via internet browser
• InfraSuite Manager software for remote monitoring and recording

Flexibility
• Work with EnviroStation(EMS2000) to support SNMP communication protocol

Backlit LCD display
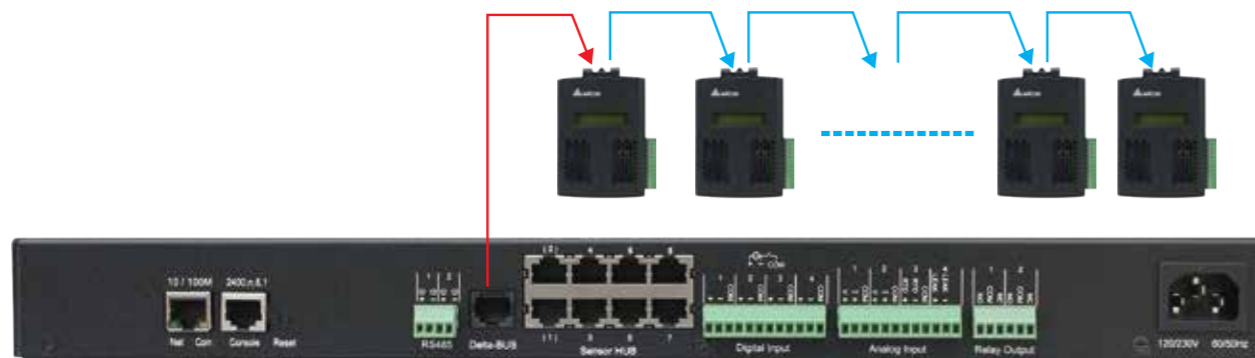
▲ Connecting EnviroProbes with EnviroStation can expand the scope of the monitored area.

Technical Specifications

Model	EMS1000	EMS1100	EMS1200
Input Voltage	EMS2000 Delta-BUS or SNMP Card: 12 Vdc (pin 1 & 4) PDU SNMP card: 5 Vdc (Pin 2 & 4)		
Purpose	To collect data from connected devices (temperature & humidity)	To control connected devices	To collect data from and control connected devices
Input/Output Contacts	4 dry/wet contact inputs	4 digital outputs	2 analog inputs, 1 analog output, 1 water-leakage detection (built-in buzzer)
	Connect to EnviroStation (EMS2000) or SNMP IPv6 card		Connect to EnviroStation (EMS2000)
Input	Wet Contacts:5~24Vdc, 1~8mA; Dry Contacts: Open/Short Status	N/A	Voltage: 0~10Vdc (12bit) Current: 0~20mA (12bit)
Output	N/A	Contact voltage/Contact current/Contact tolerance 60Vdc/1A/60W; 30Vac/2.08A/62.5VA	Voltage: 0~10Vdc (12bit) Current: 4~20mA (12bit)
Cascade number to EMS2000	Up to 16 units	Up to 4 units	Up to 5 units
Dimensions (WxDxH)	Product: 66 x 33 x 103 mm Package: 91 x 42 x 133 mm		
Weight	Net Weight: 120g	130g	
	Gross Weight: 140g	150g	
Environment	Temperature	Operation: 0 ~ 60ºC	
		Storage: -30 ~ 80ºC	Storage: 0 ~ 60ºC
		Accuracy: ± 0.4ºC & 0 ~ 60ºC	N/A
	Humidity	Operation: 0 ~ 90% RH (no condensation)	
		Storage: 0 ~ 100% RH (no condensation)	
		Accuracy: ± 3ºC & 0 ~ 80ºC	N/A
	Altitude	0 ~ 10,000 feet	
Conformance		CE	
		EN55022 (CISPR 22) Class B	
		EN55024 (Level 3 @Air 8 KV/contact 4 KV)	

These specifications are subject to change without notice.

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