Layer One Conference 2017

Eaton Power management solutions

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Whitespace business development

Gartner DCIM Magic Quadrant: Where is Eaton?

Figure 1. Magic Quadrant for Data Center Infrastructure Management Tools

- CHALLENGERS
- LEADERS
  - Emerson Network Power
  - Schneider Electric
  - Nlyte Software
- NICHE PLAYERS
  - Sunbird Software (formerly Raritan)
  - FNT
  - FieldView Solutions
  - Device42
  - Geist
  - ABB
  - Rackwise
  - Modius
  - Optimum Path
- VISIONARIES
  - Panduit
  - CommScope (iTRACS)
  - Cormant

ABILITY TO EXECUTE

COMPLETENESS OF VISION

As of September 2015

Source: Gartner (October 2015)

*Technavio global forecast by 2020 link
** 451 Group, 2013 !! link

- Gartner 2009 prediction:
  - $25B market by 2015
  - Current estimate:

  DCIM market in EMEA is expected to reach a total of **$722 million** by 2020 !!*

- The issue with DCIM
  - Complex, long sales cycle
  - Lengthy deployment
  - High maintenance costs
  - DCIM sector is overinvested**

EATON decided not to play

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IPM target market – virtualised IT

Small

Mid size

Enterprise

Software	Power Mgmt	# racks	Data replication	DCIM
IPM	✓	< 100	✓, SRM	✗

Understanding the challenge

IT downtime for business

Size of business	small <100 employees	med. 100-1000 employees	large 1000+ employees
Downtime events/year	1.7 occurrences	3.5 occurrences	3.0 occurrences
Average length of event	2.2 hours	3.4 hours	0.8 hours
Downtime cost/hour	$6,900	$74,000	$1,130,000
Downtime cost/year	$25,806	$880,600	$2,712,000

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The value of Intelligent Power Manager (IPM)

Reduce physical infrastructure cost and space

Minimize data center operating cost

Increase productivity and responsiveness

Reduce physical infrastructure costs & space

$3,000+ CapEx savings

by needing less external battery modules

	Before IPM	After IPM
Power required	3 racks @ 6kVA	3 racks @ 3kVA
Run time	1 Hour	1 Hour
UPSs needed	3 @ 6kVA	3 @ 6kVA
Battery modules	4 per rack	2 per rack
Rack space	15U per rack	9U per rack

Minimize data center operating cost

200%
Runtime

Double runtime with integrated load shedding and power capping capability

$2,450
in Savings

Avoid data retrieval costs of $2,450 per hardware device incident through environmental load shedding [1]

~54%
Less fuel

Reduce generator fuel consumption by ~54% to ride through power outages

1. Based on the average data loss episode impacting hardware, assuming data can be retrieved.
Mozy Enterprise/EMC – Data Loss: Understanding the Causes and Costs

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Increase productivity

10 Minutes — Total time needed to be up and running with IPM

1 min for IPM installation

+

2 mins to auto-discover power devices

+

3 mins to link IPM to VMware vCenter

+

4 mins to configure host for automated shutdown

Increase responsiveness

500+ Hours

of validation testing within our network of alliance partners

cisco Compatible

VBLOCK READY

EMC² VSPEX LABS VALIDATED

CITRIX PARTNER
Citrix Ready

redhat READY

vmware READY
MANAGEMENT AND ORCHESTRATION

NUTANIX READY
APPLICATIONS & OPERATING SYSTEMS

NUTANIX READY
BACK UP & DISASTER RECOVERY

NetApp
Alliance Partner

simplivity

VCE

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Microsoft Partner Network

Extending our reach in the datacenter

Intelligent Power Controller &
Intelligent Power Manager Infrastructure
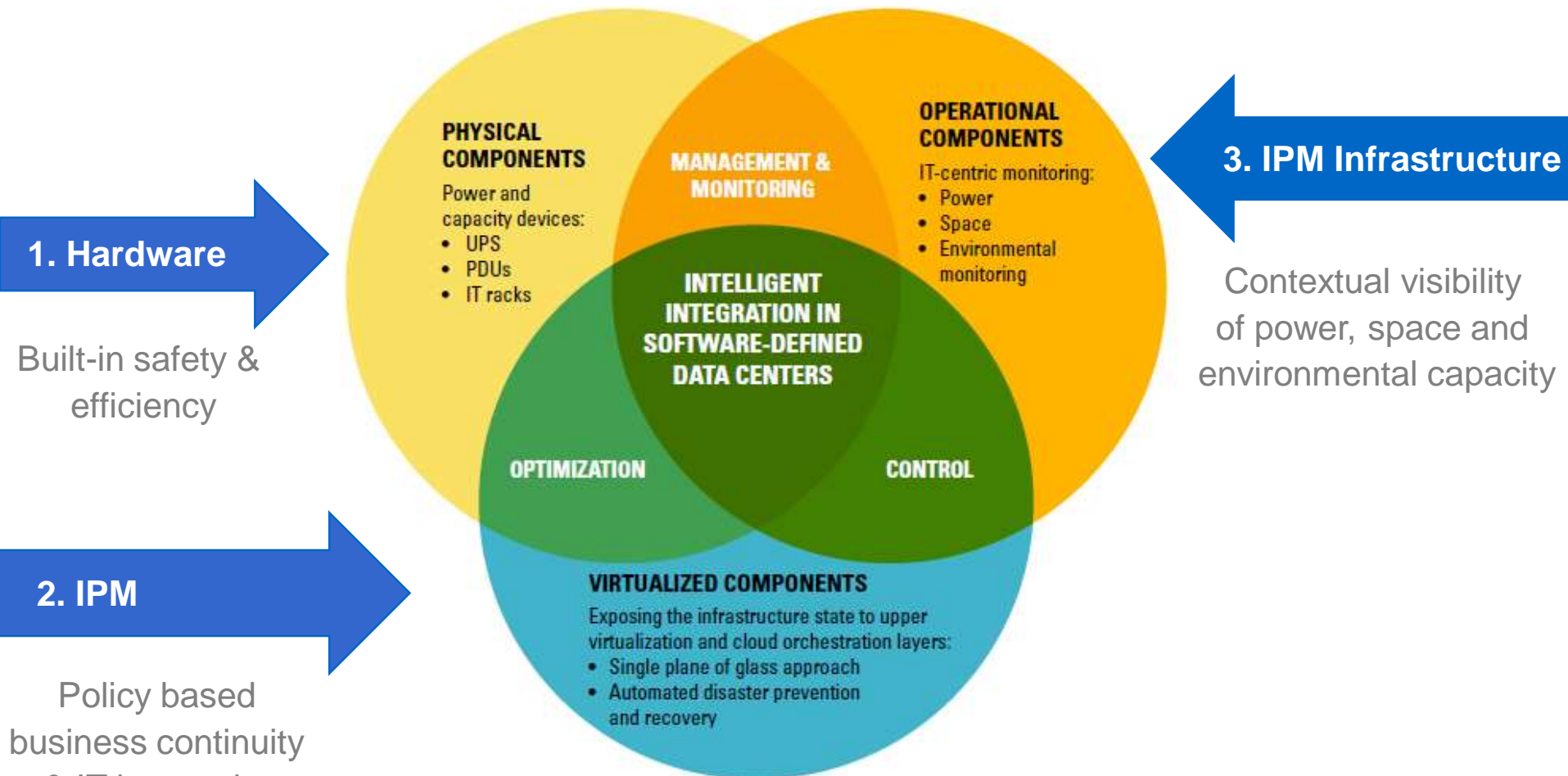
The next chapter is a powerful story

IPM   IPM Infrastructure

Policy based business continuity + simplified infrastructure monitoring

Eaton Intelligent Infrastructure

3 layer Solution Architecture

1. Hardware

Built-in safety & efficiency

2. IPM

Policy based business continuity & IT integration

3. IPM Infrastructure

Contextual visibility of power, space and environmental capacity

PHYSICAL COMPONENTS

Power and capacity devices:
- UPS
- PDUs
- IT racks

MANAGEMENT & MONITORING

OPERATIONAL COMPONENTS

IT-centric monitoring:
- Power
- Space
- Environmental monitoring

INTELLIGENT INTEGRATION IN SOFTWARE-DEFINED DATA CENTERS

OPTIMIZATION

CONTROL

VIRTUALIZED COMPONENTS

Exposing the infrastructure state to upper virtualization and cloud orchestration layers:
- Single plane of glass approach
- Automated disaster prevention and recovery

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What is IPM Infrastructure?

Hardware

Intelligent Power Controller 3000

Software Subscription

IPM Infrastructure software

Sensors

Radically simplifying critical power, energy consumption and environmental monitoring for IT rooms and small data centers

End User Value Proposition
Simplified infrastructure monitoring

- Intuitive user interface

- Drill down navigation

- Simple capacity management

Room view

Rack view

Asset management

The new approach of DCSO

The new approach to Data Centre Service Optimization (DCSO)

Eaton Intelligent Power Manager (IPM) Infrastructure allows operators of IT rooms and datacenters to understand and monitor power, environmental and physical capacity metrics, all within the context of their IT infrastructure quickly and easily.

Using this information, IT managers can then plan changes, anticipate challenges and make intelligent management decisions to optimize efficiency and ensure business continuity.
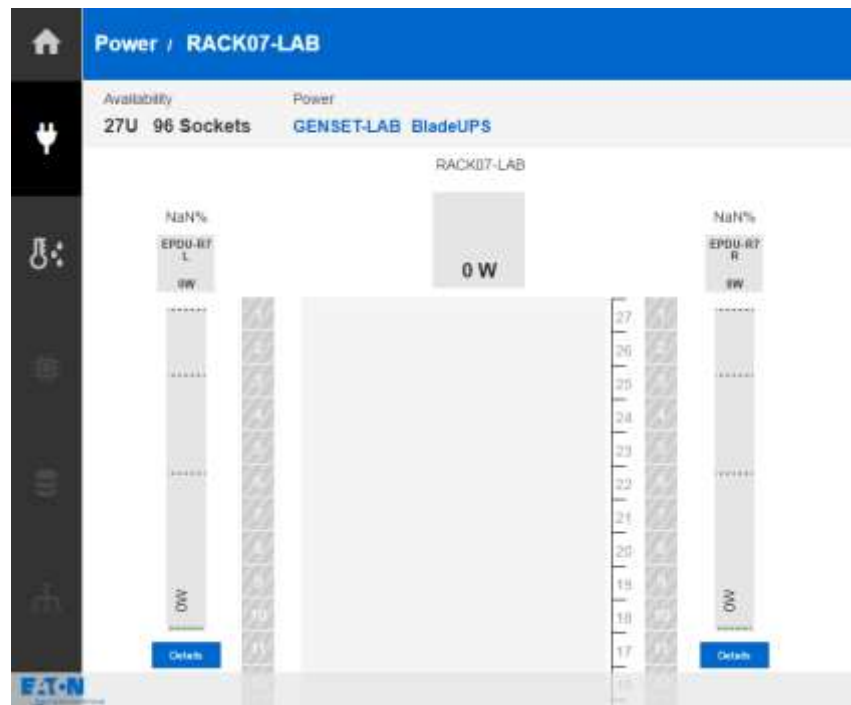
The perfect match with Eaton G3 ePDU:

Real-time capacity info. in context

with MO or MA PDU

Plain Old Asset Management

with basic PDUs

Which is more helpful to your IT guy who doesn't understand power?

New Infra 1.2 – sensors

- **New dry contact sensors available for order:**
- DCS001 : Door Contact Sensor
- VIB001 : Vibration Detector
- WLD012 : Water Leak Detector
- M12 : Smoke Detector

Product Code	Description	Image
EMP001	Temperature and Humidity Sensor	■
DCS001	Door contact sensor	■
WLD012	Water leak detector	■
VIB001	Vibration detector	■
M12	Smoke detector	■
XCELW	PIR motion detector	■

Eaton ePDU G3 range extension

New Intelligent 1U and 2U ePDU Managed, Switched and Metered Outlet

New addition to the current 0U range

Easy and flexible installation

- Fits on any rack

- Delivered with mounting system

- Multiple positioning system

  - Horizontally on a rack

  - Fits vertically

  - Under a surface

Typical applications

- Ideal for Co-Lo environments, give your customer power measurement and control over his devices.

- Colocation server racks, give reliable power and safe power distribution

- Wall mounted cabinet with no rear access

- Converged Infrastructure and Hyperconverged environment

New addition to the current 0U range

+ Higher density of managed outlets

EMAB71 comes with 32 Managed outlets and fit on a 42U rack

+ More 1P/3P 32A standard models

7 new 32A ePDU added to the current range

+ More best-selling outlet combination

3 new Basic		
EBAB08	309 32A 1P	36XC13:6XC19
EBAB20	309 16A 3P	21XC13:3XC19
EBAB32	309 32A 3P	24XC13:6XC19
3 new Metered Input		
EMIB22	C20 16A 1P	20XC13:4XC19
EMIB20	309 16A 3P	21XC13:3XC19
EMIB32	309 32A 3P	24XC13:6XC19
2 new Metered Outlet		
EMOB71	309 32A 1P	28XC13:4XC19
EMOB33	309 32A 3P	18XC13:6XC19
2 new Managed		
EMAB71	309 32A 1P	28XC13:4XC19
EMAB12	309 32A 3P	12XC13:12XC19

The most popular custom ePDUs are now available on the catalogue as standard!

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* B16, B17, B18 with national outlet configuration are now available "on demand" through the custom market

ePDU G3 range 2017

Input Type / Rating (A)	Outlet type: Qty	Breakers	Nominal Power	Basic	In-Line Metered	Metered Input	Metered Outlet	Switched	Managed
1 Phase									
C14 10A	8xC13		2.3kW	EBAB02		EMIH02			
C14 10A	12xC13		2.3kW	EBAB19					
C14 10A	16xC13		2.3kW	EBAB03		EMIB03	EMOB03	ESWB03	EMAB03
C20 16A	8xFR : 1xC19		3.7kW	EFLX8F*					
C20 16A	8xGE : 1xC19		3.7kW	EFLX8D*					
C20 16A	6xUK : 1xC19	2 single pole	3.7kW	EFLX6B*					
C20 16A	12xC13 : 1xC19	2 single pole	3.7kW	EFLX12I*					
C20 16A	16xC13		3.7kW	EBAB21					
C20 16A	8xC13		3.7kW			EMIH28	EMOH28	ESWH28	EMAH28
C20 16A	18xC13 : 2xC19		3.7kW			EMIB09			
C20 16A	20xC13 : 4xC19		3.7kW	EBAB22		EMIB22	EMOB22	ESWB22	EMAB22
IEC60309 16A	7xC13 : 1xC19		3.7kW					ESWB23	
IEC60309 16A	18xC13 : 2xC19		3.7kW			EMIB10			
IEC60309 16A	20xC13 : 4xC19		3.7kW	EBAB04		EMIB04	EMOB04	ESWB04	EMAB04
IEC60309 16A	IEC60309		3.7kW		EILB13				
2 x IEC60309 16A	2 x IEC60309		3.7kW		EILB24				
IEC60309 32A	12xC13 : 4xC19	2 single pole	7,4kW			EMIB06			
IEC60309 32A						EMIH06			EMAH06
IEC60309 32A	16xC13	2 single pole	7.4kW				EMOH84	ESWH84	
IEC60309 32A	20xC13 : 4xC19	2 single pole	7.4kW	EBAB05		EMIB05	EMOB05	ESWB05	EMAB05
IEC60309 32A	28xC13 : 4xC19	2 single pole	7.4kW				EMOB71		EMAB71
IEC60309 32A	36xC13 : 6xC19	2 single pole	7.4kW	EBAB08		EMIB08			
IEC60309 32A	IEC60309				EILB14				
2 x IEC60309 32A	2 x IEC60309				EILB25				
3 Phase									
IEC60309 16A	21xC13 : 3xC19		11kW	EBAB20		EMIB20	EMOB20	ESWB20	EMAB20
IEC60309 16A	36xC13 : 6xC19		11kW	EBAB00		EMIB00			
IEC60309 32A	6xC19	6 single pole	22kW	EBAB11 / EBAH11		EMIB11			
IEC60309 32A	3xC13 : 6xC19	6 single pole	22kW	EBAB01					
IEC60309 32A	6xC13 : 12xC19	6 single pole	22kW			EMIB07			
IEC60309 32A	18xC13 : 6xC19	6 single pole	22kW				EMOB33		EMAB33
IEC60309 32A	12xC13 : 12xC19	6 single pole	22kW			EMIB12			EMAB12
IEC60309 32A	24xC13 : 6xC19	6 single pole	22kW	EBAB32		EMIB32			
IEC60309 32A	30xC13 : 12xC19	6 single pole	22kW			EMIB34			
IEC60309 32A	IEC60309				EILB15				
2 x IEC60309 33A	2 x IEC60309				EILB26				

New ePDU G3 1U and 2U, available from 1st May 2017

New ePDU G3 0U, available from 1st June 2017

We make custom ePDU on demand

Dedicated Engineering Teams in centres of excellence work on specific configurations and significant projects to match customer's requirements
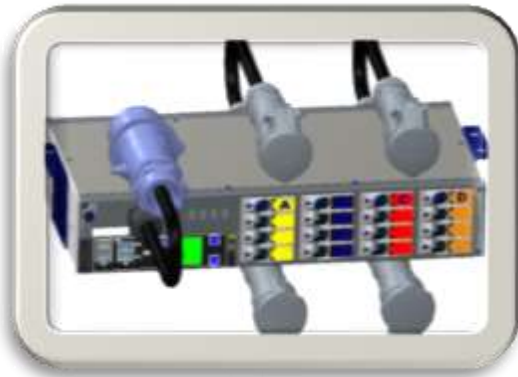
Quotations ready within in 24 hours

We make:

National outlets FR, DIN, BS on demand

Colors to differentiate your sources

Special requirements such as cable length, plugs, halogen free material, specific number of IEC outlets …

Value Proposition

	Differentiation Points	Why It Matters?
Improved IT efficiency	➢ Accurate metering of power usage up to the outlet (PUE Level 3) ➢ En masse configuration and upgrade ➢ Remote site management, save time from FSE on site visit	Optimize your power infrastructure performance and efficiency
Lower costs	➢ Built-in IEC plug retention works with your existing standard cables ➢ Daisy chain 8 units to reduce your network infrastructure costs ➢ Operating temperature 60°c, reduce cooling costs	Optimize cost and utilize all available power
Improved Business Continuity	➢ Hot swap control module without power disruption ➢ Trigger SRM or VM migration on ePDU's sensor events ➢ Live notification and alarms on power and environmental events	To ensure business uptime without downtime

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For more details:

- IPM infra video: http://powerquality.eaton.com/Videos/IPM-Infra-Video.asp?cx=58

- for details see:

- www.42ity.org

- www.eaton.com/intelligentpower

- www.eaton.eu/ipminfra

Additional resources

www.eaton.com/intelligentpower

IPM training : (registration required)

https://eaton.6connex.com/event/VirtualEvent/login

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