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Eaton Intelligent Power Manager

Integrated power management software for virtual environments

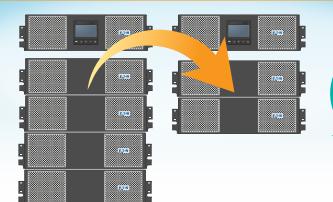


Ensure data integrity

Eaton's Intelligent Power Manager (IPM) software provides the tools needed to monitor and manage power equipment in your physical or virtual environment keeping IT devices up and running during a power or environmental event. This innovative software solution ensures system uptime and data integrity by allowing you to remotely monitor, manage and control devices on your network. IPM provides a solution that is easy to use, maintains business continuity and allows you to do more with less.

Achieve more with less:

Reduce capital expenses



- Less initial upfront batteries: Achieve same amount of runtime with less batteries using load shedding.
- **Reduced battery replacement required:** Use fewer batteries to minimize future battery maintenance and replacement.
- Promote a greener environment: Consume less energy and recycle fewer batteries.

Maintain business continuity: Minimize operating expenses Virtual migration Virtual wir Vr Vr VM VM

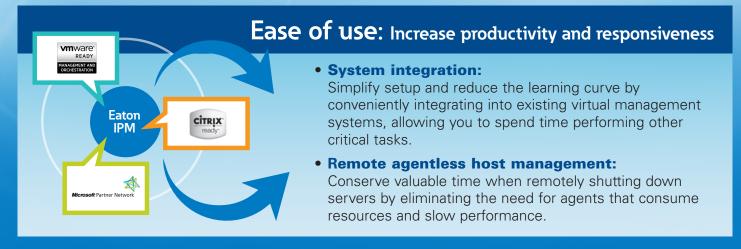
Intelligent load shedding:

Increase system uptime while extending battery runtime and minimizing generator load by suspending non-critical virtual machines.

• Site Recovery Manager failover: Avoid data loss and ensure data integrity at all times. Reduce data recovery expenses by synching primary and disaster recovery sites prior to power failures.

• Power capping on demand:

Keep critical workloads running longer during a power outage by limiting server power consumption.



Increasing level of control

Intelligent Power Manager (IPM) offers three versions—a basic edition, silver license and gold license. The gold license—our premium offering—provides the most complete set of capabilities including the ability to monitor and manage third-party power devices in addition to Eaton equipment.

Standard features	Basic	Silver	Gold
Number of nodes supported*	Up to 10	Up to 100	Over 100
Shut down server and host without crashing	Х	Х	Х
Shut down storage module to keep data safe	Х	Х	Х
Discover third-party devices from one dashboard	Х	Х	Х
Customize the data monitored from your device using generic drivers	Х	Х	Х
Group multiple devices to be acted on as a single device with configuration policies	Х	Х	Х
Take basic actions (server, host and storage shutdown)	Х	Х	Х
Plugin for VMware vCenter	Х	Х	Х
Plugin for Citrix XenCenter	Х	Х	Х

Virtualized features

Power equipment that IPM can monitor and manage**	Eaton only	Eaton only	Eaton and third-party
Enter and exit maintenance mode	Х	Х	x
Limit server power consumption to save on battery and fuel costs during a catastrophe by power capping on demand		Х	x
Shut down specific virtual machines during a power event no matter what physical machine they are on		Х	x
Migrate virtual machines to targeted hosts and shut down the non-critical server to conserve energy		Х	X
Shut down or suspend a virtual appliance		Х	x
Automatically back up data during a power event to avoid data loss using VMware Site Recovery Manager (SRM)		Х	x
Trigger an advanced action (power cap, load shed, failover) on configured policies (groups of devices) during specific power events with a single command		X	x
Control rack PDUs (on, off and reboot sections or outlets)		Х	X
Monitor and manage the health, risk and efficiency of your power infrastructure by integrating into VMware's vRealize Operations Manager		X	x
Safely shut down and securely restore high availability environments without crashing virtual machines or host server		X	x
OpenStack monitoring and control			x

*One licensed node is defined as a UPS, ePDU or IPM/IPP instance

**Power equipment includes UPSs, rack PDUs and rack ATSs

Intelligent Power Manager dashboard

iews 🔍 🖉	Node List									0	Selection view	
Views	Туре ч	Stat	Name	Description	Location	11		Battery capacity		Battery run time	Selection view 12	•
Node List	ijpo .	Ous.	10.130.19.4	Eaton 5PX 1500	91 Sort ascending		5%		100 %	42 min 46 s	Description	Eaton 9PX 50
Type : TPM			10.130.19.8	PKGX UPS + EATON 5115	Z Sort descending				100 %	6 h 42 min 51 s	Firmw are version	02.12.00
Type : 'POU' Type : 'UPS'		0			Columns	Rack []]]	0 %				Nominal active	4500
Status : 'Communication Los		0	10.130.19.5	Eaton 9PX 5000		V Status	35 %		100 %	14 min 29 s	pow er IP address	10.130.1
Status : "Critical"		0	10.130.19.7	Eaton 5P 850	Avery Creek	P address	0 %		100 %	2 h 03 min 20 s	Mac Address	00:20:85 F0:0C
G Status : "Ok"	0	0	10.130.19.3	Pow erw are 9130 1500	Avery Creek	Mac Address	3 %		100 %	6 h 25 min 48 s	Serial number	G204C38 Network Management Ca
Status : "Warning"		0	10.130.19.2/d0	ePOU MANAGED 21U-A IN L6-20P/		Description Serial number	1%			0 s	Class	The second second second
Type : "Virtual Machines"		0	10.130.19.61	VIMv are ESXi 5.5.0 build-2068190	10.130.19.60	[7] Class				0 s	Location	Avery Creek Demo R Ad
Type : "VM Host"		0	10.130.19.62	VIMw are ESXI 5.5.0 build-2068190	10.130.19.60	🔄 Version				0 s	Link	Ad
C Power Components	(iii)	0	Lab6 - High1	VIMv are VirtualMachine on 10.130	10.130.19.61	OS Type					Status	
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Location : 'Avery Creek'	10		Lab6 - Low 2		10 130 19 62	Condexel				0 s	Battery state	Charge
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BLocation : 'PCM19'		-	FILER	NetApp Release 8.1.3 7-Mode: Sat	. 10.130.18.02	Shutdown timer					Load level	35
Events List		0				Estimated runtime to shutdown Battery run time					Battery capacity	100 14 min 2
Events Calendar		0	Lab6-Terminal.pq.demo.com	Window's ND6.01.01		Shutdown duration				0 s	Battery run time Master output: Master	14 mil 2
3 Management 5		0	lab5-terminal.pg.demo.com	Window's NT/6.01.01		Master output						17.1
Nodes Settings		0	lab1-terminal.pq.demo.com	Window's NT/6.01.01	Forum	Power Source				0 s	Measures 14)
Rodes Upgrade		۲	acd-local.pq.demo.com	Windows NT/6.01.00		Cutlet group				0 s	Input	
Settings		0	lab2-terminal.pq.demo.com	Window's ND6.01.01		Access				0 s	Input frequency	59 Hz
Auto Discovery		0	10.130.19.100	Linux/2.6.32-504.12.2.el6.i686		Configuration policies list				0 s	Input voltage Bypass frequency	206 V 59 Hz
Actions / Events		0	sys/chassis-1/blade-8	UCS Blade server		-				0 s	Bypass voltage Bypass current	205 V 0 A
P Shuldow n		0	sys/chassis-1/blade-7	UCS Blade server						0 s	bypass current	0,4
Infrastructure Connectors Bystem		0	sys/chassis-1/blade-6	UCS Blade server							Output	
Log		0	sys/chassis-1/blade-5	UCS Blade server							Battery output voltage	195 V
Subor List		0	sys/chassis-1/blade-4	UCS Blade server							Output frequency Output voltage	59 Hz 207 V
		0	sys/chassis-1/blade-3	UCS Blade server							Output current	7 A
			sys/chassis-1/blade-2	UCS Blade server							Global apparent pow er Global active pow er	1.62 KVA 1.53 KW
			sys/chassis-1/blade-1	UCS Blade server								
		0	al around and manager (000 0000 00110							Consumption	
											Global - since 01/06/2016-10:47:0	7 am 1.5 KW
											Events 15	-
											Status Date	Message
											Ø 11/18/2015-3:54:16 pm	Communication failure will
											0 11/03/2015-11:24:48 am	Battery OK
	N 4 Pag	e 1 of	1 > > 2					Items per page		Displaying 1 - 27 of 27	() 11/03/2015-11:05:42 am	

Node list – List of all Eaton and thirdparty power equipment (with a gold license). Subviews show user-created node groups including nodes from a specific region, facility, floor or rack

Node map – Create custom maps of your environment to show all nodes in a visual format. Load a photo of your facility to see all nodes and create subviews for each floor using floor elevation

Events log – List or calendar views of all events on all devices or divided by subview

Management (Node settings) – Completely configure web card of selected node

Management (Configuration policies) – Group hosts, virtual machines or stand alone servers to be acted on as a single device (See actions/events #7 on how to benefit from this capability)

- 6 Settings (Auto discovery) Quickly find devices by scanning computer's subnet or user-specified IP addresses. Also prepare for an installation by creating a node for a device before it is installed
- Settings (Actions/Events) Trigger a preset action on a policy (group of nodes) during specific events. i.e. If your rack gets too hot, automatically power cap to bring down the temperature
- 8 Settings (Infrastructure connectors) Portal into virtualized equipment like VMware, Cisco UCS and Citrix
- 9 Settings (User list) Allow admin to have full control and create user accounts with view-only access
- **Events overview** Complete overview of all current events

- Customizable column layout Simply click on any column heading to add or remove columns to show only what you want to see
- **Selection view** Real-time characteristics of selected power device including serial number, firmware version and link to web card
- Status Provides live updates for the selected device including power source, load level and battery run time. Colored icons allow you to quickly see if the status is on (green), off (gray) or requires attention (red)
- Measures Shows live values of the selected UPS or rack PDU including input and output frequency, voltage and current as well as total power consumption

Events – Displays all events for the selected device including power failure and on or off battery. Data is exportable to .csv file

Download IPM at Eaton.com/downloads

Eaton IPM software licenses

Intelligent Power Manager – Silver license	Part #	
Support up to 100 licensed nodes	66925	
Intelligent Power Manager – Gold license	Part #	
Intelligent Power Manager – Gold license Support unlimited licensed nodes	Part # 66926	

On-site service offerings	Part #
IPM installation: One day on-site	SW06NXXX-001X
IPM installation: Two day on-site	SW06NXXX-002X
Power management assessmentSite assessment and disaster avoidance plan development	SW05NXXX-PRE
Software synchronization Annual software alignment refresh 	SW05NXXX-SYNC

Simplify power management

IPM simplifies power management across the network through a single, web-based interface, giving you up-to-the-minute information on the status of power in your network.

IPM provides additional management capability for HPE OneView and Cisco UCS environments. Integration with VMware vRealize Operations Manager and vCenter dashboard lets you manage power to your virtualized environment. Additionally, IPM works seamlessly with several virtualization platforms, such as Citrix[®] XenServer, Microsoft SCOM, Red Hat[®] and other Xen[®] open source platforms.

Validated alliance solution provider VMware Technology Alliance Partner **m**ware^{*} PARTNER Eaton's IPM and Infrastructure Management Pack for vRealize Operations Manager are SEMENT A VMware Ready for Orchestration and Management Global member of TSANET multi-vendor support community TSANET Eaton.com/VMware Cisco Preferred Solution and DevNet Partner uluilu cisco Cisco Compatible solution provider of Eaton enclosures and conversion kits for Nexus switches Preferred Cisco EnergyWise compliant managed rack PDUs Partne Eaton's IPM integrates directly with UCS server management to provide power-capping capability, enabling users to extend runtime by setting server consumption limits during Comp extended power outages Eaton.com/Cisco NetApp Alliance Partner NetApp Eaton's IPM integrates directly with NetApp ONTAP operating systems to provide supervision Alliance Partner and shutdown capability for FAS storage systems Reference designs and joint solution briefs for FlexPod systems Eaton.com/NetApp EMC Technology Connect Advantage Partner and Technology Connect EMC² VCE Technology Alliance Partner ADVANTAGE PARTNER Eaton's IPM, rack PDU and UPS are VSPEX Labs Validated and VCE vBlock ready certified EMC Published VSPEX reference designs, solution overview, and joint solution brief **VBLOCK** VSPEX L A B S Only power vendor with reference designs and joint solution brochure for VxRail Systems Eaton.com/EMC SimpliVity Alliance Partner simplivity P Eaton's Intelligent Power Manager, enclosures, rack PDUs and UPSs are SimpliVity Lab Validated Reference design and joint solution brief for OmniCube and OmniStack solutions Eaton.com/SimpliVity Nutanix Technology Alliance Partner Eaton's IPM, enclosures, rack PDUs and UPSs are Nutanix Ready for Applications and Operating Systems, and Back Up and Disaster Recovery Reference design and joint solution brief for Nutanix hyperconverged infrastructures Eaton.com/Nutanix

IT downtime for businesses







Size of business	Small (<100 employees)	Medium (100-1,000 employees)	Large (>1,000 employees)
Downtime events/year	1.7	3.5	3.0
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

Source: Zetta.net

Power outages cost both time and money

37% of IT professionals suffered an **unplanned outage** in the past 12 months

32% of respondents said those outages last **more than four hours**

34% manage racks in multiple locations or in a **colocation arrangement**

Source: Eaton and Tech Target survey: How "software defined" is redefining the data center

IPM prevents down time and saves you money

IPM Silver license pays for itself in as little as:



IPM Gold license pays for itself in as little as:



"All of the others say their software integrates into VMware, but when challenged and asked to demonstrate that in house, they couldn't do it. Eaton was the only one who could deliver." —Tom McNinch, Washington Unified School District IT manager

For more information, please visit: Eaton.com/IntelligentPower



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