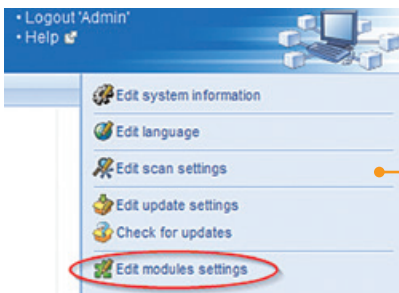
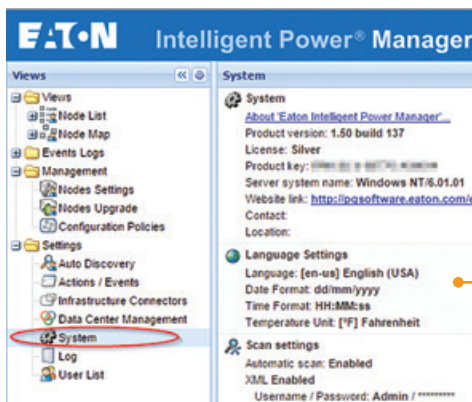


Configure Eaton IPM 1.5x to shut down vSphere 5.x/6.x

Eaton® Intelligent Power Manager (IPM) is the ideal agentless shutdown solution for your vCenter environment. This How-To will walk you through the process of linking IPM to your vCenter server. It will then show you how to configure IPM to shut down the environment using a trigger from an Eaton UPS.



1. Prerequisites

This how-to expects the user to have Eaton IPM v1.50 installed with their UPSs already configured as nodes. Please note that IPM 1.50 must be installed OUTSIDE the vSphere cluster (i.e. on a physical machine running a Windows OS) in order to properly orchestrate a complete vSphere shutdown (VMs and hosts). We are working on a version of IPM that will allow for a complete shutdown with a fully virtualized IPM and vCenter server. We expect the fully virtualized functionality to go live in IPM v1.51 in late 2015.

- VMware vCenter Server 5.5 or 6.0 should also be installed and functional.
- You will need to have an Eaton UPS installed with a NIC configured for your environment.
- Here is a video that walks through the IPM installation and setup process:

<http://powerquality.eaton.com/Videos/IPM-Basics.asp>

2. Navigate to the IPM System Settings Menu

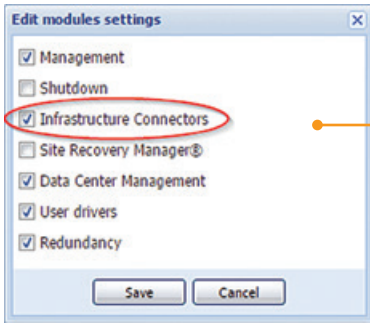
- Within IPM, you will need to enable the "Infrastructure Connectors" module.
- To do this, select "System" within the "Settings" menu tree.

3. Open the IPM Module Settings Editor

- Once on the system-settings page, click the link to "Edit modules settings" on the far right-hand side of the screen.

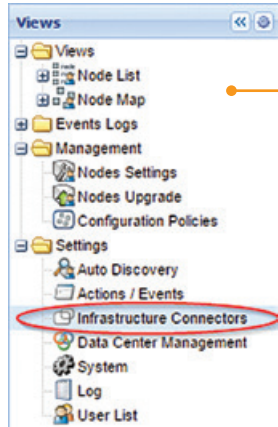


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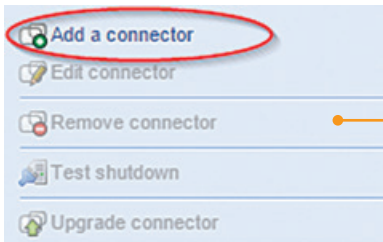
4. Turn on the Infrastructure Connectors Module

- Check the box beside “Infrastructure Connectors” then click save.



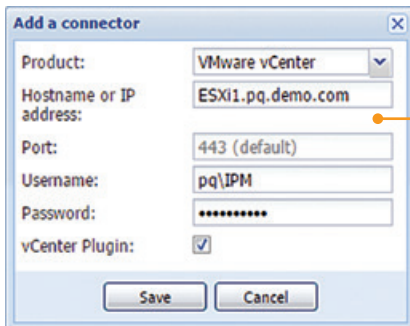
5. Open the Infrastructure Connectors Module

- Your left-side navigation tree will now have a selection option for “Infrastructure Connectors”.
- Click on this option to gain access to the infrastructure connectors module.



6. Add a Connector

- Within the infrastructure connector module, on the far right side of the screen, click the link to “Add a Connector”.



7. Select a product for this connection

- For the scope of this How-To, please select “VMware vCenter” as the product.
- Enter the vCenter server hostname or IP address. (Note: if entering the hostname, a fully qualified domain name is required.)
- Specify the vCenter port if changed from the default 443.
- Enter the username and password for a domain account with read/write access to the vCenter server. (Note: I created a domain account for a user named “IPM”. This account is only used for this linkage and allows for visibility within the vCenter logs.)
- Check the box beside vCenter Plugin to grant permission to IPM to install the IPM plug-in on the vCenter server. This plug-in will enable the Eaton tab in the C# client and the Eaton tiles on the web-client.

Hostname or IP address	Product	Plugin State	Connection State
Product: New VMware vCenter (1 Item)			
10.130.19.20	New VMware vCenter	✓	✓
Product: VMware ESX/ESXi through vCenter (5 Items)			
10.130.19.20	VMware ESX/ESXi through vCenter	✓	✓
10.130.19.21	VMware ESX/ESXi through vCenter	✓	✓
10.130.19.22	VMware ESX/ESXi through vCenter	✓	✓
10.130.19.32	VMware ESX/ESXi through vCenter	✓	✓
10.130.19.41	VMware ESX/ESXi through vCenter	✓	✓

8.

Confirm the connector state

- Once the connector form is complete and saved, you will be delivered back to the Infrastructure Connectors module.
- IPM will go through the connector installation and verification, providing you updated through the state-badges.
- Wait here until all states turn green.
- If you have trouble, please contact us directly at 800-356.5737 option 2, 5, 1 for troubleshooting.

Hostname or IP address	Product	Plugin State	Connection State
Product: New VMware vCenter (1 Item)			
10.130.19.20	New VMware vCenter	✓	✓
Product: VMware ESX/ESXi through vCenter (5 Items)			
10.130.19.20	VMware ESX/ESXi through v...	✓	✓
10.130.19.21	VMware ESX/ESXi through v...	✓	✓
10.130.19.22	VMware ESX/ESXi through v...	✓	✓
10.130.19.32	VMware ESX/ESXi through v...	✓	✓
10.130.19.41	VMware ESX/ESXi through v...	✓	✓

9.

Build a Host Shutdown Configuration Policy

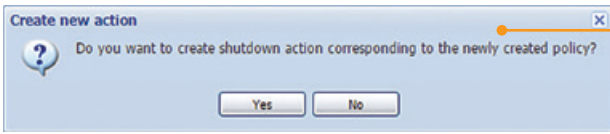
- While still inside the “Infrastructure Connectors” section of the Settings menu, select all hosts you wish to include in the Shutdown Configuration Policy. Multi-select hosts by holding the control key during clicks.
- Once one or more nodes has been selected, the “Create Shutdown Policy” link will enable. Click this link to proceed to the next step.

Class	Date	Value	Edit
Runtime threshold settings	Time	600 s	✎
Runtime threshold settings	Remaining Time Limit	120 s	✎
Runtime threshold settings	Remaining Capacity Limit	20 %	✎
Runtime threshold settings	Shutdown Duration	120 s	✎
Power Source	Power Source*	at0-0p0h-p0-n	✎
Power Source	Load Segment*	Master output	✎

10.

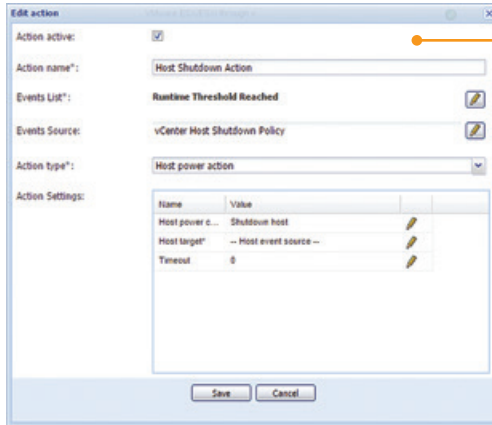
Complete the Policy

- Name the policy something applicable to its purpose. You will notice that all hosts selected in the previous step have been automatically added to the policy.
- “Timer” is defined as the amount of time after the policy is triggered that IPM will wait before allowing any action to take place. In this example, the Timer value has been set to 10 minute (600 seconds). In a later step, we will link a UPS event to a shutdown action that will be governed by this policy.
- “Remaining Time Limit” is the estimated runtime remaining in the batteries. This parameter should be set to the longest amount of time it takes to perform the shutdown. It is a failsafe to ensure the UPS does not run out of stored energy during a shutdown condition.
- “Remaining Capacity Limit” is similar to “Remaining Time Limit” in that it refers to the energy remaining in the batteries. The common use case for Remaining Capacity Limit is to prevent a system restart on a UPS with insufficient stored energy to complete a shutdown sequence. For example, if it takes 30% of the UPS stored energy to completely shut down the system then any battery capacity of less than 30% would result in a crash. This could happen if the facility experienced two consecutive power failure events.
- “Shutdown Duration” is defined as the amount of time it takes to complete the desired action, be it a shutdown or otherwise.
- “Power Source” is defined as the UPS physically powering the devices listed in the “Target Nodes” section.
- “Load Segment” allows the policy to know specifically into which outlets of the UPS the host is connected. This can be used to boot a server by leveraging the BIOS setting “boot on return of power”.
- Click “Save” once all parameters are correctly configured.



11. Initiate Action Creation

- Clicking “Yes” on this step will automate the linkage of the previously created policy to a UPS generate event.



12. Complete the Host Shutdown Action

- Here is the action immediately after clicking “yes” in the previous step with the exception that I have changed the name for clarity.
- The action was automatically linked to the “Runtime Threshold Reached” event. Actual timing for this will be based on the times specified in the “vCenter Host Shutdown Policy”.
- The “vCenter Host Shutdown Policy” was automatically added as the “Event Source”. This is what imports all the parameters from the policy into the action.
- The “Action Type” has been automatically set to “Host power action”. The parameters within “Action Settings” are the result of the selected Action Type.
- “Host power command” was automatically set to “Shutdown host”. The timing of the power command was defined in the “vCenter Host Shutdown Policy”.
- “Host target” was automatically set to use the policy selected in the Event Source.
- “Timeout” is a failsafe that can be used to crash any VMs that fail to shut down within the allowed window. This makes it possible to gracefully shut down the host even if a VM hangs up.

Conclusion

By following the steps of this guide, users will successfully create a protection plan that will gracefully shut down all VMs and hosts managed by the vCenter linked to IPM. This plan will be triggered if the Eaton UPS protecting the hardware reaches the critical run time as defined by the user.

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

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