

## Please follow the steps listed below to configure Eaton Intelligent Power Manager (IPM) for use with vSAN systems to provide graceful shutdown.

**Eaton's Intelligent Power Manager is a proven leader in IT power protection.** Users of HyperConverged Infrastructure (HCI) are asking for the power management SW to be within the cluster and require graceful shutdown to ensure the HCI devices and clusters are properly shutdown to avoid unnecessary, lengthy start-up issues. This is extremely useful for management of IT and power devices at remote sites, including retail.

**In this document, we show the user how to configure IPM for shutdown of a vSAN cluster.** You will see that IPM has a secure connector, providing secure authentication and communication between itself and the cluster. We strive to simplify the set-up with automatic detection of IPM and vCenter, and automated settings updates with vSphere and vCenter.

### 1 vSAN clusters shutdown scenarios

**Eaton Intelligent Power manager is compatible with VMware vSAN cluster for virtual asset monitoring and Cluster power action.**

Two types of cluster configuration are supported for cluster shutdown action:


- vSAN cluster without critical VMs (IPM and VCSA outside the cluster)
- vSAN cluster with critical VMs (IPM or VCSA embedded in the cluster)

#### Configuration 1: IPM and vCenter outside the cluster

<p><b>PRE-REQUISITE:</b></p> <ul style="list-style-type: none"> <li>• Shutdown Management VMs (IPM and vCenter) out of the cluster</li> <li>• vSAN Stretched Cluster not supported</li> </ul>	<p><b>SHUTDOWN WORKFLOW without critical VMs (HA disabled):</b></p> <ul style="list-style-type: none"> <li>• Guest shutdown of all VMs</li> <li>• Once <b>VM shutdown timeout</b> has been reached IPM will put host in maintenance mode with <b>No Action</b> option for all ESXi in sequential order</li> <li>• Shutdown all ESXi hosts</li> </ul>	<p><b>STARTUP:</b></p> <ul style="list-style-type: none"> <li>• Customer exit ESXi from maintenance mode</li> <li>• Customer Power On VMs</li> </ul>
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#### Configuration 2: IPM and vCenter embedded in the cluster

<p><b>PRE-REQUISITE:</b></p> <ul style="list-style-type: none"> <li>• The vCenter appliance (VCSA) and/or IPM are hosted in the cluster to shutdown</li> <li>• We recommend hosting these two appliances on the same ESXi</li> <li>• vSAN Stretched Cluster not supported</li> </ul>	<p><b>SHUTDOWN WORKFLOW:</b></p> <p><b>Parameters:</b></p> <ul style="list-style-type: none"> <li>• A list of critical VMs. Critical VMs will be shutdown at the end of the shutdown scenario. ESXi IPM and VCSA are automatically added to this list.</li> <li>• vmShutdownTimeout: the delay (in second) IPM will wait for the VMs to shutdown</li> <li>• vmMigrationTimeout: the delay (in second) IPM will wait for the critical VMs to migrate to the "ultimate" ESXi. It's important to evaluate the right value for this parameter (the time used to migrate all critical VMs).</li> </ul> <p><b>Scenario:</b></p> <ul style="list-style-type: none"> <li>• Disable DRS</li> <li>• Disable HA</li> <li>• Shutdown all non-critical VMs</li> <li>• Wait for all the VMs to be shutdown until the delay expires</li> <li>• If some non-critical VMs are still up, then power them off</li> <li>• Determine the "ultimate ESXi"; generally the ESXi hosting the VCSA</li> <li>• Migrate the critical VMs to the "ultimate ESXi"</li> <li>• Wait for delay "vmMigrationTimeout"</li> <li>• Redefine the auto-start list of all ESXis (except the "ultimate") with no VMs</li> <li>• Redefine the auto-start list of the "ultimate ESXi" with the critical VMs</li> <li>• Set the VSAN storage policy FTT (Faults To Tolerate) to 0.</li> <li>• Shutdown all ESXis except the "ultimate"</li> <li>• Shutdown the "ultimate ESXi"</li> </ul>
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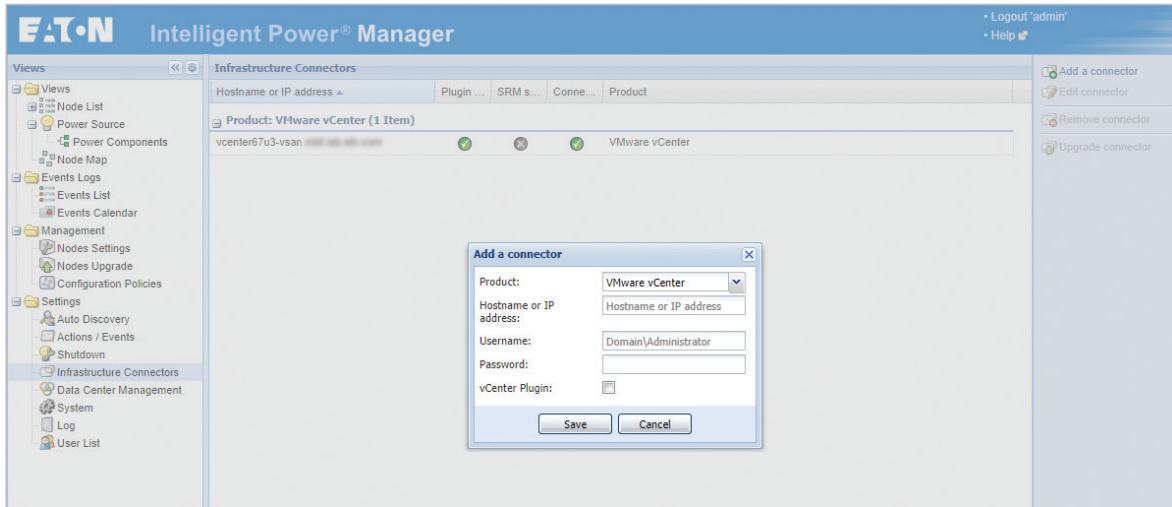
 <p>Powering Business Worldwide</p>	<p><b>STARTUP:</b></p> <p><b>Automatic startup:</b></p> <ul style="list-style-type: none"> <li>• Only the critical VMs are restarted on the "ultimate ESXi"</li> <li>• Enable HA (if IPM has disabled it)</li> <li>• Enable DRS (if IPM has disabled it)</li> <li>• Reset the vSAN storage policy FTT to the previous value</li> </ul>	<p><b>Manual operations:</b></p> <ul style="list-style-type: none"> <li>• Restart the non-critical VMs</li> </ul>
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## 2 Configure cluster shutdown action

### PRE-REQUISITE:

Create the VMware vSAN infrastructure connector in IPM:

Infrastructure Connectors				
Hostname or IP address ▲	Plugin S...	SRM state	Connecti...	Product
Product: VMware vCenter (1 Item)				
vcenter67u3-vsan.mbit lab.ats.com	✓	✗	✓	VMware vCenter



After the connector creation all virtual assets managed by the connector are retrieved in the node list: Cluster, ESXi, and VMs

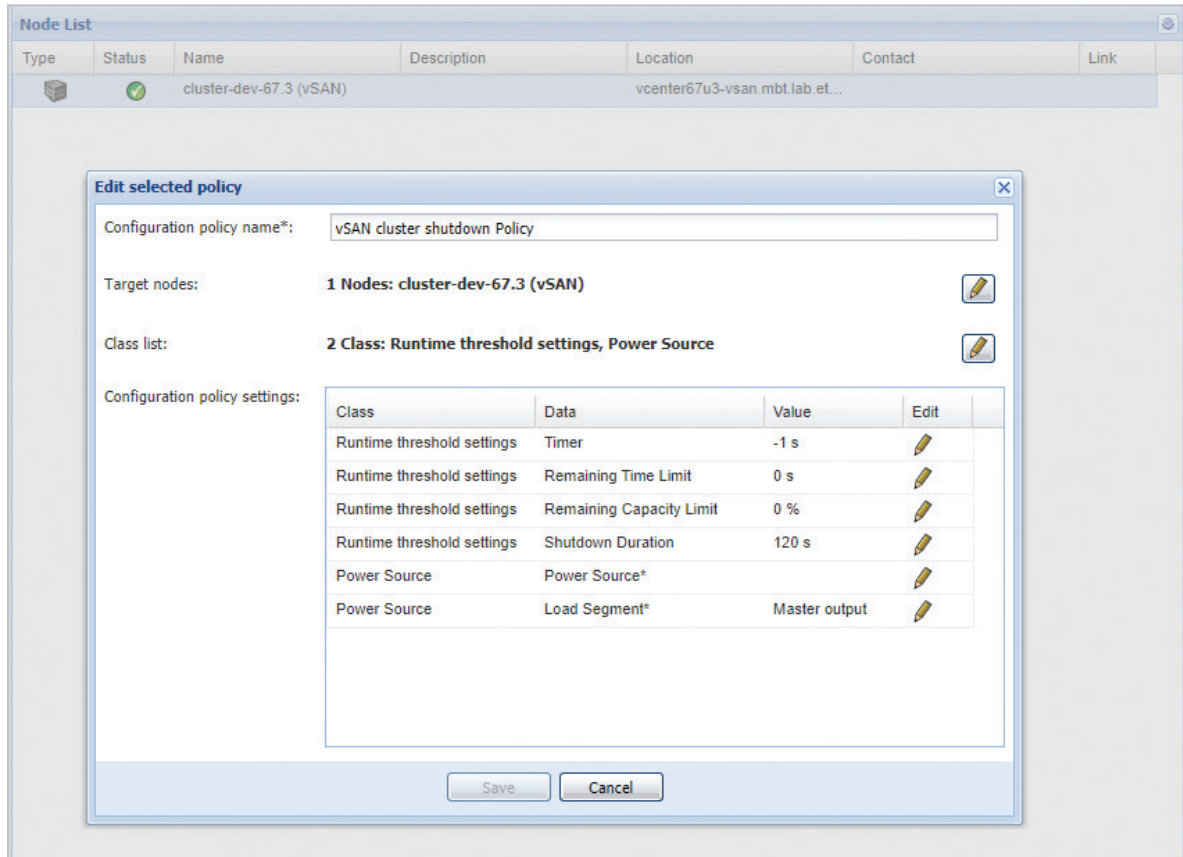
Type ▲	Status	Name	Location
Cluster	✓	cluster-dev-67.3 (vS...	vcenter67u3-vsan.mbit lab.ats.com
ESXi	✓	vesxi67-09.m...	vcenter67u3-vsan.mbit lab.ats.com
ESXi	✓	vesxi67-01	vesxi67-09.mbit lab.ats.com
ESXi	✓	Debian 8 - 02	vesxi67-09.mbit lab.ats.com
ESXi	✓	Debian 8 - 03	vesxi67-07.mbit lab.ats.com
ESXi	✓	Debian 8 - 04	vesxi67-08.mbit lab.ats.com
ESXi	✓	Empty 01	vesxi67-07.mbit lab.ats.com
ESXi	✗	IPM 1.68.244 Win10	vesxi67-09.mbit lab.ats.com
ESXi	✗	VA64_OVF10	vesxi67-09.mbit lab.ats.com
ESXi	✓	vcenter67u3-vsan	vesxi67-08.mbit lab.ats.com
ESXi	✓	vesxi67-07	vcenter67u3-vsan.mbit lab.ats.com
ESXi	✓	vesxi67-08	vcenter67u3-vsan.mbit lab.ats.com
ESXi	✓	vesxi67-09	vcenter67u3-vsan.mbit lab.ats.com

Status	Date	Message
✓	12/06/2020-11:05:38	Communication restored
✓	12/06/2020-11:05:38	Communication with device is re...

## Action configuration: apply to any vSAN cluster configurations (IPM and VCSA embedded or not in the cluster)

### 1 – CREATE A SHUTDOWN POLICY FOR THE CLUSTER



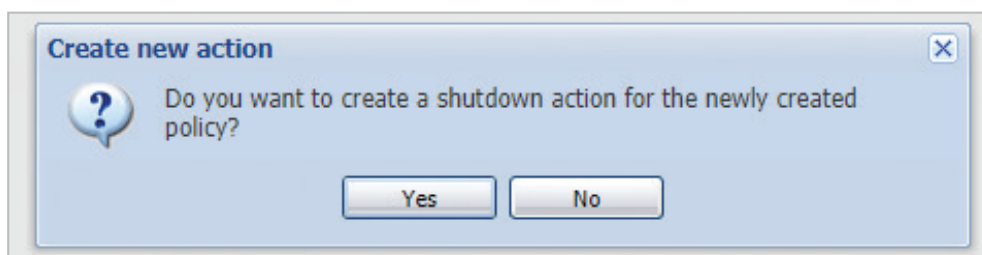
The user must provide a name for the configuration policy. In this case, it is named 'vSAN cluster shutdown policy' as shown in the first line of the policy set up screen. To select the Target node, click on edit (the pencil icon) then select the cluster. The cluster name 'cluster-dev-67.3 (vSAN)' is provided by the user after the vCenter Connector is activated.

For Class list, select both 'Runtime threshold settings' and 'power source'.

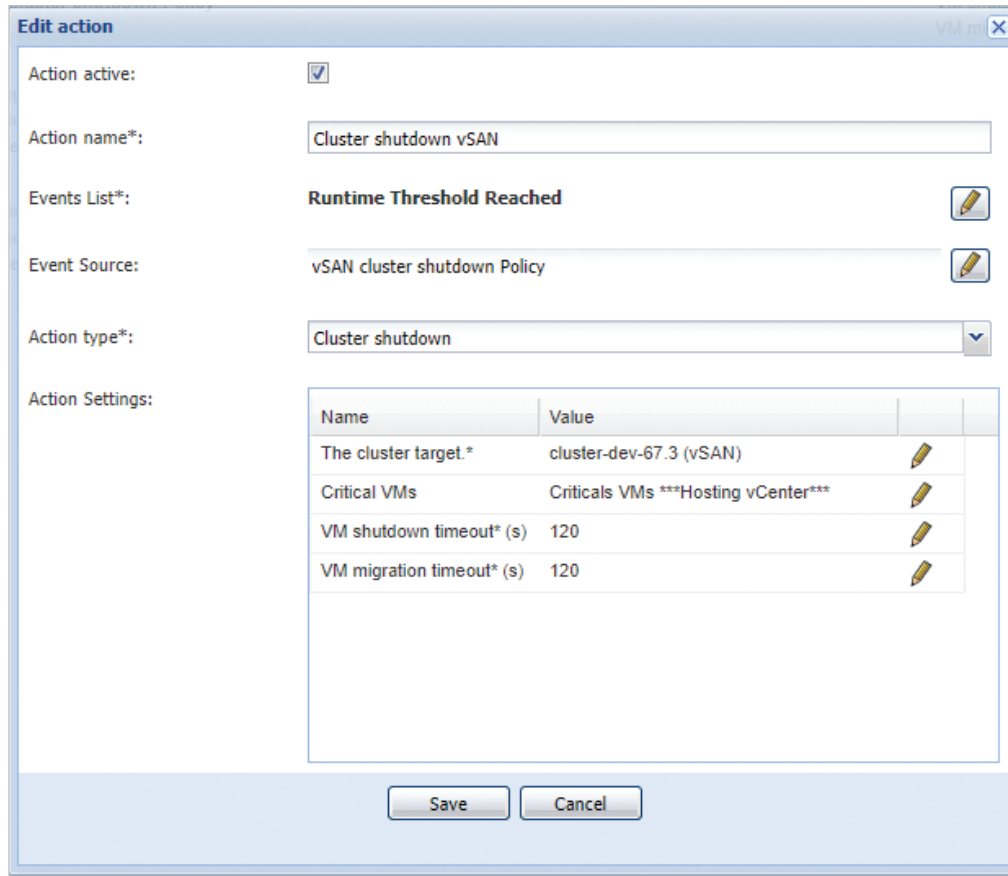
You will see four items in runtime threshold settings. They run in parallel, the first one that becomes true will trigger the event. Timer: set amount of time to elapse after event (a negative number disables the timer). Remaining battery can be set either with percentage of battery remaining or time of battery remaining. Shutdown duration is the amount of time it takes to perform the shutdown action. This will be the default.

The power source is the UPS that registers the event. If an action is to be taken for a power outage, the UPS will provide the notification of the power loss event.

Save the policy. IPM will then prompt the user to develop a shutdown action for this policy, as shown below:

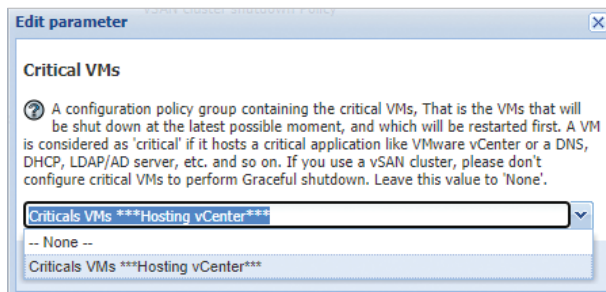


## 2 – CONFIGURE THE SHUTDOWN ACTION (SAME PROCESS FOR VSAN CLUSTER CONFIGURATIONS)



User must configure the following information:

- The user must provide a name for the shutdown action. In the screenshot above, the action is called 'Cluster shutdown vSAN'.
- Event source: Action is linked to the shutdown policy previously created by default, but it can be changed by the user
- Action Type: select 'Cluster Shutdown'
- Action settings :
  - Cluster Target: select the vSAN cluster to shutdown, in this case it is 'cluster-dev-67.3 (vSAN)'
  - Critical VM: (not mandatory)
    - IPM will detect the IPM VM and VCSA, and add them to the list of critical VMs to shutdown
    - If other VMs should be considered as Critical, the user must create a configuration policy on these VMs; then select the policy as a Value in critical VMs field :



- Then user must configure the timeout duration for:
  - VM shutdown action
  - VM migration action
- Save action

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