

IBM System x IBM Upward Integration for VMware vSphere Installation and User's Guide

Version 3.0.1



IBM System x IBM Upward Integration for VMware vSphere Installation and User's Guide

Version 3.0.1

Note

Before using this information and the product it supports, read the information in "Notices" on page 69.

Edition Notice

This edition applies to version 3.0.1 of IBM Upward Integration for VMware vSphere and to all subsequent releases and modifications until otherwise indicated in new editions.

© Copyright IBM Corporation .

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Figures	v
Tables	vii
About this publication	
Conventions and terminology	ix
Information resources	xi
PDF files	
World Wide Web resources	xi
Chapter 1. IBM Upward Integration for	
VMware vSphere	1
Dashboard	. 1
Dynamic System Analysis	. 1
Dynamic System Analysis	. 2
Power Metric	. 2
Advanced Settings Utility	. 2
Predictive Failure Management	. 2
Chapter 2. Installing IBM Upward	
Integration for VMware vSphere	3
System requirements for IBM Upward Integration for	
VMware vSphere	
Supported VMware vCenter Server.	. 3
Supported operating systems	. 3
Supported hardware	. 4
Installing IBM Upward Integration for VMware	
vSphere	. 5
Installing the IBM License Tool and activating the	
	. 7
Installing and removing the IBM Upward Integration	
for VMware vSphere Provider bundle	. 7
Installing the IBM Upward Integration for	
VMware vSphere provider bundle using VMware	
Update Manager	. 8
Installing the IBM Upward Integration for	
VMware vSphere bundle using VMware vSphere	0
	. 8
Installing the bundle on a host using the IBM	0
customized ESXi 4.1 image	. 8
	. 9
Removing the bundle using VMware vSphere	.)
	10
Removing the bundle on a host by using the	10
IBM customized ESXi 4.1 image	10
Removing the bundle on a host by using the	10
IBM customized ESXi 5.x image	10

Chapter 3. Using IBM Upward Integration for VMware vSphere with	10
vSphere Web Client	
Managing clusters	. 13
Working with the Cluster Overview function .	. 13
Requesting host access.	. 14
Requesting IMM access using the Cluster	
Overview function	. 15
Working with the IMM Discovery function	. 16
Requesting IMM access using the IMM	
Discovery function	. 17
Working with the Rolling System Update	
function	. 18
Configuring the Rolling System Update	
preferences	. 18
Specify the update repository location .	. 18
Checking for updates automatically	. 19
Checking for updates manually	. 19
Managing the Rolling System Update tasks.	. 19
Creating a task	. 21
Editing a not-started task	. 22
Deleting a task	. 22
Deleting a task	. 23
Rerunning a failed task	. 23
Cloning a completed task	. 23
Viewing reports of tasks	. 24
Working with Predictive Failure Management .	. 25
Setting a new policy	. 25
Event categoriesEvent severity	. 26
Event severity	. 27
Editing a policy	
Disabling a policy	. 28
Viewing Predictive Failure Alert events and	
the Action History table	. 28
Managing servers	. 29
Working with the System Analysis	. 29
Viewing System Overview	. 29
Launching the system diagnostic collection .	. 30
Viewing categorized analysis results for the	
vSphere Web Client	. 31
Working with Alerts and Events	. 31
Working with Firmware Updates	
Prerequisites for updating firmware	
Selecting update preferences	. 33
Firmware update scenarios	. 34
Recommended Updates (UXSP)	. 34
Individual Updates	. 36
Working with Power and Cooling on the vSpher	
Web Client	
Power Metric page	
Enabling and disabling power monitoring .	. 38
Setting Power Capping	. 38
Setting Power Throttling	. 39

Viewing Power Usage History, Therm	al	Us	age	2
History, and Fan Usage History on the	е			
vSphere Web Client				. 39
Working with Configuration				. 42
Viewing Advanced System Settings .				
Changing Advanced System Settings .				. 43
Managing hardware events				
Prerequisites				
Events				
Alarms				

Chapter 4. Using IBM Upward Integration for VMware vSphere with

5	
vSphere Client	47
Working with the Dashboard	. 47
System Information Summary	. 47
The System Health, Power Throttling, and	
Predictive Failure Alert Summaries	. 48
Working with Dynamic System Analysis	. 49
Working with Firmware Updates	. 49
Prerequisites	. 50
Firmware update scenarios	. 50
Updating a remote server from the IBM	
website	. 50
Updating a remote server from a local	
directory	. 54
Working with Power Metric	. 54
Enabling and disabling Power Metric	. 54
Viewing the power usage, thermal history, and	
fan summary	. 55

Setting Power Throttling	. 55 . 57 . 58
Appendix A. Troubleshooting	63
Help information	
	. 63
Site certification	
First time loading page	
	. 63
	. 64
	. 64
Installed version field shows Undetected in	
firmware updates	. 65
Connection to the plug-in	. 65
	. 65
Appendix B. Accessibility features	67
Notices	69
Trademarks	
Important notes	
Index	73

Figures

1.	VMware vCenter server configuration	. 6
2.	Cluster Overview	14
3.	IMM Discovery	16
4.	Requesting IMM access on the IMM Discovery	
	page	17
5.	Task Manager	20
6.	Rolling System Update Wizard	21
7.		26
8.		28
9.		30
10.	Viewing categorized analysis results	31
11.	Viewing Alerts and Events	32
12.	Update Preferences page	33
13.	Recommended Updates Wizard - Check	
	Compliance dialog box	35
14.	Check Compliance complete	35
15.	Recommended Updates wizard - updating	
	firmware	36
16.	Power Metric page	37
17.	Setting Power Capping on the vSphere Web	
	Client	38
18.	Setting Power Throttling on vSphere Web	
	Client	39
19.	Power Usage History for vSphere Web Client	40
20.	Thermal Usage History for vSphere Web Client	41

21.	Fan Usage History for vSphere Web Cli	ent		41
22.	Viewing IMM Port Assignments			42
23.	Viewing Boot Order.			43
24.	Setting change success symbol			43
25.	Setting change not success symbol			43
26.	Viewing IMM Alerts			44
27.	System Health Summary Dashboard vie	ew		48
28.	Updates page			50
29.	Update Recommendation example			51
30.	Acquire Updates			52
31.	Update Authentication page			52
32.	Update execution page			53
33.	All updates successfully applied			53
34.	Enabling Power Metric			55
35.	Power Usage Chart			56
36.	Thermal History Chart			56
37.	Fan Chart			57
38.	Setting Power Capping			57
39.	Set Power Throttling			58
40.	Power Throttling Indications			58
41.	Viewing Advanced System Settings .			59
42.	Setting not supported symbol			59
43.	Setting change is successful symbol .			60
44.	Setting change is not successful symbol			60
45.	Changing Advanced System Settings .			60

Tables

- Frequently used terms and acronyms ix 1.
- 2.
- 3.
- 4. Predictive Failure Alert Event categories 26
- 5. Predictive Failure Alert severity levels . . . 27

About this publication

This book provides instructions for installing IBM Upward Integration for VMware vSphere v3.0.1 and using the features to acquire system information, update firmware, monitor power usage, configure system settings, and create migration rules for the virtual machine in the VMware vCenter management environment.

Conventions and terminology

Paragraphs that start with a bold **Note**, **Important**, or **Attention** are notices with specific meanings that highlight key information.

Note: These notices provide important tips, guidance, or advice.

Important: These notices provide information or advice that might help you avoid inconvenient or difficult situations.

Attention: These notices indicate possible damage to programs, devices, or data. An attention notice appears before the instruction or situation in which damage can occur.

The following table describes some of the terms, acronyms, and/or abbreviations used in this document.

Table 1. Frequently used terms and acronyms

Term/Acronym	Definition
ASU	Advanced Settings Utility
DSA	IBM Dynamic System Analysis
IMM	Integrated Management Module
IVP	IBM Upward Integration for VMware vSphere
PFA	Predictive Failure Alert
UXSP	UpdateXpress System Packs
UXSPi	UpdateXpress System Package Installer

Information resources

You can find additional information about IBM Upward Integration for VMware vSphere, Version 3.0.1 in the product documentation and on the World Wide Web.

PDF files

View or print documentation that is available in Portable Document Format (PDF).

Downloading Adobe Acrobat Reader

You need Adobe Acrobat Reader to view or print these PDF files. You can download a copy from the Adobe website.

Viewing and printing PDF files

You can view or print PDF files that can be found on the web pages listed in "World Wide Web resources."

World Wide Web resources

The following web pages provide resources for understanding, using, and troubleshooting IBM System x, BladeCenter servers, and systems-management tools.

IBM Upward Integration for VMware vSphere site

IBM Upward Integration for VMware vSphere site

Locate the latest downloads for the IBM Upward Integration for VMware vSphere.

IBM Systems Technical support site

IBM Systems Technical support site

Locate support for IBM hardware and systems-management software.

IBM Systems Management Software: Download Software Registration site

IBM Systems Management Software: Download/Registration site

Download IBM systems-management software, including IBM Systems Director.

IBM[®] Systems Management site

IBM System x Systems Management site

This page provides an overview of IBM Systems Management using IBM Director Agent or IBM Director Core Services.

$\ensuremath{\mathsf{IBM}}$ System x ServerProven $^{\ensuremath{\mathsf{e}}}$ and BladeCenter ServerProven sites

System x ServerProven site

BladeCenter ServerProven site

Obtain information about hardware compatibility with IBM System x, IBM BladeCenter, and IBM IntelliStation[®] hardware.

VMware vCenter Product Family site

VMware vCenter Product Family site

Chapter 1. IBM Upward Integration for VMware vSphere

The topics in this section provide information about IBM Upward Integration for VMware vSphere.

The IBM Upward Integration for VMware vSphere is an extension to the VMware vCenter and provides system administrators with enhanced management capabilities on IBM System x servers, BladeCenter servers and Flex systems. IBM Upward Integration for VMware vSphere expands the management capabilities of VMware vCenter by integrating IBM hardware management functionality and provides the following features:

- Dashboard
- Dynamic System Analysis
- Firmware Update
- Power Metric
- · Advanced System Settings
- Predictive Failure Management

To provide the enhanced management features on the managed ESXi endpoints, IBM Upward Integration for VMware vSphere relies on a component called the Provider bundle. This component must be installed on the ESXi host manually for all management functions of the IBM Upward Integration for VMware vSphere to be available. The Provider bundle is contained in the offline-bundle.zip file, located in the IBM Upward Integration package.

Dashboard

The Dashboard provides an overview of the selected host or cluster. It displays summary information including overall resource utilization, hosts health messages and connection status. It also displays the IMM information for each host and allows you to launch the IMM console directly.

Dynamic System Analysis

Dynamic System Analysis is a tool that collects and analyzes system information to aid in diagnosing system problems.

Firmware Update

The firmware update function acquires and applies IBM UpdateXpress System Packs (UXSPs) and individual updates to the ESXi system. The Rolling System Update function provides non-disruptive system updates with zero downtime, automates the update process of the hosts in a cluster environment without any workload interruption, and supports updating multiple hosts concurrently to save time.

Power Metric

To aid in balancing workloads on hosts, the Power Metric feature monitors power usage, thermal, and fan speed values of the ESXi host and graphically displays this information. Power Metric provides power capping and power throttling features. Power capping allows you to allocate less power and cooling to a system. Power throttling allows you to receive an alert after power consumption exceeds the value you set.

Advanced Settings Utility

Advanced Settings Utility provides a system settings management interface through which you can view and configure frequently-changed settings, such as those for IMM, uEFI, and boot order, on the managed endpoint. To change unsupported settings in IBM Upward Integration for VMware vSphere, use the IMM and uEFI interfaces.

Predictive Failure Management

The predictive failure management feature monitors the server hardware status and automatically evacuates virtual machines in response to predictive failure alerts to protect your workloads.

Chapter 2. Installing IBM Upward Integration for VMware vSphere

The topics in this section provide information about installing IBM Upward Integration for VMware vSphere.

System requirements for IBM Upward Integration for VMware vSphere

IBM Upward Integration for VMware vSphere is an extension to the vCenter server. It must be installed on the server that has VMware vCenter installed.

Supported VMware vCenter Server

The IBM Upward Integration for VMware Vsphere plug-in is an extension to the VMware vCenter Server. It supports VMware vCenter Server 4.1, 5.0, 5.1, and 5.5.

Supported operating systems

The IBM Upward Integration for VMware vSphere plug-in supports the same operating systems as VMware vCenter.

The following operating systems are supported:

- Windows Server 2003 SP2/R2 x64 (Enterprise Edition, DataCenter)
- Windows Server 2008 SP1/SP2 x64 (Enterprise Edition, Standard Edition)
- Windows Server 2008 R2 SP1
- Windows Server 2012

Supported ESXi version

IBM Upward Integration for VMware vSphere supports IBM customized ESXi 4.1, 5.0, 5.1 and 5.5 images. You can download IBM customized ESXi images from IBM x86 solutions for VMware: http://www-03.ibm.com/systems/x/os/vmware/.

For generic VMware ESXi, you need to download and install IBM Customization for ESXi offline bundles on Fix Central to enable all management functions. Without the offline bundles being installed, IBM Upward Integration for VMware VSphere provides limited management functionality. It is recommended that you update to the latest patch version on each managed ESXi host at your earliest convenience. You can find VMware vSphere ESXi with IBM Customization offline bundles and patches at Fix Central.

Supported hardware

This topic provides information about the supported hardware for IBM Upward Integration for VMware vSphere.

The plug-in does not have hardware limitations. However, the hardware that the plug-in manages is limited to the IBM System x and Blade servers listed in the following table.

System	Server number
System x Server	dx360 M2 (7321, 7323)
	dx360 M3 (6391)
	dx360 M4 (7912, 7913, 7918, 7919)
	nx360 M4 (5455)
	Smart Analytics System (7949)
	x3100 M4 (2582)
	x3200 M2 (4367, 4368)
	x3200 M3 (7327, 7328)
	x3250 M2 (7657, 4190, 4191, 4194)
	x3250 M3 (4251,4252,4261)
	x3250 M4 (2583)*
	x3250 M5 (5458)
	x3300 M4 (7382)
	x3400 M2 (7836, 7837)
	x3400 M3 (7378, 7379)
	x3500 M2 (7839)
	x3500 M3 (7380)
	x3500 M4 (7383)
	x3530 M4 (7160)
	x3550 M2 (7946, 4198)
	x3550 M3 (7944, 4254)
	x3550 M4 (7914)
	x3620 M3 (7376)
	x3630 M3 (7377)
	x3630 M4 (7158, 7518, 7519)
	x3650 M2 (7947, 4199)
	x3650 M3 (7944, 7945, 4254, 4255, 5454)
	x3650 M4 (7915)
	x3650 M4 HD (5460)
	x3650 M4 BD (5466)
	x3750 M4 (8722, 8733)
	x3755 M4 (7164)
	x3690 X5 (7148, 7149, 7147, 7192)
	x3850 X5/X3950 X5 (7145, 7146, 7143, 7191)

Table 2. Supported hardware

System	Server number
	x3850 X6 (3837)
Flex Compute Node	Flex System x220 Compute Node (7906, 2585)
	Flex System x222 Compute Node (7916)
	Flex System x240 Compute Node (8737, 8738, 7863)
	Flex System x440 Compute Node (7917)
Blade System	HS22 (7870, 7809, 1911, 1936)
	HS22V (7871, 1949)
	HS23 (7875, 1882, 1929)
	HS23E (8038, 8039)
	HX5 (7872, 7873, 1909, 1910)

* x3250M4 2583 supports only partial functions in the Dashboard and Dynamic System Analysis; update, power, and system configuration functions are not supported.

Installing IBM Upward Integration for VMware vSphere

IBM Upward Integration for VMware vSphere must be installed on a server that has VMware vCenter installed, or the installation will fail.

Before you begin

Administrator privileges are required to install IBM Upward Integration for VMware vSphere.

About this task

IBM Upward Integration for VMware vSphere can be accessed with either vSphere client or vSphere Web Client, depending on the VMware vCenter version.

For VMware vCenter 5.0 and the previous version, you can only access the plug-in with vSphere client. For more information, see Chapter 4, "Using IBM Upward Integration for VMware vSphere with vSphere Client," on page 47.

For VMware vCenter 5.1, when you install the plug-in, you can choose to access it with either vSphere client or vSphere Web client. It is recommended that you access the plug-in with vSphere Web client, IBM Upward Integration for VMware vSphere integrated with vSphere Web Client provides better usability and performance. For more information, see Chapter 3, "Using IBM Upward Integration for VMware vSphere with vSphere Web Client," on page 13.

Procedure

- 1. Extract the files from the downloaded IBM Upward Integration for VMware vSphere installation package.
- 2. Double click ibm_sw_vmuim_3.0_windows_64.exe to launch the installer.
- 3. Click **Next** on the startup page of the installer.
- 4. Read and agree to the IBM Upward Integration for VMware vSphere license.
- 5. Select the destination folder for installing IBM Upward Integration for VMware vSphere, then click **Next**.
- 6. Input your **user** and **company** information.
- 7. Click **Confirm** to install. The installation process begins.
 - During the installation process, IBM UIM Unified Service will be launched and installed, for details refer to the *IBM UIM Unified Service User's Guide*.

After the installation is complete, the configuration starts.

8. Enter the VMware vCenter server information and connection information for the product.

	r Server information		
P Address:			
lsername:			
assword:		_	

Figure 1. VMware vCenter server configuration

- In the **IP Address** field, enter the IP address of the management network (used to connect to the vCenter server).
- In the **Username** and **Password** fields, provide a user name and password that has administrative credentials to manage the vCenter server.
- **9**. Click **Next** to start the configuration. A window opens while IBM Upward Integration for VMware vSphere is being configured. Wait for the configuration to complete.
- **10.** Click **Finish**. IBM Upward Integration for VMware vSphere is successfully installed.

Note: When you launch the installation package, if an earlier version of IBM Upward Integration for VMware vSphere is detected, an upgrade dialog box is displayed. Click **Upgrade** to upgrade the product. The installer will remove the old version and install the new version.

Installing the IBM License Tool and activating the premium features

IBM Upward Integration for VMware vSphere provides a 90-day trial license by default. When the license expires after 90 days, all of the premium features are disabled. It is suggested that you install the IBM Upward Integration for VMware vSphere License Tool to activate the product license. Activation licenses can be purchased by contacting either your IBM representative or an IBM Business Partner.

After you purchase the IBM Upward Integration for VMware vSphere product license, you are only required to activate the license on the vCenter Server that is running IBM Upward Integration for VMware vSphere. It is not necessary to activate the license on each managed ESXi host. The license token will automatically be delivered to the ESXi host when it is managed by the vCenter server. For more information about activating the premium features, refer to the *IBM Upward Integration for VMware vSphere License Installer Guide*.

Installing and removing the IBM Upward Integration for VMware vSphere Provider bundle

The topics in this section describe how to install and remove the IBM Upward Integration for VMware vSphere Provider bundle.

The IBM Upward Integration for VMware vSphere Provider bundle enables advanced power management capabilities on IBM servers. Depending on the essi version, you need to install different offline bundles:

- IBM-ibmpowercim-ESX-4.1-00ACN-offline_bundle-1092011.zip is for esxi 4.1
- IBM-ibmpowercim-ESX-5.0-01ACN-1420628.zip is for esxi 5.0 and 5.1
- VMW-ESX-5.5.0-ibmpowercim-5.5-01ACN-1401186.zip is for esxi 5.5

These bundles are located in the installation package.

To install and remove the entire bundle, use VMware Update Manager(Recommended) or VMware vSphere Command-Line Interface (vSphere CLI) utility.

Important: IBM Upward Integration for VMware vSphere Provider bundle is only required for the power metric function, all other UIM functionalities can work without insalling the bundle. If the host is running generic vmware esxi, you need to install IBM Customization for ESXi offline bundles on Fix Central first, otherwise IBM Upward Integration for VMware vSphere Provider bundle will not work. If the host is running IBM customized esxi image downloaded from IBM x86 solutions for VMware web site (http://www-03.ibm.com/systems/x/os/vmware/), you can install IBM Upward Integration for VMware vSphere Provider bundle directly. The IBM customized ESXi 5.1 U1 and later versions already contain the IBM Upward Integration for VMware vSphere Provider bundle. Both IBM Customization for ESXi offline bundles and IBM Upward Integration for VMware vSphere Provider bundle can be installed with VMware Update Manager or VMware vSphere Command-Line Interface (vSphere CLI) utility.

Installing the IBM Upward Integration for VMware vSphere provider bundle using VMware Update Manager

To install the IBM Upward Integration for VMware vSphere Provider bundles using VMware vSphere Update Manager (VUM), you need to log into the vSphere client and import the offline bundles in VUM. For information about configuring VUM, see the VMware product documentation.

Installing the IBM Upward Integration for VMware vSphere bundle using VMware vSphere Command Line Interface

The topics in this section describe how to install the IBM Upward Integration for VMware vSphere bundle using the VMware vSphere Command Line Interface.

The VMware vSphere command-line interface (CLI) command set allows you to use common system administration commands for ESX and ESXi systems from any workstation with network access to the ESX and ESXi systems.

Download the VMware vSphere CLI from the following URL http:// www.vmware.com/support/developer/vcli/

Important: You need open the VMware vSphere CLI command prompt before installing or removing the bundle with the instructions below.

Installing the bundle on a host using the IBM customized ESXi 4.1 image

This topic describes how to install the IBM Upward Integration for VMware vSphere bundle on a host using the IBM customized ESXi 4.1 image.

About this task

Use the following procedure to install IBM-ibmpowercim-ESX-4.1-00ACNoffline_bundle-1092011.zip for a host using the IBM customized ESXi 4.1 image.

Procedure

- 1. To enter the maintenance mode for the host, type the following command: vicfg-hostops.pl --server [TARGET HOST IP] --operation enter
- 2. Install the package by using the following command:

vihostupdate.pl --server [TARGET_HOST_IP] -install -bundle [BUNDLE_PATH]
-c

BUNDLE_PATH stands for the absolute path of the bundle on the host where you run VMware vSphere CLI, for example: vihostupdate.pl --server 10.0.0.1 -install -bundle c:\offline-bundle.zip -c

3. Exit maintenance mode by using the following command:

vicfg-hostops.pl --server [TARGET_HOST_IP] --operation exit

4. Reboot the ESXi server and use the following command to verify that the package installed successfully:

vihostupdate.pl --server [TARGET_HOST_IP] --query

Installing the bundle on a host using the IBM customized ESXi 5.x image

This topic describes how to install the IBM Upward Integration for VMware vSphere bundle on a host using the IBM customized ESXi 5.x image.

About this task

Use the following procedure to install IBM-ibmpowercim-ESX-5.0-00ACN-1054796.zip for a host using the IBM customized ESXi 5.x image.

Procedure

- 1. Extract IBM-ibmpowercim-ESX-5.0-00ACN-1054796.zip. You will get a VMware Installation Bundle (VIB) and an offline bundle.
- Enter maintenance mode for the host by using the following command: vicfg-hostops.pl --server [TARGET HOST IP] --operation enter
- Install the package by using the following command: esxcli --server [TARGET HOST IP] software vib install -d [BUNDLE PATH]

Note: This is different from ESXi 4.1, the BUNDLE_PATH listed above should be either a network path or local path on ESXi 5.x host, not a path on the host where you run VMware vSphere CLI.

Examples:

- If you make the bundle downloadable from an HTTP server, then install the bundle with this command: esxcli --server 10.0.0.1 software vib install -d http://WEB_SERVER/VMW-ESX-5.0.0-ibmpowercim-1.0-3.0offline_bundle-914982.zip
- If you manually upload the bundle to the target ESXi 5.0 host under a directory such as /tmp, then install the bundle with this command: esxcli --server 10.0.0.1 software vib install -d /tmp/VMW-ESX-5.0.0-ibmpowercim-1.0-3.0-offline_bundle-914982.zip
- 4. Exit maintenance mode by using the following command:

vicfg-hostops.pl --server [TARGET_HOST_IP] --operation exit

5. Reboot the ESXi server and use the following command to verify that the package installed successfully:

esxcli --server [TARGET_HOST_IP] software vib list

Removing the bundle using VMware vSphere CLI

The topics in this section describe how to remove the IBM Upward Integration for VMware vSphere bundle by using the VMware vSphere Command Line Interface.

Removing the bundle on a host by using the IBM customized ESXi 4.1 image

This topic describes how to remove the bundle on a host by using the IBM customized ESXi 4.1 image.

About this task

Use the following procedure to remove the IBM Upward Integration for VMware vSphere bundle on a host by using the IBM customized ESXi 4.1 image.

Procedure

- Use the following command to locate the ID of the bundle you want to remove: vihostupdate.pl --server [TARGET_HOST_IP] --query
- Enter the maintenance mode of the host by using the following command: vicfg-hostops.pl --server [TARGET_HOST_IP] --operation enter
- Remove the bundle by using the following command: vihostupdate.pl --server [TARGET HOST IP] --remove -B [Bulletin ID]
- Exit maintenance mode by using the following command: vicfg-hostops.pl --server [TARGET_HOST_IP] --operation exit
- 5. Reboot the ESXi server and use the following command to verify that the package was removed:

vihostupdate.pl --server [TARGET_HOST_IP] --query

Removing the bundle on a host by using the IBM customized ESXi 5.x image

This topic describes how to remove the bundle on a host by using the IBM customized ESXi 5.x image.

About this task

Use the following procedure to remove the IBM Upward Integration for VMware vSphere bundle on a host by using the IBM customized ESXi 5.x image.

Procedure

1. Locate the ID of the bundle you want to remove by using the following command:

esxcli --server [TARGET_HOST_IP] software vib list

 Enter the maintenance mode of the host by using the following command: . vicfg-hostops.pl --server [TARGET HOST IP] --operation enter **3**. Remove the bundle by using the following command:

esxcli --server [TARGET_HOST_IP] software vib remove -n ibmpowercim4. Exit maintenance mode by using the following command:

- vicfg-hostops.pl --server [TARGET_HOST_IP] --operation exit
- 5. Reboot the ESXi server and use the following command to verify that the package was removed:

esxcli --server [TARGET_HOST_IP] software vib list

Chapter 3. Using IBM Upward Integration for VMware vSphere with vSphere Web Client

The topics in this section describe how to access and use the software with vSphere Web Client.

After installation, the **IBM Upward Integration** tabs are added to the vSphere Web Client providing both host level and cluster level management like monitoring, inventory, firmware updates, system configuration, and predictive failure management. To give you a single, heterogeneous view of all host system events within your managed environment, IBM hardware events are integrated into vCenter. Question: remove this list for d2?

- · Managing clusters
- Managing servers
- Managing hardware events

You can navigate to each of these functions from the navigation pane located at the top.

Managing clusters

When a cluster is selected in the inventory tree, the **IBM Upward Integration** tab displays below the **Manage** tab and provides the following cluster management functions:

- Cluster Overview
- IMM Discovery
- Rolling System Update
- Predictive Failure Management

You can navigate to each of these functions from the navigation tool bar located below the **IBM Upward Integration** tab.

Working with the Cluster Overview function

The Cluster Overview function collects and analyzes cluster inventory information and health status to assist with the operation and management of the hosts and the cluster.

The Cluster Health section provides a snapshot view of the following aspects of a system:

- The total number of IBM hosts and non-IBM hosts.
- The overall health status of the IBM host, indicating current alerts.
- A Summary of usage information indicating the space used for the cluster disk, memory, and CPU.

etting Started Sumr	mary Monitor Mana	age Related Objects				
Settings Alarm Defin	itions Tags Permiss	sions Scheduled Tasks	IBM Upward Integration			
rovides powerful plat	form management for II	BM System x, BladeCenter,	and PureFlex servers.			
Overview	IMM Discovery	Rolling Update				
Cluster Overview	Cluster	r Overview 💿				
		4 Total Host	ts	4 Tota	II IBM Hosts	
		4 IBM Host	ts	4 cr	itical	
		0 Non-IBM	Hosts	0 w	arning	
				0 nc	ormal	
				0 ur	known	
	Dista	Used: 41GB	98.6	00/	Total: 41.5GB	
	Disk:	Used: 1.4GB	90.0	0.76	Total: 39.9GB	
	Memory:		3.53	%		
		Used: 58.6MHz	Total: 46.1GHz			
	CPU:		0.13	70		
	Cluster C)verview				
	Request A	ccess 💌				
	RequestA					20200000
	Host	Status	Machine Type	Host Access	IMM Access	Launch
BM.	Host	.90.31 Status	Machine Type 7872	Host Access	IMM Access	Launch
EN. ersion information: 3	Host				IMM Access	9.115.2

Figure 2. Cluster Overview

The Cluster Overview section provides the following host information:

- host IP address
- host status
- host machine type
- host access level
- host IMM access and IMM console

The **Request Access** list has the following options:

- Request host access
- Request IMM access

Requesting host access

This topic explains how to request host access.

Before you begin

Add hosts into the cluster in vSphere Web Client.

About this task

This task is performed on the Cluster Overview page.

Procedure

- 1. Select **IBM Upward Integration** > **Overview**.
- 2. In the Cluster Overview section, select the hosts for which you want to request host access.
- 3. From the Request Access list, select Request Host Access.
- 4. In the Request Host Access dialog box, enter the following information for the host(s) you selected: If any of the hosts selected have the same account information, they are also enabled. Is Request Host Access dialog box the correct name of the dialog box?
 - User Name
 - Password

What is displayed after entering the credentials?

Requesting IMM access using the Cluster Overview function

This topic explains how to request IMM access from the Cluster Overview page.

Before you begin

To request IMM access, the selected hosts must have been previously discovered using the IMM Discovery page. For more information, see "Working with the IMM Discovery function" on page 16

About this task

This task is performed on the Cluster Overview page.

Procedure

- 1. Select **IBM Upward Integration** > **Overview**.
- 2. In the Cluster Overview section, select the hosts for which you want to request IMM access.
- **3**. From the **Request Access** list, select **Request IMM Access**. If the IMMs have been discovered, the IP addresses display in the Cluster Overview table, otherwise the Request IMM Access dialog box displays and requests that you enter the following IMM account information, and then click **OK**.
 - Is Request IMM Access dialog box the correct name of the dialog box?
 - User Name
 - Password

- 4. Select the IP address link to launch the IMM web console.
 - User Name
 - Password

What is displayed after entering the credentials?

Working with the IMM Discovery function

The IMM Discovery function provides out of band (OOB) management of your IBM servers using IMMv2 on the vSphere web client. This functionality can assist you with managing your IBM host and lower the risk cluster hardware problems by monitoring hardware events using IMM or setting Predictive Failure policies. The IMM Discovery function discovers the IMMs for your host in the cluster.

About this task

This task is performed on the IMM Discovery page.

Procedure

1. Select IBM Upward Integration > IMM Discovery.

	-	9	eFlex servers.		
MM Discovery	IMM Discovery				
	-	1			
	Use this page to discover t				
		he Integrated Manag	ement Module on t	he IBM hosts.	
	Select a discovery opt	ion:		Discovery	Item
	Range of IPv4 address	es	* Add	9.115.252	20-9.115.252.254
	IP range addresses:				
	9.115.252.20-9.115.2	52.254	Dele	ete	
	Discover Now				
	Discovered IMM Request IMM Access				
	IMM IP Address	IMM Access		Machine Type	UUID
	9.115.252.33	No Access	Request Access	8722	0821D2AC3D6911E18DEFE41F13DA1
HM.	9.115.252.38	🔕 No Access	Request Access	7917	53EAADBD4EE211E1B3115CF3FC7F1
ersion information: 3.0	9.115.252.40	No Access	Request Access	8737	6E03F9D9BCE511E1A1D93440B5BF28

Figure 3. IMM Discovery

- 2. From the select a discovery option dual-list, select a discovery option.
- 3. Enter a range of IPv4 addresses or a single IPv4 address.
- 4. Click **Add** to add the discovery items to the **Discovery Item** dual-list. If there are any discovery items added, that you do not want to discover, you can select **Delete** to remove them from the **Discovery Item** list.
- 5. After adding all of the discovery items, click **Discover Now** to start the discovery process. You cannot stop the discovery operation after it has started. When the discovery operation has finished, the discovered IMMs are listed in the Discovered IMM table.

Requesting IMM access using the IMM Discovery function

This topic explains how to request IMM access from the IMM Discovery page.

About this task

This task is performed on **IBM Upward Integration** > **IMM Discovery** page.

Procedure

1. From the Discovery IMM table, select one or multiple IMM IP addresses that will use the same credentials for IMM access.

etting Started S	Summary	Monitor	Manage F	Related Object	S				
ettings Alarm D	Definitions	Tags P	ermissions	Scheduled Ta	sks IBM Up	ward Integra	tion		
rovides powerful	platform ma	anagemei	nt for IBM Sys	tem x, BladeC	enter, and Pu	reFlex serve	s.		
Overview	IMM Dis	covery	Rolling	Update					
IMM Discovery		IMN	/ Disco	very 💿					
		Use ti	nis page to di	scover the Inte	grated Mana	gement Mod	ule on the l	BM hosts.	
		Select a discovery opt		ery option:				Discove	ery Item
		R	ange of IPv4	addresses		•	Add >	9.115.2	52.20-9.115.252.254
		1	P range addr	esses:			< DDA		
			9.115.252.20	9.115.252.25	1		Delete		
					Request IM	IM Access			
					Specify IM	l account be	low:		
			Discover No	w		User Name			
		Diss	overed IMM			Password	:		
		_	quest IMM Ac		Apply th	is set of cre	dentials to	all selected IM	MM(s)
			quest initia Ac				Ж	Cancel	
			IMM IP Add	ress IM	-			Calicer	
			9.115.252.3	33 🔇	No Access	Request A	cess 8	722	0821D2AC3D6911E18DEFE41F13DA1
LEM.			9.115.252.3	38 📀	No Access	Request A	cess 7	917	53EAADBD4EE211E1B3115CF3FC7F1
'ersion informati <u>'iew More</u>	on: 3.0		9.115.252.4	40 🔞	No Access	Request A	cess 8	737	6E03F9D9BCE511E1A1D93440B5BF2
	eserved					D			

Figure 4. Requesting IMM access on the IMM Discovery page

2. In the Request IMM Access dialog box, enter the following information and then click **OK**. What is displayed after this operation is complete?

Working with the Rolling System Update function

The Rolling System Update (RSU) function updates the firmware in a single batch while the system continues running without interruption to application services on a server host. The Rolling System Update (RSU) provides an approach of non-disruptive firmware updates. It fully manages firmware by orchestrating "rolling" updates leveraging dynamic virtual machine movement within a defined VMware cluster, and completing the whole update process including host reboot automatically without any workload interruption.

Before you begin

The following prerequisites are necessary for using the Rolling System Update function:

- IBM Customization Patch 8 or newer patch must be installed on all the esxi 5.0.x and 5.1.x hosts before performing rolling firmware update, You can download this from Fix Central.
- An IBM customized ESXi image, version 5.0 and later. For a generic VMware ESXi image, IBM offline bundle for ESXi must be installed. You can download this from Fix Central.
- VMware vCenter Enterprise or Enterprise Plus Edition with DRS enabled and running in fully-automated mode.
- Host access has been granted. For more information, see the "Working with the Cluster Overview function" on page 13.

Configuring the Rolling System Update preferences

The Preferences page allows you to configure the update repository for rolling update.

Specify the update repository location:

Specify the update repository location where the Rolling System Update function should look for updates.

Procedure

- 1. Select IBM Upward Integration > Rolling System Update.
- 2. From the left navigation pane, select **Preferences**.
- **3**. On the Preferences page, specify the update location by selecting one of the following options:

Check the IBM website

Download the appropriate updates automatically from the IBM website during the rolling update.

You can configure a proxy if the vCenter server cannot access the website directly, but completing these steps:

- a. Select **Check the IBM website** and click **Require a proxy server for Internet connection**.
- b. Enter proxy configuration and click **Save**. please provide specifics for the proxy configuration.

Look in a directory on vCenter server

On vCenter, locate updates in a local directory : InstallFolder\ webroot\bin\data\repository

The directory cannot be changed for Rolling System Updates.

Checking for updates automatically:

If you selected the **Check the IBM website** option, you can have UIM automatically download the latest firmware for all managed servers from the IBM website.

Procedure

- 1. Click Check available updates periodically.
- 2. Configure check cycle based on how frequently you want to check and download updates.
- 3. Click Save.

Checking for updates manually:

Complete the following steps to manually check for updates:

Procedure

- 1. Click Check Now.
- 2. In the dialog box displayed, click **OK** to begin checking for updates. The results are listed on the vCenter event monitor.
- **3**. In the left pane of the vSphere web client, click **vCenter node** and select **monitor** and then **Events**. When the checking operation has finished, the checking updates results display an update event.

What to do next

Downloading the latest updates on a regular basis are recommended.

Managing the Rolling System Update tasks

Rolling System Update (RSU) provides a task manager that helps you manage rolling update tasks. A task contains all of the information and options for a rolling update.

About this task

The Task Manager has the following task options:

- Create a task
- Edit a task that has not been started
- Delete a task
- Cancel a running task
- Rerun a failed task
- Clone a completed task
- · View reports of tasks

Procedure

- 1. Select **IBM Upward Integration** > **Rolling System Update**. Are these steps correct for accessing the task manager?
- 2. From the left navigation pane, select Task Manager.

ettings Alarm Definitions	Tags Permissions Schedu	Ied Tasks IBM Upward Int	egration					
ovides powerful platform ma	anagement for IBM System x, B	ladeCenter, and PureFlex s	ervers.					
Overview IMM Dis	covery Rolling Update	9						
Fask Manager	Task Manager @	3						
Preferences		age the rolling update tasks		lithe easi 5.0 s and 5.4 s	u baada bafaan aadaanin a cilia			
	firmware update.	cation Patch 8 of newel patc	II IS INSTAILED ON A	i the esxi 5.0.X and 5.1.	x hosts before performing rolling			
	Create Create Like Edit Delete Cancel							
	Task Name	Status	Progress	Start Time	End Time			
	task example - 1	Running	0%	2013/12/03 12:09				
BM.								
/ersion information: 3.0								

Figure 5. Task Manager

Creating a task:

Each cluster can have only one active task.

About this task

This task is performed from the **IBM Upward Integration** > **Rolling System Update** > **Task Manager** page.

Procedure

1. Click **Create** to open the Rolling System Update Wizard. The **Create** button is enabled only when a task displays as Finished, Canceled, or as a Failed task in the list.

Select hosts and firmware	2. Update options and schedules								
ask Name: task example - 2									
▼ □IBM System x -[7870B3A]-	3	Available firmware for 9.125.90.116							
9.125.90.116 (1 selected items)		Firmware Name	New Versions	Installed Versions	n I				
▼ [7872AC1]- (8 selected items) ▼ 9.125.90.31 (1 matched items)		VUXSP							
▼[]-[7917AC1]-		Brocade BootCode Update for 160	3.1.0.1.b						
9.115.255.20		Emulex HBA (LPe1205/LPe1200x)	ibm1206-2.01a9						
		Emulex UCNA Firmware Update for	ibm1206-4.2.433.3-1						
		IBM Dynamic System Analysis (DS	DSYTA9C-9.32	DSYTA9C-9.32					
		IBM uEFI Flash Update	P9E160A-1.21	P9E159A-1.20					
	2	Integrated Management Module U	YU00F7C-1.41	YUO0E9C-1.37					
		QLogic 10 Gb Converged Network	qmi8142-2.00.63.1						
		V Individual							
		Brocade BootCode Update for 160	3.1.0.1.a						
		Emulex HBA (LPe1205/LPe1200x)	ibm1212-2 💌						
	4				F				

Figure 6. Rolling System Update Wizard

All the hosts in current cluster display on the left and are organized by machine type. Available and installed firmware versions for each machine type and host are listed on the right.

2. Select a host to view available firmware from the right and choose the updates you want to apply.

If a machine type is selected, the selection of firmware is applied to all the hosts that have this machine type. If a host checkbox is greyed out, there are no available updates in the repository.

If inventory information has not been collected for a host, RSU displays firmware of its machine type for this host. In this case, you can still select firmware for this host to update. RSU will try to collect host inventory information when updating and install the selected firmware. If a selected firmware is not available for the host, it is skipped. 3. Click Next. The available options display. What is the name of the page?

Update Parallelization

Specifies the number of hosts that can be updated concurrently. Note that updating multiple hosts concurrently requires more system resources, and you should carefully set the value according to the current available system resources; such as CPU and memory on the vCenter server. The default is 1.

Reboot after update

Specifies whether to reboot the host after updates are applied.

Force downgrade

Specifies whether to update firmware if the installed version is newer than the one you selected.

Schedule

Specifies when to initiate the task.

4. Click Finish to save the task. RSU initiates the task according to the schedule.

Editing a not-started task:

You can edit a task from the Task Manager. Only editing a not-started task is supported.

About this task

This task is performed from the **IBM Upward Integration** > **Rolling System Update** > **Task Manager** page.

Procedure

- 1. Select a not-started task in the list and click **Edit**. The Rolling System Update Wizard opens. The machine type and hosts are listed on the left and the available firmware is listed is up-to-date.
- 2. Edit the task and then click **Finish** to save changes.

Deleting a task:

All tasks except a running task can be deleted.

About this task

This task is performed from the **IBM Upward Integration** > **Rolling System Update** > **Task Manager** page.

Procedure

1. Select one or more tasks in the list that are not currently running.

2. Click Delete. what is displayed after this?

Canceling a running task:

A Rolling System Update (RSU) task can be canceled while it is running. If a task is canceled, the task status changes to Canceling.

About this task

This task is performed from the **IBM Upward Integration** > **Rolling System Update** > **Task Manager** page.

Procedure

- 1. Select a running task in the list.
- 2. Click **Cancel**.What is displayed after this? RSU first completes the updating of a host that is started and then only cancels the others. This task would may take several minutes to complete.

Rerunning a failed task:

You can rerun a task, if it has failed or has been canceled. The **Rerun** button is only available in these two situations.

About this task

This task is performed from the **IBM Upward Integration** > **Rolling System Update** > **Task Manager** page.

Procedure

Click Rerun in the status column. What is displayed? what does the user do next?

Cloning a completed task:

You can clone a finished, failed, or canceled Rolling System Update task as a new task.

About this task

This task is performed from the **IBM Upward Integration** > **Rolling System Update** > **Task Manager** page.

Procedure

- 1. Select a finished, failed or canceled task from the list.
- 2. Click Create Like... to open the Rolling System Update Wizard.

3. Edit the original selection and click **Finish** to save the new task.

Viewing reports of tasks:

The report of tasks provides Rolling System Update detail information.

About this task

This task is performed from the **IBM Upward Integration** > **Rolling System Update** > **Task Manager** page.

Procedure

In the Status column, click a status link to open Rolling Update Task Report view. The table below lists the status for tasks, hosts, and firmware.

Table 3. Rolling System Update task status

Target	Status	Description
Rolling Update	Not Started	The task has not started.
Task	Running	The task is running.
	Canceled	The task is canceled.
	Failed	Causes of task failure:
		• Downloading firmware package failed.
		• Rebooting EXSi host failed.
		• VM migration failed.
		Firmware update failed
	Finished	The task has completed. If firmware is failing to update, the task is also marked as Finished.
Host	Not Started	The update for the host has not started.
	Migrating	The host is entering maintenance mode.
	Maintenance	The host is in maintenance mode.
	Updating	The firmware of the host is updating.
	Reboot	The host is rebooting after updating completes.
	Exit Maintenance	The host is exiting maintenance mode.
	Success	The firmware update succeeded.
	Failed	The causes of host failure:
		• Cannot enter maintenance mode.
		• Cannot get the update package.
		Cannot update the firmware.
		Cannot reboot the host.
		Cannot exit maintenance mode.
Firmware	Not Started	The firmware update has not started.
	Running	The firmware update is running.
	Success	The firmware update succeeded.
	Failed	The firmware update failed.

Working with Predictive Failure Management

The topics in this section describe how to use the Predictive Failure Management on the vSphere Web Client to protect your running workload. The Policy and Rules page allows you to set management policies for a server based on a hardware Predictive Failure Alert (PFA). Based on a defined policy, the IBM Upward Integration for VMware vSphere evacuates VMs from the server to other hosts in the cluster in response to occurred PFAs. You can view PFAs from the server and the triggered policy history on the Predictive Failures page.

Before you begin

Before using Predictive Failure Management, verify the following prerequisites are met:

- Predictive Failure management policy can be set until you discover the IMMs and request the IMMs access.
- Predictive failure management relies on the hardware PFA capability. The IMM of the server should have the ability to send out Predictive Failure Alerts when a failure is detected, for example, x3850 X6 (3837).
- Proper configuration of the network management policy on the vCenter server is required to enable TCP on the https port that you selected when installing IVP, the default port is 9500. IBM Upward Integration for VMware VSphere listens on this port for incoming indications.
- The host must be put in a properly configured cluster. DRS (Dynamic Resource Scheduler) must be enabled and running in fully automated mode. IBM Upward Integration puts the host in maintenance mode, and the VMWare DRS evacuates VMs to other hosts in the cluster.

Setting a new policy

You can set RAS policy on each supported servers in the cluster. A policy defines the hardware event categories you want to monitor and the corresponding action when the event occurs.

About this task

This task is performed from the **IBM Upward Integration** > **Predictive Failure** > **Policy and rules page.**

Procedure

- 1. Select one or multi IMM nodes.
- 2. Click Set policy. The Manage RAS Policy page is displayed.

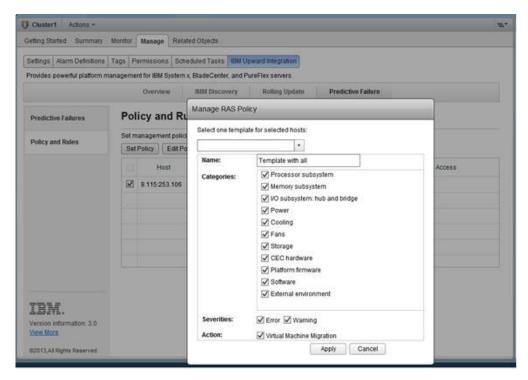


Figure 7. Manage RAS Policy

Event categories:

The following table contains the Predictive Failure Alert Event Categories used on the Manage RAS Policy page.

Table 4. Predictive Failure Alert Event categories

PFA Event	Description
Processor subsystem	Processor subsystem includes the CPU, its internal circuits like cache, the bus controller, and external interface.
Memory subsystem	Memory subsystem includes the memory controller, memory buffer, memory bus interface, memory card, and DIMM.
I/O subsystem	I/O subsystem includes: IO Hub, IO bridge, IO bus, IO processor, IO adapters for various IO protocols, such as PCI and InfiniBand.
Power	Power includes the power supply and power control hardware.
Cooling	All thermal-related events.
Fans	Includes the fan and blower.
Storage	Includes the storage enclosure, storage controller, raid controller, and media (disk, flash).
Platform firmware	Platform firmware includes IMM and uEFI.
Software	Operating system software and application software.
External environment	All events of an external-related environment including: AC power source, Room ambient temperature, and user error.

Event severity:

The following table contains the PFA Event severity levels.

Table 5. Predictive Failure Alert severity levels

Severity	Description
Warning	An indication of a failure. This can be a failure that has no impact on performance. Service action is necessary.
	A failure that causes a loss of performance, and can cause machines to be inoperable. Immediate service action is necessary.

Action:

The Virtual Machine Migration action evacuates all of the VMs from the server and put the server in maintenance mode.

After setting event categories and corresponding action, click **Apply** to apply the policy to the host.

Note: New created policy will be saved as a template automatically, so that for any other hosts, you can simply choose a template from the top template dropdown list to apply the same policy.

Editing a policy

You can modify a policy defined on a host using the Edit policy function.

About this task

This task is performed from the **IBM Upward Integration** > **Predictive Failure** > **Policy and rules page.**

Procedure

- 1. Select a host.
- 2. Click Edit policy.

Note: When the policy is modified, and the policy is also used by other hosts, a warning message is displayed allowing you to select whether to apply the changes to other hosts or save the changed policy with a different policy name.

Disabling a policy

You can remove a policy from one or more hosts using the Disable policy function.

About this task

This task is performed from the **IBM Upward Integration** > **Predictive Failure** > **Policy and rules page.**

Procedure

- 1. Select one or more hosts.
- 2. Click **Disable policy**.
- 3. Click Disable to confirm the deletion of the policy from the hosts.

Viewing Predictive Failure Alert events and the Action History table

IBM Upward Integration for VMware vSphere with vSphere Client monitors Predictive Failure Alerts (PFAs) from IMM. All Predictive Failure events are listed in the Event Log table. When the conditions of a rule are met, the defined action of the rule is launched on the managed endpoint. All of the triggered rules and action results are listed in the Action History table

About this task

This task is performed on the Predictive Failure page.

Procedure

Select **IBM Integration** > **Predictive Failure**.

Cluster2								
etting Star	ned Summary	Monitor	Manage	Related Object	ds			
Settings	Alarm Definitions	Tags	Permissions	Scheduled Ta	asks IBM	Upward Integration		
provides p	owertul platform m	anagem	vent for IBM Sy	stem x, BladeC	Center, and	PureFlex servers		
			Overview	IMM D	liscovery	Rolling Update	Predictive Failure	
Predictiv	e Failures	Pr	edictive	Failures	•			
Policy an	id Rules		ew Predictive F rent Log	allure event lo	g and activ	on history.		
		1	lost	Messag	Severity	Time Stamp	Description	
		1	9.115,252.196	PLAT0144	Warning	2013-10-22 21:59:04	Memory Logging Limit Reached for memory device 1 in	Gre
		4	115,252,196	PLAT0145	Warning	2013-10-22 22:02:18	Memory Logging Limit Removed for Dimm 255 on Sub	syst
						0		
		A	tion History					
		1	lost	Messag	Descripti	ion		
		3	9.115.252.196	PLAT0144	Memory L	ogging Limit Reached f	or memory device 1 in Group 1 on Subsystem System Me	mo
-	-	1	9.115.252.196	PLAT0145	MemoryL	ogging Limit Removed	for Dimm 255 on Subsystem System Memory.	
TBN Version in View More	formation: 3.0	12				11		
	Rights Reserved							

Figure 8. Viewing Predictive Failures

Managing servers

When a host is selected in the inventory tree, the IBM Upward Integration tab displays under the Manage tab providing the following management for a single IBM server:

- System Analysis
- Alerts and Events
- · Firmware updates
- · Power and cooling
- Advanced system settings

You can navigate to each of these functions from the navigation bar located above the tab.

Working with the System Analysis

The System function collects and analyzes system inventory information and health status to aid in diagnosing system problems.

System collects information about the following aspects of a system:

- Basic system information
- System event logs
- · Installed applications and hot fixes
- Network interfaces and settings
- Hardware inventory
- · Vital product data and firmware information

System provides an organized view that you can use to perform the following functions:

- View the system information
- Launch system diagnostic collection
- · View the categorized system inventory results

Viewing System Overview

The System Overview page provides you with a snapshot view of the current system. You can view basic system information such as the machine type, operating system, version, IMM firmware version, and uEFI firmware version. You can also view the system hardware event summary and system inventory collection history.

Top Level Counts Top	Helm - 2.5	R.125.90.145 Adone -								
Writaal Machines Befrigs Noteworks Back Speer Line Control Back Speer Line Control<	8.125.00.145	and the second	Monitor Manage Rel	uted Objects						
Wope Produkts powerful platform management for EBB System 1, BladeCenter, and PureFiles servers. Distatives System Alerts and Events Preversed Cooling Predictive Failures Centiformes (*) Help System Overview System Overview System Overview System Overview System Overview System Statemet Systems (*) Help Methods Stretches Methods Stretches Restated Applications System Overview System Statemet Systems (*) Help Methods Stretches Methods Stretches System Overview System Stretches (*) Help System Overview System Stretches System Stretches (*) Help Methods Stretches Restated Applications System Stretches (*) Help Bestat Number Stretches (*) Stretches (*) Stretches (*) Help Hendware Investing Help Hennaue: 133(1000ESD) Total Hendy: 2040S / 98 (*) Help Else States Total Hendy: 2013(05/13 11.41.46 System States (*) Help 773 (*) Help (*) Help (*) Help			age Alarm Definitions 1	aga Parmissions	M Upward Integr	none				
Image: System Alerts and Levels Tennower Updates Predictive Tailures Ceelliparation Image: System Coverview System Overview System Overview System Overview System Coverview			nanagement for KIM System	ns, BladeCenter, and	Purefiles servers.					
System Overview System Overview System Overview System Overview System Information System Software (SII System (787064/- Operating System: VMerre ESII Of Version: 5.1 Study 799733 System Software (SII System: 138/0400E30) Total OPU: 1*4 Cores. 2.47 GHz System Software 1.38/0400E30) Total Sector System Software Total Sector Total Sector System Software System Software			and Events Firm	ware Updates	Power and Coo	ing Predictive Failure	es Ceelliparation	() Help		
Installed Applications System information Network Settings System information Rectivers Inventiony Editation (Setting) Rectivers Inventiony Editation (Setting) Firmwore Invention Editation (Setting) Firmwore Inventer Editation (Setting)			1.2000000000000000000000000000000000000	00000						
Notwark Settings Bjotem Name: IBM Bjotem r (787084/): Operating System: Minuse EBU OS Version: 5.1.8 built-199733 Nerdwark Investory Biotem Name: IBM System r (787084/): OS Version: 5.1.8 built-199733 Nerdwark Investory USEP Remeare: 1.330/UO0E30) Total OPU: 1*4 Cores. 2.47 Obz Filmware/WDD Last Start Time: 201305/13 11.41.46 System Status Total Eventy Other Varies Total Eventy Other Varies Total Eventy Other Varies Total Eventy Other Varies	ab Distributed Switzes	System Overview	System Over	rview 💿						
Network Settings Devia/Hamber 996,5825 OS Version: 5 1 8 build-799733 Mardware Inventory JAMP Formware. 1.33/PUCODE300 Total CP-L 1 - 4 Cover. 2.47 Gaz. UEFI Formware. 1 18/PSE 157/A) Firmware.VPD Last Obert Trive. 2013/05/13 11.41.46 System Status Total Service		Installed Applications	System informatio	•						
Hardware Investory USER Firmware 1.33/01/00/E30) Total Olevit 114 Cores. 247 Obz Farmware Investory Last Start Time. 2013/00/13 114146 System Status Total Olevity Total Cores. Total Cores. Total Cores. Total Cores. Total Cores.			System Name 8	BM System x -(787064	4 Opt	Operating System: Vitware ESti				
Nachbase Investory UEFI Fermane: 138/96/157/0 Total Memory 20408.7.68 Fermane: VPD Last Start Time: 2013/05/13.11.41.46 System Status Citize: Warning Information 779 (0) (P) (14) (Citize: Citize: Ci		Network Settings				Version: 5.1.0 build-799733				
System Status Total Dente 779 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1		Hardware Investory								
Total Events 779 (a) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b		Famware/VPD Last Start Time: 2013/05/13 114146								
779 🕥 🕫 🏠 141 💽 (70%)			System Status							
💁 🙆 🕬 🔥 🚮 (768)			Total Events	Citizer .	Warning	Information				
			779	Concerning .	Trender					
			These Ed.	0 **	141 AL	creat				
						17.49				
System diagnostic data taxt collected at: 2013/05/10 11.17.48		Normal Concession	Collect Get	the latest system diag	nostic data.					
Collect Get the latest system diagnostic data		Version information 2.0 View More								

Figure 9. System Overview page

Launching the system diagnostic collection

This topic describes how to the launch system diagnostic collection function to get the latest system inventory information.

Procedure

Click **Collect** located in the bottom section of the System Overview page to launch a full analysis of the system. This operation can take up to five minutes to complete.

Note: During the collecting process, the Installed Applications page, Network Settings page, Hardware Inventory page, and Firmware/VPD page are blocked. To avoid possibly disrupting the process, do not navigate to any other host. When the collection process finishes, the last collection time is displayed on the System Overview page. The hyperlink **Download log** is displayed after the collection time. Click this link to download the latest system diagnostic data. The latest system diagnostic data can be viewed from each of the categorized pages.

Viewing categorized analysis results for the vSphere Web Client

After you launch a full system diagnostic collection, you can view the following analysis categories: Installed Applications, Network Settings, Hardware Inventory, and Firmware/VPD. Each page contains detailed information for each category.

On the left-side of the System Overview page, click to select and view each of the analysis category pages.

vmware [,] vSphere Web Cli	ient 🔒 🖉					U Administrator@	VSPHERE LOCAL -	l Help +
🖣 vCenter 🕨 🔊 🕱	9.125.90.38 Actions -							=*
	Getting Started Summary	Monitor Manage Re	lated Objects					
✓ Ø WIN-HKPC7AHGVAJ ✓ DCCZ	Settings Networking Store	age Alarm Definitions 1	ags Permissions	IBM Upward Integration				
CLUSTER	Provides powerful platform m	anagement for IBM Syste	m x, BladeCenter, and	d PureFlex servers.				
9.115.253.52 (not respo	System Alerts a	nd Events Firmwa	re Updates F	Power and Cooling	Configuration (?)	Help		
MICKY	System Overview	System Ove	rview 💿					
	Installed Applications	System Information	on					
	Network Settings	System Name: - Serial Number:			Bystem: VMware ESXi n: 5.1.0 build-997553			
	Hardware Inventory		.41(YU00F7C-1.41) 1.60(HIE160XUS-1.6)		1 * 8 Cores, 1.82 Ghz ory: 16367.3 MB			
	Firmware/VPD	Last Start Time: 21	113/12/31 10:58:27					
		System Status						
		Total Events	Critical	Warning	Information			
		1500	(8)	<u>(0)</u>	(1492)			
		Show All						
		-	ic data last collected a the latest system dia	at: 2014/01/17 03:12:32 ignostic data.	Download log			
	IBM.							
	Version information: 3.0.1 View More							
	@2013,All Rights Reserved							

Figure 10. Viewing categorized analysis results

Results are displayed in tables with the applicable analysis category title.

Working with Alerts and Events

The Events and Alerts function collects System Health information and displays hardware events and power throttling alerts.

Settings Networking Stora	ge Alarm Definition	s Tags Permissio	ns IBM Upward Integrat	on		
Provides powerful platform m	anagement for IBM S	ystem x, BladeCenter	, and PureFlex servers.			
System Alerts a	ind Events	irmware Updates	Power and Coolin	g Predictive Failures	Configuration () Hel	P
System Health	System H	ealth 💿				
Power Throttling	Critical(6)	Warning(4)	Information(769)			
	Filter by:	1	•		4	9
	Message ID	Severity	Time Stamp	Message Detail		
	IMM0025	information	2011-07-21 16:47:58	LAN: Ethernet[eth0] interface is now	active	
	IMM0023	Information	2011-07-21 16:47:58	ENET[sp-ethernetport] IP-Cfg:HstN IP@=192.199.199.81 ,NetMsk=255		2
	IMM0025	information	2011-07-21 16:49:31	LAN. Ethemet(eth0) interface is now	active	
	IMM0023	Information	2011-07-21 16:49:31	ENET[sp-ethernetport] IP-Clg:HstName=IMM-E41F137C664C, IP@=192.199.199.81 .NetMsk=255.255.255.0, GW@=192.199.199.2		
	PLAT0108	information	2011-07-22 14:02:08	Host Power has been Power Cycle	đ	
	IMM0025	Information	2011-07-26 09:55:31	LAN: Ethernet[eth1] interface is now	active	
	IMM0023	🔟 Information	2011-07-26 09:55:31	ENET[sp-ethernetport] IP-Cfg:HstN: IP@=192.199.199.81 NetMsk=255		2
	IMM0025	Information	2011-07-26 09:59:01	LAN: Ethemet(eth1) interface is now	active	
Version Information 2.0	MM0023	Information	2011-07-26 09:59:02	ENET[sp-ethemetport] IP-Cfg:HstN IP@=192.199.199.81 .NetMsk=255		2
View More	IMM0025	Information	2011-07-26 10:01:00	LAN: Ethernet(eth1) interface is now	active	

Figure 11. Viewing Alerts and Events

The System Health table contains events and alerts that can be sorted by clicking the table columns. It can also be filtered by choosing the severity from the **Filter by** menu. To collect the latest alerts and events from the host, click **Refresh**.

Working with Firmware Updates

The Firmware Updates function applies Recommended Updates (UXSP) and Individual Updates to your ESXi system. You can use this function to obtain and deploy UpdateXpress System Packs (UXSP) firmware updates and individual firmware updates.

The main functions of the Firmware Updates function include:

Acquire Updates

The Acquire Updates function downloads the UpdateXpress System Pack and individual updates for supported server types from a remote location such as IBM support.

Compare and Update

Inventories the system on which the update is being performed.

Queries the update directory for a list of applicable update packages.

Compares the inventory to the applicable update list.

Recommends a set of updates to apply.

Deploys the updates to the system

Prerequisites for updating firmware

This topic provides information for completing the necessary prerequisites for updating firmware.

Before you begin

Complete the following prerequisite steps before updating the firmware.

- 1. Enable **Commands** on the USB interface in uEFI by changing the uEFI settings.
- 2. Reboot the host.

Selecting update preferences

The Firmware Updates function can update a remote ESXi host by using either Recommended (UXSP) or Individual updates acquired from the IBM website or a specific location. On the Updates Preferences page, you can select the method for acquiring the updates package .

Procedure

1. Select **Firmware Updates** on the Manage IBM Upward Integration page. The Updates Preferences page is displayed.

Getting Started Summary I	Monitor Manage Related Objects	
Settings Networking Storag	e Alarm Definitions Tags Permissions IBM Upward Integration	
Provides powerful platform ma	nagement for IBM System x, BladeCenter, and PureFlex servers.	
System Alerts and E	Vents Firmware Updates Power and Cooling Predictive Failures Configuration () Help	e.
Recommended Updates	Update Preferences ®	
Individual Updates	View information about firmware updates and select your update preferences. Select one of the following Update locations	•
Updates Preferences	Check the IBM website - Automatically download updates from the IBM site	
	Require a proxy server for infernet connection. Enter the Host Name and Port. Host Name: 9.119.41.121 Port: 8080 Require proxy authentication. Enter a User Name and Password. User Name: username Password: ********	
	Look in a directory on vCenter server - Check the vCenter server directory, which contains individual updates. Host ESXi Account User Name: root	
Version information:2.0 <u>View More</u>	Password:	•

Figure 12. Update Preferences page

2. On the Update Preferences page, click to select one of the following update options.

Check the IBM website:

Download the appropriate updates automatically from the IBM site.

Look in a directory on vCenter server:

Access a directory on the vCenter server file system containing specific individual updates.

If the vCenter server cannot access the website directly, then you can enter the proxy server and port.

When you select the **Look in a directory on vCenter server** option, the firmware updates acquire updates from a specified directory on vCenter server: Installation folder\IVP\bin\data\uxspi\repository\. However, you are not allowed to change the directory and put updates under this directory.

Note: When you select the IBM website option to update firmware, the updates package is saved in the Installation folder\IVP\bin\data\uxspi\repository\ directory on the vCenter server after download. Select the location method to update the other host servers that have the same machine type. Before updating the host firmware, you need input the root account of the host for updates.

Firmware update scenarios

The topics in this section describe two scenarios for firmware updates: Recommended Updates (UXSP) and Individual Updates.

An UpdateXpress System Pack (UXSP) is an integration-tested bundle of online firmware and driver updates for IBM System $x^{\text{(B)}}$ and IBM BladeCenter[®] servers. UpdateXpress System Packs simplify the downloading and installation of all online driver and firmware updates for a given system, ensuring that you are always working with a complete, current set of updates that have been tested together and bundled by IBM.

Recommended Updates (UXSP):

If you select **Check the IBM website** on the Update Preferences page, the Recommended Updates option downloads and installs firmware and driver updates from the latest UXSP for IBM System x and IBM BladeCenter servers. If you select **Look in a directory on vCenter server**, Recommended Updates will install firmware and driver updates from a local vCenter directory.

Procedure

1. Verify that either the vCenter Server has internet access to connect with the IBM website, or that the UXSP in the specified vCenter server directory is applicable for the target machine type.

2. Click **Start Update Wizard** on the Recommended Updates page. The Recommended Updates Wizard opens and displays the Check Compliance dialog box.

	AND ADDRESS OF ADDRESS OF	Rons Tags Permissions IBNUpward Integration	
		M System x BladeCenter, and PureFlex servers	
System Alerts and	Events	Firmware Updates Power and Cooling Predictive Failures Configuration	() Help
Recommended Updates	Recom	mended Updates ®	
Individual Updates	The Update? x8 and Blad		ach System
Updates Preferences	Start Upda	1. Check Compliance 2. Updates Firmware	
		The UpdateXpress System Pack(UXSP) contains an integration-tested bundle of online, updateable firmware updates for each System x8 and BladeCenter8 server. Click Check Firmware Compliance to check for firmware updates.	
		Check Firmware Compliance	
Version Information 2.0 View More		Next Cancel	

Figure 13. Recommended Updates Wizard - Check Compliance dialog box

- **3**. Click **Check Compliance**. If you do not have this type of account for the target host or if the account is wrong, a dialog box opens and prompts you for the host account information.
- 4. When the Check Compliance action has completed, make any necessary changes, and click **Next**.

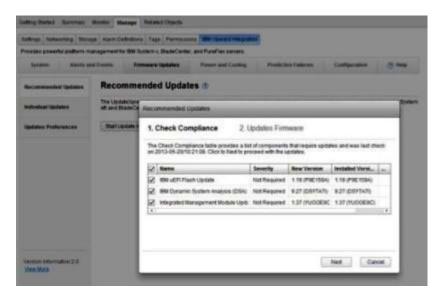


Figure 14. Check Compliance complete

After all the selected downloads are complete, the selected updates will update the target host.

etting Started Sum	imary Mo	nitor	Manage	Related Objects					
Settings Networking	Storage	Alarm	Definitions	Tags Permissio	ns IBM Upward Integra	noili			
rovides powerful pla	tform mana	igemen	t for IBM Sy	stern x, BladeCenter	and PureFlex servers.				
System /	Verts and E	vents	Firm	nware Updates	Power and Cooling	Predictive	Failures C	onfiguration	Help
Recommended Upd	ates	Rec	omme	nded Update	es @				
ndividual Updates			dateXpre BladeCe	Recommended U	pdates		_	_	Syst
Updates Preference	85	Start	Update V	1. Check Com	pliance <mark>2.</mark> U	pdates Firmwa	are		
				You are now ready to install the updat		ble) and install the u	ipdates. Click Can	cel if you do not w	vant
				Name		Version	Reboot Requi	Status	
					ement Module Update	1.37 (YUOOE9C)	No	Running	
Version information: <u>View More</u>	2.0			4				Can	cel

Figure 15. Recommended Updates wizard - updating firmware

5. After all of the updates have been applied, click **Close** to exit the wizard.

Individual Updates:

If you selected **Check the IBM website** on the Update Preferences page, the Individual Updates option will download and install the firmware and driver updates from the IBM website for IBM System x and IBM BladeCenter servers. In the location mode, Individual Updates will install firmware and drive updates from the latest UXSP of location for IBM System x and IBM BladeCenter servers.

About this task

To update a remote server by using the Individual Updates option, perform the following steps.

Procedure

- 1. Verify that the vCenter Server has internet access to connect with the IBM website, or make sure the directory of vCenter Server has an UXSP which can apply to the target machine type when you selected location mode in Update Preferences.
- 2. Click **Start Update Wizard** on the Individual Updates page. The Individual Updates Wizard opens.

- **3**. Click **Check Firmware Compliance**. If you do not have this type of account for the target host or if the account is wrong, a dialog box opens and prompts you for the host account information.
- 4. When the Check Compliance action has completed, make any necessary changes, and click **Next**.

After all the selected downloads are complete, the selected updates will be applied to the target host.

5. After all of the updates have been applied, click **Close** to exit the wizard.

Working with Power and Cooling on the vSphere Web Client

The topics in this section describe Power[®] Metric options and provide you with the ability to manage power usage through power capping and power throttling.

Power Metric page

The Power Metric page has options for viewing the Power Usage History, Thermal History, and Fan Summary. If the host is being monitored, the current power usage, thermal history, fan history, and the time of the monitor reading are displayed. This information is automatically refreshed every five minutes. This information is helpful for determining whether to reassign the workload.

atting and all the second stars of the		Permissions IBM Upward Integration	
and the second sec	terrated the second management of the second	Linear and the statement of the state	
nables powerful platform	management for IBM System :	r, BladeCenter, and PureFlex servers.	
System Alert	s and Events FW Upda	tes Power and Cooling Predictive Failure	rs Configuration 👔 🕜 Help
2 0	General 🔊		
General	General		
Power History	You can set value for each	attribute of power metric, you must manually enable power	monitoring on a host to view power metrics
	Attribute	Value	Actions
Thermal History Host Monitoring		Enabled	Disable
Fan History	Poll Time	2013-05-03 13:05:19	
	Power Input	2180 watts	
	Thermal Input	22 ℃	
	+ Fan Input		
	Power Capping	Enabled	Disable
		130 watts Edit	
	Power Throttling	Enabled	Disable
		a service of entry 1	124
Trial version 2.0	Warning Throtting	144 watts Edit	

Figure 16. Power Metric page

Enabling and disabling power monitoring

This topic provides a description of how to enable and disable power monitoring.

Procedure

- 1. Click the Power and Cooling tab.
- 2. Select one of the following options:
 - Click Enable to enable Power Monitor on a host.

Note: The **Enable** button is visible when Power Metric is not enabled on a host.

- Click **Disable** to disable the monitoring.
- **3**. In the credentials dialog box, enter the credentials for the host, and click **OK**. The host credentials are saved in a database, and the monitoring of power usage begins.

Setting Power Capping

Through the Power Capping feature, you can allocate less power and cooling to a system if the firmware supports capping and it is enabled. This feature can help lower datacenter infrastructure costs and potentially allow more servers to be put into an existing infrastructure. By setting a power capping value, you can ensure that system power consumption stays at or below the value defined by the setting. The power cap value is the value you set for a rack or blade server that will be capped by the firmware. The power cap value is persistent across power cycles for both rack and blade servers.

If the server supports power capping, UIM retrieves the minimum and maximum power capping values from the server and shows it as a range. In the following screen capture, 78 is the minimum value, and 144 is the maximum value.

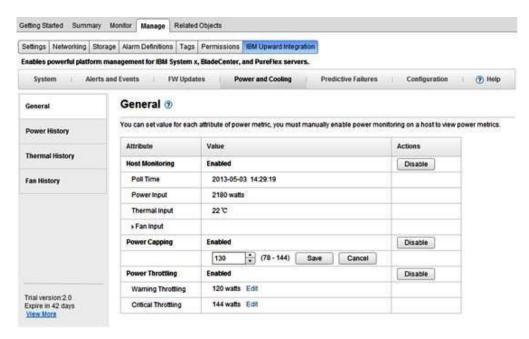


Figure 17. Setting Power Capping on the vSphere Web Client

Setting Power Throttling

Through the Power Throttling feature, you can receive alerts when power consumption exceeds a value you have set. You can set two power throttling values: one for a warning and one for a critical alert. When the power consumption exceeds a defined power throttling value, IVP receives a throttling event, which is then displayed in the Power Throttling Indications table.

Click Enable to enable Power Throttling feature before attempting to set a value. The value you specify is for Watts.

etting Started Summar	y Monitor Manage Relate	d Objects	
ettings Networking St	torage Alarm Definitions Tags	Permissions IBM Upward Integration	
nables powerful platform	n management for IBM System	x, BladeCenter, and PureFlex servers.	
System Aler	ts and Events FW Upda	tes Power and Cooling Predic	tive Failures Configuration () () Help
General	General 💿		
Power History	You can set value for eac	h attribute of power metric, you must manually ena	able power monitoring on a host to view power metrics
	Attribute	Value	Actions
Thermal History	Host Monitoring	Enabled	Disable
Fan History	Poll Time	2013-05-03 14:29:19	
	Power Input	2180 watts	
	Thermal Input	22 °C	
	▶ Fan Input		
	Power Capping	Enabled	Disable
		130 watts Edit	
	Power Throttling	Enabled	Disable
	Manuface Throubles	120 Save Cancel	
Trial version 2.0	Warning Throttling		

Figure 18. Setting Power Throttling on vSphere Web Client

Viewing Power Usage History, Thermal Usage History, and Fan Usage History on the vSphere Web Client

The Power History, Thermal History, and Fan History charts are displayed on the right pane of the page. You can customize the duration and intervals for each of these charts.

Procedure

- 1. Click the Power and Cooling tab. For each of the history charts, you can:
 - Use the mouse wheel to zoom in and out of the charts, and use the drag and drop feature to move charts.
 - Click **Set Duration** to change the collection of history data to a different time interval.

2. Select one of the following options from the left pane.

General

On this page, you can set the value of each power metric attribute after enabling power monitoring on a host.

Power History

The Power Usage History chart provides power consumption readings for a 24-hour period.

Setting Started Summary	Monitor Manage Related Objects
Settings Networking Sto	rage Alarm Definitions Tags Permissions IBM Upward Integration
Enables powerful platform	management for IBM System x, BladeCenter, and PureFlex servers.
System Alert	s and Events FW Updates Power and Cooling Predictive Failures Configuration (1) Help
General	Power Usage History
Power History	Last 24 Hours V Per Hour
Thermal History	Power Consumption History for Last 24 Hours
	2200
Fan History	2000 -
	1800 -
	1600
	1400
	1200
	1000
	800 -
	400
	200 Capping Setting: 130
Trial version 2.0	
Expire in 42 days View More	0 05.02/14 48 38 05.02/18 48 38 05.02/22 48 38 05.03/2 48 38 05.03/06 48 38 05.03/10 48 38 05.03/14 48 38

Figure 19. Power Usage History for vSphere Web Client

Thermal History

The Thermal Usage History chart provides temperature readings for a 24-hour period.

ettings Networking Stor	age Alarm Definitions Tags Permissions IEM Upward Integration
nables powerful platform r	management for IBM System x, BladeCenter, and PureFlex servers.
System Alerts	and Events PW Updates Power and Cooling Predictive Failures Configuration (*) He
General	Thermal Usage History
Power History	Last 24 Hours . Per Hour .
Thermal History	Thermal History for Last 24 Hours
Fan History	24 22 - 20
	18 -
	14
Trial version: 2.0	
Expire in 42 days View More	0

Figure 20. Thermal Usage History for vSphere Web Client

Fan History

The Fan Usage History chart provides fan usage readings for a 24-hour period.

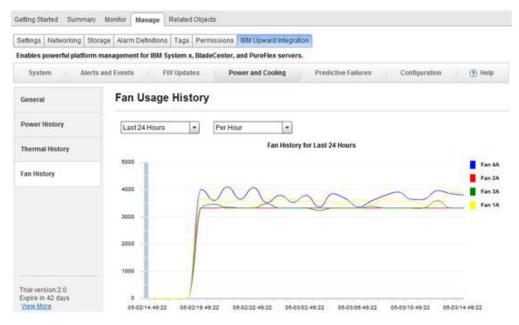


Figure 21. Fan Usage History for vSphere Web Client

Working with Configuration

The configuration page manages the system settings on the host. This includes settings for IMM, uEFI, and the boot order of the host.

Viewing Advanced System Settings

Configuration settings are listed in the left pane. The last update date and time is displayed to the right of **Refresh** button.

About this task

The following steps illustrate how to view two advanced system settings: IMM Port Assignments and Boot Order.

Procedure

- 1. Select IMM Port Assignments.
- 2. Click **Refresh** to get the latest advanced system settings values for IMM Port Assignments.

ettings Networking Stora	age Alarm Definitions Tags Permission	ons IBM Upward Integration			
ovides powerful platform ma	anagement for IBM System x, BladeCente	r, and PureFlex servers.			
System Alerts an	nd Events Firmware Updates	Power and Cooling	Predictive Failures	Configuration	Help
A Boot Order	IMM Port Assignment	ts 🤊			
uEFI Settings	Please save the changes when you Save Refresh Last up	ı finish the setting to make th date date: 2013-05-16 02:27:			
uEFI Processor				1	
uEFI Serial Port	Http	80		_	
uEFI COM1	Https	443		_	
uEFI Other Settings	IBM System Director over Http	5988			
IMM Serial Port	IBM System Director over Https	5989			
IMM Alerts	SSH	21			
IMM Port Assignments	Telnet	23			
IMM SNMP	0	1.0			

Figure 22. Viewing IMM Port Assignments

Some settings, such as uEFI settings, are only supported on a certain machine type or firmware version. If your host does not support a setting, it is disabled to indicate that it is not supported on your host.

3. Select Boot Order.

ettings Networking Stor	age Alarm Definiti	ons Tags	Permissions	IBM Upwar	d Integration				
rovides powerful platform n	nanagement for IBM	System x, Bl	ladeCenter, ai	nd PureFlex s	servers.				
System Alerts a	nd Events	Firmware Up	dates	Power and	Cooling	Predictive Failu	ires	Configuration	(?) Help
Boot Order	Boot Or	der 🤊							
uEFI Settings	You can view		Boot Order, V		boot order and	uEFI ROM order	r.		
uEFI Processor			3-05-15 21:38						
uEFI Serial Port	Boot	Device Order			Optional Device	e			
uEFI COM1	Hard	Disk 2 Disk 3 Disk 4			Hard Disk 0 CD/DVD Rom Embedded Hy				
uEFI Other Settings	PXE	letwork y Disk		Add	Legacy Only Hard Disk 1		Up		
IMM Serial Port		Storage lostics		Remove			Down		
IMM Alerts	iSCS iSCS	Critical							
IMM Port Assignments									
IMM SNMP	Save	Refres	sh						

Figure 23. Viewing Boot Order

Changing Advanced System Settings

This topic describes how to change advanced system settings on the host.

Procedure

- 1. To change an advanced system setting, enter the new value, and click **Save**. The change is executed on the endpoint.
 - If the change is successfully executed, the following symbol is displayed.

1

Figure 24. Setting change success symbol

• If the change is not successfully executed, the following symbol is displayed.

\otimes

Figure 25. Setting change not success symbol

To view detailed information about why the setting change failed, place the cursor over the symbol.

2. Click IMM Alerts to view the Alerts section of IMM Settings.

ettings Networking Storag	e Alarm Definitions Tags Pern	nissions IBM Upward Integration			
rovides powerful platform ma	nagement for IBM System x, BladeO	Center, and PureFlex servers.			
System Alerts an	d Events Firmware Update	s Power and Cooling	Predictive Failures	Configuration	Help
-	IMM Alerts @				
Boot Order	INIM AICI 13 U				
uEFI Settings	Please save the changes whe	n you finish the setting to make th	em effective.		
	Save Refresh La	st update date: 2013-05-16 02:24:	45		
uEFI Processor					
uEFI Serial Port	Alert Recipient Email	someone@cn.ibm.cor	m 🗹		
	Alert Recipient Name	2	î		
uEFI COM1					
uEFI Other Settings	Critical Alerts	Disabled	•		
		C2/2/////			
IMM Serial Port	Delay between entries	0.0 minutes	•		
IMM Alerts	Delay between retries	0.5 minutes	•		
	Recipient Include EventLog	Disabled			
IMM Port Assignments	Reapient include Evenicog	Lisabled			
IMM SNMP	Remote Alert Recipient Status	Disabled	•		
-				_	

Figure 26. Viewing IMM Alerts

Example

The following list provides an example for some of the different types of settings and how to change these settings. The manner in which each setting is changed varies.

text string:

Before you enter any information, a prompt showing the requirements is displayed. If the information you entered does not match the requirements, place the cursor over the text string to view the description.

selection type:

Select the value from the drop-down menu.

boot order:

The left column displays the current boot order, and the right column displays the optional device. To change the order, you can move a boot order option up or down and between the two columns, by clicking the corresponding button.

Managing hardware events

The topics in this section describe IBM hardware events and alarms that are integrated into vCenter.

Prerequisites

This topic provides information about prerequisites for managing hardware events.

Before you begin

Complete the following prerequisite steps before updating the firmware.

Procedure

- 1. vCenter server has Out-Of-Band network connection with IMM of managed esxi servers, you can find the IMMs and request the IMMs access on cluster overview page.
- Enable TCP on the https port that you selected for IBM Upward Integration for VMware VSphere. The default is 9500 when you install IVP. IBM Upward Integration for VMware VSphere listens on this port for incoming indications.

Events

IBM Upward Integration for VMware vSphere loads events from IMM nodes Out of Band into vCenter Server, enabling administrators to view and manage them from the vSphere Web Client. This provides administrators with a single, heterogeneous view of all host system events within the managed environment. To view IBM hardware events, navigate to the Events tab in the vSphere Web Client.

Alarms

When an IBM event is delivered to vCenter Server, the overall host status changes based on the corresponding event severity. An alarm is triggered when the changes to the host status meet the criteria assigned by the administrator.

When an alarm occurs, an icon appears to the right of the vSphere Client window along the bar above the vSphere Client tabs or on the host icon in the inventory tree.

Click the alarms icon to view alarms contained in the **Alarms** tab. The Alarms tab displays a list of all alarms.

Chapter 4. Using IBM Upward Integration for VMware vSphere with vSphere Client

The topics in this section describe how to use IBM Upward Integration for VMware vSphere with vSphere Client.

IBM Upward Integration for VMware vSphere with vSphere Client provides the following functions:

- Dashboard
- Dynamic System Analysis
- Firmware updates
- Power Metric
- Advanced System Settings

You can navigate to each of these functions from the navigation pane on the left side.

Working with the Dashboard

The Dashboard displays an overview of the host status.

It provides summaries of:

- System Information
- System Health
- Power Throttling
- Predictive Failure Alerts

System Information Summary

System Information Summary contains information about the managed host.

The System Information Summary provides the following information:

- Manufacturer
- Model
- Serial number
- Operating system
- · Operating system version
- Last boot

The System Health, Power Throttling, and Predictive Failure Alert Summaries

These summaries contain an overview of the system running status (health messages from the host), the power throttling status, and PFA status.

All the messages are grouped into three categories by severity.

- *Critical events* are events that can or already have caused a host failure that requires your immediate attention.
- *Attention events* are events that indicate that there is something abnormal on the host but the abnormality will not cause immediate failure of the host.
- *Information Events* are events that indicate that something happened on the host that will not inhibit the host running.

Each of the Summary categories is grouped in an accordion box. The title indicates how many events are in the category. Because the events are effective for a limited period, a maximum of 20 events are shown in each category; however, you can check all power throttling events on the Power Metric page and all PFA indication events on the Predictive Failure Management page.

If you click on the title, the box extends and lists the following information:

- Message
- Event time
- MessageID

peration Dashboard	System Health	System Summary		
 Dashboard System Analysis Firmware Update Power Metric Advanced Setting Predictive Setting Management 	Shows health of your system in a number of different categories. Shows health of your system in a number of different categories.	Manufacturer: IBM Model: IBM System x-[7870B4A]- SerialNumber: 99L5825 Operating System: VMware ESXI		
	Critical Events(4)	OS Version: 5.0.0 build-623860 Last Start Time: 2012/09/27 14:18:0		
	Attention Events(4)			
	Information Events(20)			
	Power Throttling			
	Critical Events			
	Attention Events(1)			
	Message ID Time Stamp Message			
	UIM0001 2012-10-09 15:42:01 Power usage of 70 above set warning threshold of 40			
	Information Events			

Figure 27. System Health Summary Dashboard view

Working with Dynamic System Analysis

Dynamic System Analysis collects and analyzes system information to aid in diagnosing system problems.

Dynamic System Analysis collects information about the following aspects of a system:

- System configuration
- · Installed applications and hot fixes
- · Device drivers and system services
- · Network interfaces and settings
- Performance data and running process details
- Hardware inventory, including PCI information
- Vital product data and firmware information
- SCSI device sense data
- ServeRAID configuration
- Application, system, security, ServeRAID, and service processor system event logs

The plug-in provides functions inherited from the standalone Dynamic System Analysis and provides an organized view that you can use to do the following functions:

- Launch system inventory collection
- View and manage system inventory history
- View the categorized system inventory results

Working with Firmware Updates

The firmware update function applies the latest UpdateXpress System Packs and individual updates to your ESXi system. The UpdateXpress System Packs contain updates for Windows and Linux firmware.

Use this function to obtain and deploy UpdateXpress System Packs firmware updates and individual firmware updates.

The main functions of Firmware Updates are:

• Acquire Updates

The Acquire Updates function downloads the UpdateXpress System Pack and individual updates for supported server types from a remote location such as IBM support.

• Compare and Update

Compare and Update performs the following functions:

- Inventories the system on which the update is being performed
- Queries the update directory for a list of applicable update packages
- Compares the inventory to the applicable update list
- Recommends a set of updates to apply
- Deploys the updates to the system

Prerequisites

This topic provides information for completing the necessary prerequisites for updating firmware.

Before you begin

Complete the following prerequisite steps before updating the firmware.

Procedure

- 1. Enable **Commands** on the USB interface in uEFI by changing the uEFI settings.
- 2. Reboot the host.

Firmware update scenarios

The topics in this section describe two scenarios for firmware updates: updating a remote server from the IBM website and updating a remote server from a local directory.

Updating a remote server from the IBM website

The firmware update function can update a remote ESXi host with either UXSPs or individual updates that are acquired from the IBM website.

About this task

Perform the following steps to update a remote server from the IBM website.

Procedure

- 1. Click **Update Link** in the navigation pane on the left.
- 2. On the Updates page, select IBM website.

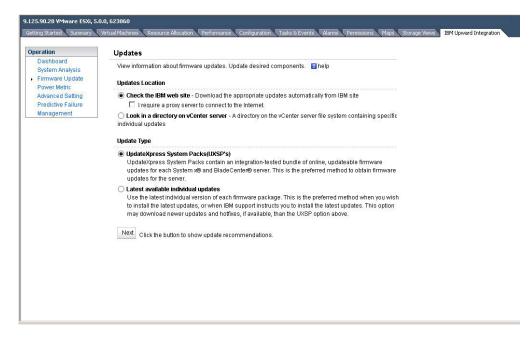


Figure 28. Updates page

- 3. On the HTTP Proxy Setting page, specify the proxy information if required.
- 4. On the Update Type page, select the type of updates you want to acquire. Possible updates are:
 - UpdateXpress System Packs (UXSPs) contain an integration-tested bundle of online, updatable firmware and device driver updates for each system. This is the preferred method for obtaining firmware updates for the server.
 - **Individual updates** use the latest individual version of each firmware and device driver package. This is the preferred method when you want to install the latest updates, or when IBM support instructs you to install the latest updates. This option can download newer updates and hotfixes, if available, than the UXSP option.
- 5. Click Next. The Update Recommendation page is displayed.

Firmware Update	Update Type							
Power Metric Advanced Setting Predictive Failure Management	UpdateXp updates fo	UpdateXpress System Packs(UXSP's) UpdateXpress System Packs contain an integration-tested bundle of online, updateable firmware updates for each System xM and BladeCenterM server. This is the preferred method to obtain firmware updates for the server.						
	Latest available individual updates Use the latest individual version of each firmware package. This is the preferred method when you wish to install the latest updates, or when IBM support instructs you to install the latest updates. This option may download newer updates and hotfixes, if available, than the UXSP option above. Next Click the button to show update recommendations. Update Recommendation The information below shows which components need updating. This information about your system is							
	The information		odating.This inforr	nation about your sys	tem is			
	The information current as of 2	on below shows which components need up 2012-10-8 2:44:45.	odating,This inforr	nation about your sys	tem is			
	The information current as of 2	on below shows which components need up	odating.This inforr Severity	nation about your sys	tern is Installed '			
	The information current as of 2	on below shows which components need up 0012-10-8 2:44:45. cted components	-	-				
	The informatic current as of 2 Update sele	on below shows which components need up 0012-10-8 2:44:45. cted components Name	Severity	New Version	Installed			
	The informatic current as of 2	on below shows which components need up 2012-10-8 2:44:45. teted components Name IBM uEFI Flash Update IBM Dynamic System Analysis (DSA)	Severity Not Required	New Version 1.18 (P9E157A)	Installed ' 1.18 (P9E 3.33 (DS'			

Figure 29. Update Recommendation example

9.1 sttin

6. On the Update Recommendation page, make the required changes and then click **Update**.

The plug-in acquires the updates from IBM website. The progress bar indicates that the installer is processing, and shows the percentage of progress completed. If necessary, click **Cancel** to stop the download. Once you click **Cancel**, the **Cancel** button is replaced with the **Begin** button. Use the **Begin** button to resume the download.

eration	Acquire Updates		
Dashboard System Analysis Firmware Update	You are now ready to begin downloading (if applicable) and installing your update(s). No changes have been made to your system, so you can choose at this point not to install the update(s). 👔 help	• 1	
Power Metric Advanced Setting Predictive Failure Management	ູ່າາ _ຂ Acquiring update(s) ຈັກເຮັ		
inditing official and a second s	Cancel		
	Next		

Figure 30. Acquire Updates

 After all the selected downloads are complete, click Next.
 On the ESXi credentials page, enter the administrative account information of the target ESXi, and click Next.

peration	Update Authentification
Dashboard System Analysis	Input administrator's credentials of the target machine for update. 😰 help
Firmware Update Power Metric	ESXi host User Name and Password
Advanced Setting Predictive Failure	Username: root
Management	Password:
	Next

Figure 31. Update Authentication page

The Update Execution page is displayed while the updates are installing to the target host. The progress bar indicates that the installer is processing, and shows the percentage of progress completed.

Operation	Update execution			
Dashboard System Analysis Firmware Update Power Metric Advanced Setting Predictive Failure Management	Installing your updates. 🖬 help	_		
Management	Name	New Version	Reboot	Status
	IBM uEFI Flash Update	1.18	Reboot Required to take effect	Successfully Installed
	Integrated Management Module Update	1.33	Not Required	Successfully Installed
	Finish			

Figure 32. Update execution page

8. After the updates are applied, click **Finish** to complete the update.



Figure 33. All updates successfully applied

Updating a remote server from a local directory

The firmware update function can update a remote ESXi host with either UXSPs or individual updates that are stored in a directory (repository) on the vCenter server.

Procedure

- 1. Click Update in the navigation pane on the left.
- 2. On the Updates page, select **Look in a directory on vCenter server**. A gray text box displays the absolute path of the directory. Once the plug-in is installed, it is a fixed directory. You must save all updates there manually, before the update.
- 3. On the Update Type page, select the type of updates you want to acquire.
- 4. Click Next. The Update Recommendation page is displayed.
- 5. On the Update Recommendation page, make the required changes, and then click **Update**.
- 6. On the ESXi credential page, enter the administrative account information of the target ESXi host, and then click **Next**.

The Update Execution page is displayed while updates are installed on the target host. The progress bar indicates the installer is processing, and shows the percentage of progress completed.

7. After the updates are applied, click **Finish** to complete the updates.

Working with Power Metric

Power Metric shows the power usage, thermal, and fan speed values and the trend for a managed host. This information is helpful for determining whether to reassign the workload. Power capping sets the upper limit of power work. Power throttling allows you to receive warning or critical alerts when power consumption exceeds the values you set.

Enabling and disabling Power Metric

To use the Power Metric features, enable Power Metric on a host.

The **Enable** button is visible when Power Metric is not enabled on a host. When you click **Enable**, a dialog box requiring credentials for the host is displayed. After you enter the correct credentials for the host, the monitoring of power usage begins.

You can disable the monitoring by clicking **Disable**.

Enable **Commands** on the USB Interface in uEFI by changing the uEFI settings before booting the OS.

	Power Metric		Power Information
peration Dashboard System Analys Firmware Upd	View information about power usage put credentials	Enable	Power Input: 70 Watts Thermal Input: N/A Fan Input: N/A Poli Time: 2012-10-9 16:17:17
Power Metric P Advanced Sett	lease input host credentials		Power Capping: N/A
Predictive Faile Management	User name:	e of Last 24 Hours (Per Hour)	Power Throttling: N/A Edit
	Password:	Set Duration F	
	Confirm Cancel		
	60		
	40		
	30		
	20		
	10		
	2012-10-8 16:18	2012-10-9 2012-10-9 02:18 12:18	
		Time (Year-Month-Date Hour:Min)	

Figure 34. Enabling Power Metric

Viewing the power usage, thermal history, and fan summary

The power usage, thermal history, and fan summaries are displayed on the right pane of the page. If the host is being monitored, the current power usage, thermal history, fan summary, and the time of the monitor reading are shown. Click **Refresh** to see the latest reading for the power usage, thermal history, and fan summary.

Viewing the Power Usage, Thermal History, and Fan Summary charts

The default Power Usage, Thermal History, and Fan Summary charts provide power usage information for the past 24 hours in 1-hour intervals.

You can customize the duration and intervals of the Power Usage chart. Click **Set Duration** to view the power usage history data for a different period. Select the required duration and interval.

ile Edit View leventory Administr	ation Elug-ins Help					
🖸 🔯 🧑 Home 🕨 🕂 Soven	tory 🕨 🚰 Hosts and Qusters				1 Search Inventory	
at et 98						
WCENTER_SERVER_ H New Datacenter 115.232.193 9.115.232.193 9.115.232.193	9.115.272.195 VMware FST Getting Stated Sommary Operation Deshboard		Contrait. Performance. Configuration. Tasks & Events. Alarmo. Pe Power Usage of Last 24 Hours (Per Hour) Get Dural	nissiona Maps on Retresh	Storage Views, Hardwere Status, 10H	Upward Integration
	System Anarysis Firmwaras Update Advanced Setting					
		Different Different Status	Internal History of Last 24 Hours (Per Hour) Set Duration (Set D	cn Retresh		

Figure 35. Power Usage Chart

The following figure provides an example of the Thermal History Chart.

🖉 VC3 N I III 12 IIVI K - Viiphere Clent						
Sie Edit View Apertory Admini-	duction Dup ins Hdp				1997 N	
D D A MAN & AT ANA	anny 🕒 🎯 Hussiani thatas				Start's Deard's Landarian y	Q
0 * *						
E 🙆 VORVER, SERVER, Z 🛃 Non Deutscher	9.115.454.184 VPWwww.85	RI, 5.0.0, 923890				
H 10 9 115 252 184	Coding Starter Summary	Vitual Hadines Theaton	Alloudest Performance Unifigeration Lauka & Erceta Alfant		pa Ubborage wana "Handhard Status	BH Upward Income CI
9 115 252 195	Operation		Thermal History of Last 24 Hours (Per Hour)			<u>.</u>
1 9.115 252 195	Desribeard	Thernel Story	805	Ourston Refrest		
	Bystom Analysis					
	Firmware Update	10 -				
	Power Matrix Advanced Setting	40 47		1		
	manantasis arcany	10 12 -		1		
		12 -				
		3.8 10 -				
		10 1				
		10-				
		2		1		
		- 10 -		- 1-		
		10 - 				
		4				
		17 I		- 1		
		3151-8-3	milere and	24		
		0001		.e.		
			Time (Hear-Month-Data Hour Min)			
			Fan History of Last 24 Hours (Per Hour)	Curston Refeat		
		Tan I Bettery	805	COLOR Meters		
		same .			1	
				E	Lon 1A	
		-			F10 18	
	1	tree d			1 sti 24	
lecrest Tanks				14.	net Target or Salar sonking. •	(DAN)

Figure 36. Thermal History Chart

The following figure provides an example of the Fan Chart.

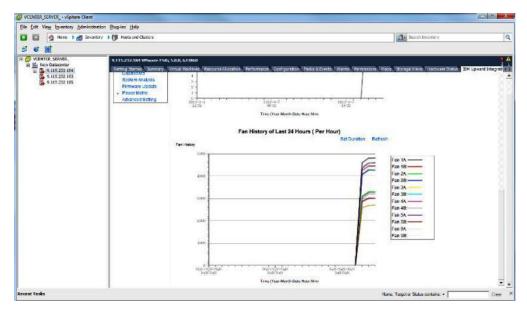


Figure 37. Fan Chart

Setting Power Capping

The Power Capping feature allows you to allocate less power and cooling to a system. This feature can help lower datacenter infrastructure costs and potentially allow more servers to be put into an existing infrastructure. By setting a power capping value, you can ensure that system power consumption stays at or below the value defined by the setting. The power capping value is the value you set for a rack or blade server that will be capped by the firmware, if the firmware supports capping. The power capping value is persistent across power cycles for both rack and blade servers.

🕨 🚮 Inventory 🕨 🕅 Hosts a	and Clusters		Search Inventory
	, 5.1.0, 799733 Evaluation (54 day		
Getting Started Summary Operation System Analysis	Power Metric	Performance Configuration Tasks & Events Alarms Permissions	Maps Storage Vews Hardware Status IBM Upw Power Information Power Input: 170 Walts
Dashboard Firmware Update	View information about power	usage. 🖬 help	Thermal Input: 23 °C Fan Input:
Power Metric Advanced Setting Predictive Failure	Click the button to disable hos	tmonitoring. Disable	Fan No. Fan Speed 1A 3440/min
Management	р	ower Usage of Last 24 Hours (Per Hour) Sei Duration Refi	2A 3440/min
	Power Usage (Watts)		3A 3440/min 4A 3400/min
	200 150 180 170 160 150	Set Power Capping for this machine	Poll Time: 2012-11-11 23:13:26 Power Capping: 190 Wats Edit Power Throttling: NA Edit
	140 - 130 - 120 - 110 -	190 OK Cancel	Refresh
	100 - 80 - 80 - 70 -		
	60 - 50 - 40 - 30 -		
	20 - 10 - 2012-11-10 23:34	2012-11-11 2012-11-11 00:14 19:14	-
		Time (Year-Month-Date Hour, Min)	

Figure 38. Setting Power Capping

Setting Power Throttling

By setting a value for Power Throttling, you can receive alerts when power consumption exceeds the value you set. You can set two Power Throttling values individually: one for a warning and one for a critical alert. When the power consumption exceeds a defined Power Throttling value, IBM Upward Integration for VMware vSphere with vSphere Client receives a throttling event, which is then displayed in the Power Throttling Indications table.

	Power Metric		Power Information
Iperation Dashboard System Analysis Firmware Update • Power Metric Advanced Setting Predictive Failure Management	View information about powe	Dischla	Power Input: 70 Watts Thermal Input: NA Fan Input: NA Poll Time: 2012-10-9 16:17:17 Power Capping: 2291 Watts Edit Power Throttling: NA Edit
	5 11 441113	Set Duration Refre	sh Refresh
	Power Usage (Watts)	Set Power Throttling for this machine	
	50	Set Warning Throttling (Watts): 40 Set Critical Throttling (Watts):	
	40	80 OK Cancel	
	20		
	10 -		
	0 2012-10-8	2012-10-9 2012-10-9	1

Figure 39. Set Power Throttling

5.90.28 ¥Mware ESXi, 5.0	0 622060							
		Decourse állo	ration Derforman	nce Coofig	uration Tacks & Events	Marme Permission	nc Mane Storage Viewe	IEM Lipward Integration
Ing Stated Summary System Analysis Firmware Update Power Metric Advanced Setting Predictive Failure Management	Virtual Machines Fan History	Resource Allo	Performan	nce Configu	Tasks & Events	Alarms Permission	ns Mapo Storage Views	IBM Upward Integration
	2012-10- 16:18			2012-10-9 02:18		2012-10-9 12:18		
	2012-104 16:18 Power Thro			02:18	inth-Date Hour.Min)	2012-10-9 12.18		
	16:18 Power Thro	ttling		02:18	nth-Date Hour.Min)	2012-10-9 12:18		
	16:18 Power Thro	ttling	т	02:18 Time (Year-Mo	inth-Date Hour:Min)	2012-10-0 12:18		7
	16:18 Power Thro	ttling ver Throttling Message	T Indications(2)	02:18 'ime (Year-Mo Me :		12:18		

Figure 40. Power Throttling Indications

Working with Advanced System Settings

The Advanced System Settings page shows the current system settings on the host. This includes settings for IMM, uEFI, and the boot order of the host.

Viewing Advanced System Settings

This topic describes how to view Advanced System Settings on the host.

Settings are grouped into three categories represented by the following three tabs:

- IMM Settings
- uEFI Settings
- Boot Order Settings

Settings in each tab are further categorized into expandable subsections. You can easily find a setting by expanding the subsection. On the initial view, each subsection provides a description of the field functions. Scroll down to view all of the fields.

To view a setting, click to expand and display all of the settings with a subsection.

Operation	Advanced System Settings								
Dashboard System Analysis Firmware Update Power Metric • Advanced Setting Predictive Failure Management	Configure IMM, uEFI and boot order settings. 🛜 The red X indicates that an error occurred during retrieval or setting of values. Hover the cur over the X to view more details about the error.								
	IMM Boot Order UEFI								
	IMM Settings								
	Alerts								
	Remote Alert Recipient Status	Disabled	•	Save					
	Alert Recipient Name	4		Save	<u>.</u>				
	Alert Recipient Email			Save					
	Recipient Include EventLog	Disabled	•	Save					
	Remote alert retry limit	0 times	•	Save					
	Delay between entries	1 minutes	•	Save					
	Delay between retries	1 minutes	•	Save					
				Save Alert Settings					

Figure 41. Viewing Advanced System Settings

Some settings, such as uEFI settings, are only supported on a certain machine type or firmware version. If your host does not support a setting, the following symbol is displayed to indicate this setting is currently not supported on your host:

0

Figure 42. Setting not supported symbol

Changing Advanced System Settings

This topic describes how to change Advanced System Settings on the host.

To change an Advanced System Setting, change the value to the required value, and then click **Save**. The change is executed on the endpoint, and the following symbol is displayed when complete.

Figure 43. Setting change is successful symbol

If there is a problem with the setting change, the following symbol is displayed:

Figure 44. Setting change is not successful symbol

To view detailed information about why the setting change failed, place the cursor over the symbol.

You can also click **Save xxx Settings** in each section, to save all the settings contained within that section. This will not impact settings in other sections. The setting result for each setting will show up as a single setting result. The following image provides an example of the Alert section in IMM Settings. To save all settings in the IMM section, click **Save Alert Settings**.

Operation	Advanced System Settings									
Dashboard System Analysis Firmware Update Power Metric Advanced Setting Predictive Failure Management	Configure IMM, uEFI and boot order settings. 📳 The red star(") indicates that the user has changed the setting. The red X indicates that an error occurred during retrieval or setting of values. Hover the cu over the X to view more details about the error.									
	IMM Boot Order uEFI									
	IMM Settings									
	Alerts									
	Remote Alert Recipient Status	Disabled	•	Save						
	Alert Recipient Name	4		Save						
	Alert Recipient Email			Save						
	Recipient Include EventLog	Enabled	•	Save	0					
	Remote alert retry limit	0 times	•	Save						
	Delay between entries	1 minutes	•	Save						
	Delay between retries	1 minutes	•	Save						
				Save Ale	Settings					

Figure 45. Changing Advanced System Settings

The following list provides an example for some of the different types of settings and how to change these settings. The manner in which each setting is changed varies.

- *text string*: Place the cursor on the text string to view the type of required input.
- *selection type*: Select the value from the list.
- *password*: Enter the password and then re-enter the password to confirm the new password. Click **Clear the password** to clear the password field.

Note: Save and **Clear the password** are executed immediately on the managed endpoint.

• *boot order*: The left column shows the current boot order, and the right column shows the optional device. To change the order, you can move a boot order option up or down and between the two columns, by clicking the corresponding button.

Appendix A. Troubleshooting

The topics in this section will assist you with troubleshooting.

Help information

Online help is available from each page through one or more links. When you click on one of these links, online help is displayed.

Finding the version of the plug-in

This topic describes how to find the plug-in version.

- 1. In the vCenter interface, select **Plug-in** > **Manage Plug-in**.
- Locate IBM Upward Integration for VMware vSphereIBM Upward Integration for VMware vSphere. The version column displays the version of the installed plug-in.

Site certification

Each time you activate the plug-in on a host, you are asked to trust the certification of the site. Click **Yes** to trust the certification.

This also occurs the first time you access a help link. Click **Yes** to trust the certification.

First time loading page

Each time you switch to a different host and activate the plug-in, a loading page is displayed. Loading typically lasts about 1 or 2 minutes. During that time the plug-in is gathering the required host information for the managed host.

Poll Status displays N/A on Power Metric

The Poll Status represents the status of the latest poll.

About this task

If the Poll Status displays N/A, perform the following steps:

Procedure

1. Verify that Power Monitoring is enabled for a host. You must wait for a few minutes after Power Monitoring is enabled.

The Power Monitoring windows service is started.

2. Click Refresh to view the latest power information.

Poll Status displays Failed on Power Metric

This topic can assist you with resolve a Poll Status that displays Failed.

About this task

If the Poll Status displays Failed, verify the following:

Procedure

- 1. The host is Alive.
- 2. The network connection between vCenter and the host is OK.
- 3. The CIM Object Manager (CIMOM) is running on the host.
- 4. The credentials for the host have not changed since you enabled the Power Monitoring on the host.

If you changed the credentials for the host, you will need to disable and enable the Power Monitoring again to input new credentials for polling.

Acquire Ticket Failure

If an Acquire Ticket Failure is displayed on the Dashboard during a Dynamic System Analysis or during Firmware Update, either the vCenter Server status is incorrect or the vCenter connection to the managed ESXi endpoint is temporarily inaccessible.

Procedure

- 1. Wait and retry.
- 2. Restart the vSphere Client.
- 3. Restart the vCenter Server.

Note: You must have administrator privileges to restart this server.

4. Check the network connectivity from the vCenter Server to the ESXi endpoint.

Installed version field shows Undetected in firmware updates

The **Installed version** field in the firmware update recommendation table indicates Undetected.

About this task

If the $\ensuremath{\textbf{Installed version}}$ field displays <code>Undetected</code>, try restarting the IMM and ESXi host.

Connection to the plug-in

After loading the plug-in, an error message is displayed indicating Fail to connect server or Unable to find the server.

About this task

The vSphere client uses the Internet Explorer proxy to connect to the plug-in server.

Procedure

- 1. Check your Internet Explorer configuration.
- 2. Verify that it can connect to the server where the plug-in is installed.

IMM Discovery Failure

If the IMM Discovery list is not displaying correctly, the IMM discovery process has failed.

About this task

If the discovery list fails to display after clicking **Discovery**, do the following:

Procedure

- 1. Verify the network connection between vCenter and the host is Ok.
- 2. Try the discovery process again by clicking the Discovery.

Appendix B. Accessibility features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products successfully.

IBM strives to provide products with usable access for everyone, regardless of age or ability.

IBM Upward Integration for VMware vSphere, Version 3.0.1 Installation and User's Guide supports the accessibility features of the system-management software in which they are integrated. Refer to your system-management software documentation for specific information about accessibility features and keyboard navigation.

Tip: The VMware vSphere topic collection and its related publications are accessibility-enabled for the IBM Home Page Reader. You can operate all features by using the keyboard instead of the mouse.

You can view the publications for IBM Upward Integration for VMware vSphere, Version 3.0.1 in Adobe Portable Document Format (PDF) by using the Adobe Acrobat Reader. You can access these PDFs from the IBM Upward Integration for VMware vSphere, Version 3.0.1 Installation and User's Guide product site.

IBM and accessibility

See the Human Ability and Accessibility Center website for more information about the commitment that IBM has to accessibility.

Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries.

Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing IBM Corporation North Castle Drive Armonk, NY 10504-1785 U.S.A.

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product, and use of those websites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Trademarks

IBM, the IBM logo, and ibm.com[®] are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol ([®] or TM), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published.

Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the web at Copyright and trademark information at http://www.ibm.com/legal/copytrade.shtml.

Adobe and PostScript are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, other countries, or both.

Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc., in the United States, other countries, or both and is used under license therefrom.

Intel, Intel Xeon, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Java^m and all Java-based trademarks are trademarks of Sun Microsystems, Inc., in the United States, other countries, or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

VMware, vCenter, and vSphere are trademarks of VMware Corporation in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.

Important notes

View important assumptions about terminology and claims.

Processor speed indicates the internal clock speed of the microprocessor; other factors also affect application performance.

CD or DVD drive speed is the variable read rate. Actual speeds vary and are often less than the possible maximum.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1024 bytes, MB stands for 1•048•576 bytes, and GB stands for 1•073•741•824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1•000•000 bytes, and GB stands for 1•000•000 bytes. Total user-accessible capacity can vary depending on operating environments.

Maximum internal hard disk drive capacities assume the replacement of any standard hard disk drives and population of all hard disk drive bays with the largest currently supported drives that are available from IBM.

Maximum memory might require replacement of the standard memory with an optional memory module.

IBM makes no representation or warranties regarding non-IBM products and services that are ServerProven, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

IBM makes no representations or warranties with respect to non-IBM products. Support (if any) for the non-IBM products is provided by the third party, not IBM.

Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

Index

Α

about this publication ix accessibility features 67 Acquire Ticket Failure 64 activating the premium features 7 Adobe Acrobat Reader xi Advanced Settings Utility 2 Advanced System Settings 59 Applying firmware updates 49

В

Blade System 4 BladeCenter ServerProven site xii boot order 59 Boot Order Settings 59

С

changing advanced system settings 60
changing Advanced System Settings on the vSphere Web Client 43
connection to the plug-in 65
conventions and terminology ix

D

Dashboard 47, 64 disabling Power Metric 54 Dynamic System Analysis 1, 49, 64

E

enabling and disabling power monitoring on the vSphere Web Client 38 enabling Power Metric 54 ESXi 3 ESXi 4.1 8, 10 ESXi 5.0 9, 10 ESXi 5.1 9 ESXi 5.x 10

F

fail to connect server 65 Fan Summary 55 Fan Usage History 39 finding the version of the plug-in 63 firmware update 65 firmware update scenarios for the vSphere Web Client 34 Firmware updates 49, 64 Firmware Updates 2 First time loading page 63

Η

Help Information 63

© Copyright IBM Corp.

IBM Systems Management site xii IBM Systems Technical support site xi IBM UpdateXpress System Packs 2 IBM Upward Integration for VMware vSphere 1 IBM Upward Integration for VMware vSphere site xi IMM 59 IMM Discovery failure 65 IMM discovery process 65 IMM Settings 59 important notes 71 Individual Updates (UXSP) for the vSphere Web Client 36 information resources xi Installed version field 65 installing and removing the IBM Upward Integration for VMware vSphere Provider bundle 7 installing IBM Upward Integration for VMware vSphere 3, 5 installing the bundle 8, 9 installing the IBM License Tool 7 installing the IBM Upward Integration for VMware vSphere bundle 8 Installing the IBM Upward Integration for VMware vSphere provider bundle using VMware Update Manager 8

L

launching system inventory for the vSphere Web Client 30

Μ

managed ESXi endpoint 64 managed host 47 managing hardware events 45

Ν

notices 69

0

Online help 63

Ρ

pdf files xi Poll Status 63, 64 Poll Status displays Failed 64 Poll Status displays N/A 63 Power Metric 2, 54 Power Usage 55 Power Usage Chart 55 Power Usage History 39 Predictive Failure Management 3 Prerequisites 45, 50 prerequisites for updating firmware on vSphere Web Client 33

R

Recommended Updates (UXSP) for the vSphere Web Client 34 removing the bundle 10 removing the bundle using VMware vSphere CLI 10

S

selecting update preferences on the vSphere Web Client 33 setting Power Capping 57 setting Power Capping on vSphere Web Client 38 setting Power Throttling 58 setting Power Throttling on vSphere Web Client 39 Site Certification 63 supported hardware 4 supported operating systems 3 System Health Summary 48 System Information Summary 47 system requirements for IBM Upward Integration for VMware vSphere 3 System settings 42 System X 4 System x ServerProven site xii

Т

Thermal History 55 Thermal Usage History 39 trademarks 70 Troubleshooting 63

U

uEFI 59 uEFI Settings 59 unable to find the server 65 updating a remote server from a local directory 54 updating a remote server from the IBM website 50 USB interface 50 using IBM Upward Integration for VMware vSphere with vSphere Web Client 13 Using IBM Upward Integration with VMware vSphere 47 UXSP 2

V

vCenter xii vCenter Server status 64 viewing Action History table 28 viewing advanced system settings 59 viewing Advanced System Settings on the vSphere Web Client 42 viewing Predictive Failure Events on the vSphere Web Client 28 viewing System Overview on vSphere Web Client 29 viewing the categorized analysis results for vSphere Web Client 31 viewing the Power Usage Chart 55 VMware xii, 13, 47 VMware vCenter 4.1 3 VMware vCenter 5.0 (U1) 3 VMware vCenter Server 3 VMware vSphere Command Line Interface 8 VMware vSphere Provider bundle 7 vSphere Web Client 13, 39

W

Web resources xi working with Advanced System Settings 59 working with Alerts and Events on vSphere Web Client 31 working with Configuration 42 working with Dynamic System Analysis 49 working with Firmware Updates on vSphere Web Client 32 working with Power Metric 54 working with System Analysis on vSphere Web Client 29 working with the Dashboard 47 working with the Power Metric on the vSphere Web Client 37

Readers' Comments — We'd Like to Hear from You

IBM System x IBM Upward Integration for VMware vSphere Installation and User's Guide Version 3.0.1

We appreciate your comments about this publication. Please comment on specific errors or omissions, accuracy, organization, subject matter, or completeness of this book. The comments you send should pertain to only the information in this manual or product and the way in which the information is presented.

For technical questions and information about products and prices, please contact your IBM branch office, your IBM business partner, or your authorized remarketer.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you. IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you state on this form.

Comments:

Thank you for your support.

Send your comments to the address on the reverse side of this form.

If you would like a response from IBM, please fill in the following information:

Name

Address

Company or Organization

Phone No.

Email address



Cut or Fold Along Line





Printed in USA