

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

Version 2.0



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Note

Before using this information and the product it supports, read the information in "Notices" on page 57.

Edition Notice

This edition applies to version 2.0 of IBM Upward Integration for VMware vSphere and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this publication

This book provides instructions for installing IBM[®] Upward Integration for VMware vSphere V 2.0 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 2.0 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 sites

Chapter 1. IBM Upward Integration for VMware vSphere

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

IBM Upward Integration for VMware vSphere is an extension for the VMware vSphere management environment. IBM Upward Integration for VMware vSphere provides enhanced management capability to run the following features:

- Dashboard
- Dynamitic System Analysis
- IBM UpdateXpress System Package Installer
- Power Metric on managed ESXi host
- View and change advanced system settings
- Predictive Failure Management

IBM Upward Integration for VMware vSphere provider bundle enables the management features on the managed ESXi endpoints. This component must be installed on the ESXi host manually to access all management functions of the IBM Upward Integration for VMware vSphere. The Provider bundle is contained in the offline-bundle.zip file and can be found in the IBM Upward Integration installation package.

Dashboard

The Dashboard provides an overview of the host status including a system information summary and system health messages.

Dynamic System Analysis

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

UpdateXpress System Package Installer

UpdateXpress System Package Installer is a firmware update function that applies the UpdateXpress System Packs and individual updates to your ESXi system. Use this function to acquire and deploy IBM UXSP firmware updates and individual firmware updates.

Power Metric

Power Metric monitors power usage, thermal, and fan speed values of the ESXi host and graphically displays this information to aid in balancing workloads on hosts. 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 once power consumption exceeds the value you set.

Advanced Settings Utility

Advanced Settings Utility provides a system settings management interface. You can view and configure IMM, uEFI, and boot order settings on the managed endpoint. This utility provides an interface to view and change frequently used settings. Use the IMM and uEFI interfaces to change unsupported settings in IBM Upward Integration for VMware vSphere.

Predictive Failure Management

Predictive failure management monitors the server hardware status and receives predictive failure alerts. You can set the management policy against the server based on a predictive failure alert. IVP will evacuate VMs from the host or notify you based on the policy you set. Predictive failure management is manually enabled or disabled on a host.

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 plug-in is an extension to the VMware vCenter Server. It supports VMware vCenter Server 4.1 (U1, U2, U3), 5.0 (U1, U2), and 5.1(U1).

Supported operating systems

The 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

Supported ESXi version

The plug-in only supports IBM customized ESXi 4.1 (U1, U2, U3), 5.0 (U1, U2), and 5.1 (U1) images. You can download IBM customized ESXi from IBM x86 solutions for VMware: http://www-03.ibm.com/systems/x/os/vmware/.

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)
	Smart Analytics System (7949)
	x3100 M4 (2582)
	x3200 M2 (4367, 4368)
	x3200 M3 (7327, 7328)
	x3250 M2 (7657, 4190, 4191, 4194)

Table 2. Supported	hardware
--------------------	----------

System	Server number
	x3250 M3 (4251,4252,4261)
	x3250 M4 (2583)*
	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)
	x3750 M4 (8722, 8733)
	x3755 M4 (7164)
	x3690 X5 (7148, 7149, 7147, 7192)
	x3850 X5/X3950 X5 (7145, 7146, 7143, 7191)
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)

Table 2. Supported hardware (continued)

* 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 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 Client," on page 31.

For VMware vCenter 5.1, you can choose to access the plug-in with vSphere client or vSphere Web client when you install the plug-in. 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 11.

Procedure

- 1. Extract the files from the downloaded IBM Upward Integration for VMware vSphere install package.
- 2. Double click **IBM_Upward_Integration_for_VMware_vSphere_v2.0.exe** to launch the installer.
- 3. Click Next on the startup page of 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 and click **Next**.
- 6. Input your **user** and **company** information.
- 7. Click **Confirm** to install. The installation of IBM Upward Integration for VMware vSphere begins.

After the installation is complete, the configuration starts.

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

IBM Upward Inte	gration for ¥Mware vSphere	
Please input configura	ation for the product	
_ ∀Mware vCent	er Server information	7
IP Address:		
Licerconer		
Username:		
Password:		
- Connection info	evention for the product	_
Connection and	ormation for the product	
Https Port:	9500	
nstallShield		
	< Back Next > Cancel	1

Figure 1. VMware vCenter server configuration

- The **IP address** is the IP of the management network (used to connect to the vCenter server).
- The **user name** and **password** must have administrative credentials that are used to manage the vCenter server.
- The **Https port** is the port that will be used by the product. The default value is 9500.
- **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 install package, if an old version of IBM Upward Integration for VMware vSphere is detected, an upgrade dialog 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 your IBM representative or an IBM Business Partner.

After you purchase the IBM Upward Integration for VMware vSphere License Tool, 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 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 management capabilities on IBM servers. The bundle should be installed on all ESXi hosts that you want managed by VMware VSphere. It is recommended that you use the VMware vSphere Command-Line Interface (vSphere CLI) utility to install and remove the entire bundle.

Important: For IBM customized ESXi 5.1 U1 or a newer version, the IBM Upward Integration for VMware vSphere Provider bundle has already been bundled. If the host already has this ESXi version, you do not need to install the Provider bundle any longer. It is recommended that you update to the latest patch version on a managed esxi host at your earliest convenience. You can find VMware vSphere ESXi with IBM Customization Patch on Fix Central.

Obtaining the VMware vSphere CLI

The VMware vSphere Command Line Interface (CLI) set allows you to use common system administration commands for ESX/ESXi systems from any workstation with network access to the ESX/ESXi systems.

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

Important: You must install this tool and open the VMware vSphere CLI command prompt before installing or removing the bundle.

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.

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

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

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 VIB and an offline bundle.
- Enter maintenance mode for the host using the following command: vicfg-hostops.pl --server [TARGET_HOST_IP] --operation enter

 Install the package 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 a 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-1.0-2.0offline_bundle-914982.zip
- If you manually upload the bundle to the target ESXi 5.0 host under directory such as /tmp, then install the bundle with this command: esxcli --server 10.0.0.1 software vib install -d /tmp/VMW-ESX-5.0.0ibmpowercim-1.0-2.0-offline_bundle-914982.zip
- 4. Exit maintenance mode 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 using the VMware vSphere Command Line Interface.

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

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

About this task

Use the following procedure for removing the IBM Upward Integration for VMware vSphere bundle for a host using the IBM customized ESXi 4.1 image.

Procedure

- Locate the ID of the bundle you want to remove using the following command: vihostupdate.pl --server [TARGET_HOST_IP] --query
- 2. Enter the maintenance mode of the host using the following command: vicfg-hostops.pl --server [TARGET_HOST_IP] --operation enter
- Remove the bundle using the following command: vihostupdate.pl --server [TARGET_HOST_IP] --remove -B [Bulletin ID]

4. Exit maintenance mode 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 using the IBM customized ESXi 5.x image

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

About this task

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

Procedure

- Locate the ID of the bundle you want to remove using the following command: esxcli --server [TARGET_HOST_IP] software vib list
- Enter the maintenance mode of the host using the following command: . vicfg-hostops.pl --server [TARGET_HOST_IP] --operation enter
- Remove the bundle using the following command: esxcli --server [TARGET_HOST_IP] software vib remove -n ibmpowercim
- 4. Exit maintenance mode 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 tab is added to the vSphere Web Client under the Manage tab in the host view. It provides the following functions:

- System
- Alerts and Events
- Firmware Updates
- · Power and Cooling
- Predictive Failures Management
- Configuration

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

Working with System

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 the 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.

Helm - 2.8	B.125.90.145 Actions -					11
8.525.00.145	Getting Started Summary	Monitor Manage Re	lated Objects			
Top Level Objects Vitual Machines Vitual Machines Vitual Machines Vitual Machines Didastores	Betings Networking Block Provides powerful platform m System Alerts	unagement for IDM System	a Test of sectors in the sector is	and the second se		ooffiguration (7) Help
Listworks Listworks Listworks Listworks Listworks	System Overview	System Ove	rview 💿			
	Installed Applications	System information	•			
	Network Settings	System Name: IBM System x (7870544) Serial Number: 99L5825			Operating System: Villware ESU OS Version: 5.1.8 build-799733	
	Hardware Inventory	IMM Firmware 1 uEFI Firmware	CPU: 1*4 Cares, 2.47 GHz Memory: 20408.7 MB			
	Firmware VPD	Last Start Time: 25	13/05/13 11:41:40			
		System Status				
		Total Events	CARGO	Warning	Information	
		779 Show All	0 **	(H)	Creat	
	Version Information 2.0 View Moze	and the second se	c data taut collected a The latest system dia		40	

Figure 2. 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. It is recommend that you do not navigate to any other host. When the collection process finishes, the last collection time is displayed on the System Overview page. 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.

9.125.90.145 Actions -					1
etting Started Summary	Monitor Manage Related	1 Objects			
Settings Networking Stor	age Alarm Definitions Tags	Permissions IBM Upward Integ	ration		
rovides powerful platform m	nanagement for IBM System x, I	BladeCenter, and PureFlex servers	6		
System Alerts	and Events Firmware	Updates Power Metric	Predictive Failures	Configuration 👔 Help	
System Overview	Installed Appli	cations 😨			
Installed Applications	Name	Version	Caption	Install Date	
Network Settings	ata-pata-amd	0.3.10-3vmw.510.0.0.799733	ata-pata-amd	20130130151512.057696+000	•
	ata-pata-atixp	0.4.6-4vmw.510.0.0.799733	ata-pata-atiop	20130130151512.058219+000	
Hardware Inventory	ata-pata-cmd64x	0.2.5-3vmw 510.0.0.799733	ata-pata-cmd64x	20130130151512.058287+000	
Firmware/VPD	ata-pata-hpt3x2n	0.3.4-3vmw.510.0.0.799733	ata-pata-hpt3x2n	20130130151512.057685+000	1
remain tro	ata-pata-pdc2027x	1.0-3vmw.510.0.0.799733	ata-pata-pdc2027x	20130130151512.057800+000	
	ata-pata-serverworks	0.4.3-3vmw.510.0.0.799733	ata-pata-serverworks	20130130151512.058184+000	
	ata-pata-sil680	0.4.8-3vmw.510.0.0.799733	ata-pata-sil680	20130130151512.057829+000	
	ata-pata-via	0.3.3-2vmw.510.0.0.799733	ata-pata-via	20130130151512.057729+000	1
	block-cciss	3.6.14-10vmw.510.0.0.799733	block-coiss	20130130151512.058053+000	Т
	brodprovider	30300	brcdprovider	20130130151512.057988+000	1
	brom	500.2.0.3-000000	brom	20130130215158.045001+000	
Version information 2.0 View More	bromtwup	500-1.00.20121017	bromtwup	20130130215158.028444+000	
	concretejob	500-2ACE16BUS	concretejob	20130130215155.051451=000	

Figure 3. 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.

etting Started Summary	Monitor Manage	Related Objects				
Settings Networking Stora	age Alarm Definition	s Tags Permission	IBM Upward Integrat	ion		
Provides powerful platform m	anagement for IBM S	ystem x, BladeCenter,	and PureFlex servers.			
System Alerts	and Events	Firmware Updates	Power and Coolin	g Predictive Failures	Configuration 💮 Hel	P
System Health	System H	ealth 💿				
Power Throttling	(8) Critical(6)	Warning(4)	information(769)			
	Filter by:	8	•		4	3
	Message ID	Severity	Time Stamp	Message Detail		
	IMM0025	Information	2011-07-21 16:47:58	LAN: Ethemet(eth0) interface is no	ow active	
	IMM0023	Information	2011-07-21 16:47:58	ENET[sp-ethemetport] IP-Cfg:Hst IP@=192.199.199.81 ,NetMsk=25	Name=IMM-E41F137C664C, 5.255.255.0, GW@=192.199.199.2	2
	IMM0025	information	2011-07-21 16:49:31	LAN. Ethemet(eth0) interface is no	w active	
	IMM0023	Information	2011-07-21 16:49:31	ENET[sp-ethernetport] IP-Cfg:Hst IP@=192.199.199.81 ,NetMsk=25	Name=IMM-E41F137C664C, 6.255.255.0, GW@=192.199.199.22	2
	PLAT0108	information	2011-07-22 14:02:08	Host Power has been Power Cyc	ed	
	IMM0025	Information	2011-07-26 09:55:31	LAN: Ethernet(eth1) interface is no	w active	
	IMM0023	🔝 Information	2011-07-26 09:55:31	ENET[sp-ethernetport] IP-Cfg:Hst IP@=192.199.199.81 NetMsk=25	Name=IMM-E41F137C664C, 5.255.255.0, GW@=192.199.199.22	2
	IMM0025	Information	2011-07-26 09:59:01	LAN: Ethernet(eth1) interface is no	w active	
Version Information 2.0	IMM0023	Information	2011-07-26 09:59:02	ENET[sp-ethemetport] IP-Cfg:Hat IP@=192.199.199.81 ,NetMsk=25	Name=IMM-E41F137C664C, 5.255.255.0, GW@=192.199.199.2	2
View.More	IMM0025	Information	2011-07-26 10:01:00	LAN: Ethernet(eth1) interface is no	w active	
				ENETIS	Nome-INMERIE137CRAAC	

Figure 4. Viewing Alerts and Events

The System Health table containing events and alerts that can be sorted by clicking the table columns and also be filtered by choosing the severity from the filter drop-down menu. **Refresh** allows you to collect the latest alerts and events from the host.

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 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

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	Nonitor Manage Related Objects	
Settings Networking Stora	ge Alarm Definitions Tags Permissions IBM Upward Integration	
Provides powerful platform ma	anagement for IBM System x, BladeCenter, and PureFlex servers.	
System Alerts and	Events Firmware Updates Power and Cooling Predictive Failures Configuration 🕥 F	lelp
Recommended Updates	Update Preferences ③	
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 If Require a proxy server for internet 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	
Version information:2.0 View More	User Name: Iroot Password:	

Figure 5. Update Preferences page

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

Check the IBM web site:

Download the appropriate updates automatically from IBM site.

Look in a directory on vCenter Server:

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 Installation folder\IVP\bin\data\uxspi\ repository\ directory on the vCenter server after download. Select the location method to update the other host servers which have the same machine type. Before updating the host firmware, you need input the root account of 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[®] 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 selected **Check the IBM web site** on the Update Preferences page, the Recommended Updates option will download and install firmware and drive updates from the latest UXSP for IBM System x and IBM BladeCenter servers. In the location mode, Recommended Updates will install firmware and drive updates from the latest UXSP of location for IBM System x and IBM BladeCenter servers.

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 Recommended Updates page. The Recommended Updates Wizard opens with the Check Compliance dialog box opened.

	Construction of the second	Bons Tags Permissions IBM Upward Integration M System x, BladeCenter, and PureFiex servers.	
System Alerts and	Events	Firmware Updates Power and Cooling Predictive Yailures Configuration	() Help
Recommended Updates	Recom	mended Updates 💿	
Individual Updates	The Update? x8 and Blad	Recommended Updates	ach System
Updates Proferences	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 xB and BladeCenter® server. Click Check Firmware Compliance to check for firmware updates. Check Firmware Compliance	
Version Information 2.0 View More		Next Cancel	

Figure 6. 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 to prompt for entering the host account information.
- 4. When the Check Compliance action has completed, make any necessary changes and click **Next**.

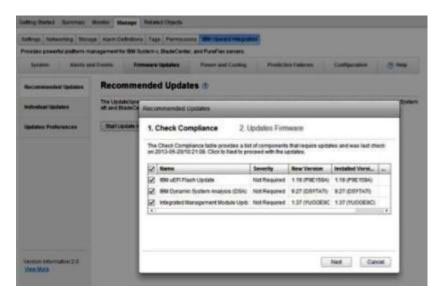


Figure 7. Check Compliance complete

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

Setting Started	Summ	iary Mo	nitor	Manage	Related	Objects					
Settings Netwo	orking	Storage	Alarn	n Definition:	Tags	Permission	s IBM Upward Integr	noite			
rovides powerf	ul platfo	rm mana	igemei	nt for IBM S)	stern x, E	BladeCenter,	and PureFlex servers.				
System	Ale	rts and E	vents	Fin	mware U	pdates	Power and Cooling	Predictive	Failures C	configuration	Help
Recommende	d Updat	es	Rec	comme	nded	Update	s 🔊				
Individual Upda	ates			pdateXpre d BladeCe	Recom	mended Up	dates				Syst
Updates Prefe	rences		Star	t Update V	1. Cł	ieck Comp	liance 2. U	pdates Firmw	are		
				l	to inst	e now ready t all the update ownload Com odating		ble) and install the i	updates. Click Can	cel if you do not	want
					Nam	e		Version	Reboot Requi	Status	
					Integ	rated Manage	ement Module Update	1.37 (YUOOE9C)	No	Running	
											11.
Version informa	ation:2.0	25								Car	

Figure 8. Recommended Updates wizard - updating firmware

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

Individual Updates

If you selected **Check the IBM web site** on the Update Preferences page, the Individual Updates option will download and install the firmware and drive 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

Perform the following steps to update a remote server using the Individual Updates option.

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, and 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 to prompt for entering 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 update the target host.

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

ttings Networking St	orage Alarm Definitions Tags	Permissions IBM Upward Integration	
ables powerful platform	n management for IBM System	x, BladeCenter, and Pureflex servers.	
System Alert	ts and Events FW Upda	tes Power and Cooling Predictive Failure	rs Configuration () () Hel
ieneral	General 💿		
Power History	You can set value for each	h attribute of power metric, you must manually enable power	monitoring on a host to view power metric
	Attribute	Value	Actions
hermal History	Host Monitoring	Enabled	Disable
an History	Poll Time	2013-05-03 13:05:19	
	Power Input	2180 walts	
	Thermal Input	22 ℃	
	+Fan Input		
	Power Capping	Enabled	Disable
		130 watts Edit	
	Power Throttling	Enabled	Disable
rial version 2.0	Warning Throtting	144 watts Edit	a det det de la companya de la compa
	and the second s	144 watts Edit	

Figure 9. Power Metric page

Enabling and disabling power monitoring

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

Procedure

- 1. Select the **Power and Cooling** tab.
- 2. Click **Enable** to enable Power Monitor on a host. The Enable button is visible when Power Metric is not enabled on a host.
- **3**. In the credentials dialog box, enter the credentials for the host and click **OK**. The host credentials will be saved in a database and the monitoring of power usage begins.
- 4. Click **Disable** to disable the monitoring.

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

Setting Power Capping

Power capping allows you to 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. Setting a power capping value ensures 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.

etting Started Summary	Monitor Manage Related	d Objects		
ettings Networking Sto	rage Alarm Definitions Tags	Permissions IBM Upward Integration		
ables powerful platform	management for IBM System	x, BladeCenter, and PureFlex servers.		
System Alerts	and Events FW Upda	tes Power and Cooling Predictive Failures	Configuration	Help
General	General 💿			
Power History	You can set value for each	h attribute of power metric, you must manually enable power mo	nitoring on a host to view p	ower metric
	Attribute	Value	Actions	
hermal History	Host Monitoring	Enabled	Disable	1
an History	Poll Time	2013-05-03 14:29:19		
	Power Input	2180 watts		
	Thermal Input	22 °C		
	» Fan Input			
	Power Capping	Enabled	Disable	
		130 + (78 - 144) Save Cancel		
	Power Throttling	Enabled	Disable	
rial version 2.0	Warning Throthing	120 watts Edit	10 23	
nai version 2.0 xpire in 42 days New More	Critical Throttling	144 wats Edit		

Figure 10. Setting Power Capping on the vSphere Web Client

Setting Power Throttling

Setting power throttling allows you to receive alerts when power consumption exceeds a value you have 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, IVP receives a throttling event, which is then displayed in the Power Throttling Indications table.

Enable Power Throttling before setting Power Throttling.

ettings Networking St	orage Alarm Definitions Tags	Permissions IBM Upward Integration	
nables powerful platform	n management for IBM System	, BladeCenter, and PureFlex servers.	
System Aler	ts and Events FW Upda	tes Power and Cooling Predictive Fail	eres Configuration (🛞 Help
General	General ③		
Power History	You can set value for eac	attribute of power metric, you must manually enable pow	er 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	22.0	
	▶ Fan Input		
	Power Capping	Enabled	Disable
		130 watts Edit	
		Enabled	Disable
	Power Throttling		
Trial version 2.0	Power Throttling Warning Throttling	120 Save Cancel	CLOURNED.

Figure 11. 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. Select the Power and Cooling tab. For each of the history charts, you can:
 - Use mouse wheel to zoom in/out of the charts, and use drag and drop to move a chart.
 - 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 Stor	age Alarm Definitions Tags Permissions IBM Upward Integration
Enables powerful platform (nanagement for IBM System x, BladeCenter, and PureFlex servers.
System Alerts	and Events FW Updates Power and Cooling Predictive Failures Coefiguration (?) Help
General	Power Usage History
Power History	Last 24 Hours V Per Hour V
Thermal History	Power Consumption History for Last 24 Hours
Fan History	2000 2000 1500 1600 1400 1200 500 600 400
Trial version 2.0 Expire in 42 days View More	200 Capping Setting: 130 0 05-02014-48:38 05-02-18-48:38 05-02-02-48:38 05-03-02-48:38 05-03-06-48:38 05-03-10-48:38 05-03-14-48:38

Figure 12. Power Usage History for vSphere Web Client

Thermal History

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

ettings Networking Stora	age Alarm Definitions Tags Permissions IBM Upward Integration
nables powerful platform n	management for IBM System x, BladeCenter, and PureFlex servers.
System Alerts	and Events FW Updates Power and Cooling Predictive Failures Configuration (?) He
General	Thermal Usage History
Power History	Last 24 Hours 💌
Thermal History	Thermal History for Last 24 Hours
Fan History	24
	20 18 -
	10
	12 -
	8
itial version:2.0 opine in 42 days	•

Figure 13. Thermal Usage History for vSphere Web Client

Fan History

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

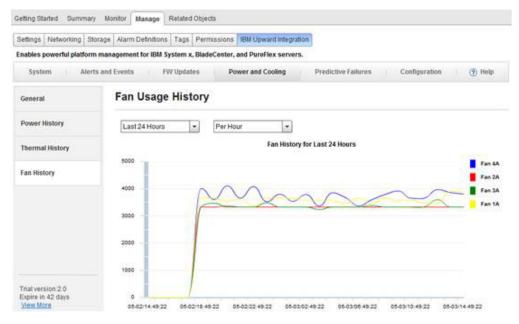


Figure 14. Fan Usage History for vSphere Web Client

Working with Predictive Failure management

The topics in this section provide information for working with Predictive Failures on the vSphere Web Client.

The Policy and Rules page allows you to set management policies against the server based on a hardware predictive failure alert. IBM Upward Integration for VMware vSphere with vSphere Web Client evacuates VMs from the server or notifies you based on defined policy. You can view predictive failure alerts from the server and the triggered policy history on the Predictive Failures page.

Note: IBM Upward Integration for VMware vSphere with vSphere Web Client cannot receive predictive failure alerts from the server until you install the CIM providers and enable host monitoring on the Power and Cooling page.

Prerequisites

This topic describes the prerequisites for using Predictive Failures for the vSphere Web Client.

Before using Predictive Failures, verify the following prerequisites are met.

- Predictive failure policy relies on the hardware Predictive Failure Alert (PFA) capability. The IMM of the server should have the ability to send out predictive failure alerts when a failure is detected.
- Proper configuration of the network management policy on the vCenter server is required to enable TCP on the https port that you selected for IBM Upward Integration for VMware vSphere use. The default is 9500 when you install IBM Upward Integration for VMware vSphere. IBM Upward Integration for VMware vSphere listens on this port for incoming indications.
- If you want to evacuate VMs from a host when a set policy is launched, the host must be put in a properly configured DRS (Dynamic Resource Scheduler) cluster. IBM Upward Integration for VMware vSphere with vSphere Web Client puts the host in maintenance mode, and the VMWare DRS cluster should ensure VM migration to another host.

Policy and Rules

This topic describes how to set a management policy against a server based on a hardware predictive failure alert (PFA).

Policy and Rules allows you to add, edit, and delete a rule which defines the conditions and corresponding actions being executed on the target server. The conditions are various hardware PFA indications that IMM can generate. You can select some of these conditions to form your own rules.

An action indicates what instruct IBM Upward Integration for VMware vSphere to do when all of the conditions in a rule are triggered for the managed endpoint. The available actions are:

Migration:

Migration evacuates all of the VMs from the server. IBM Upward Integration for VMware vSphere only puts the server in maintenance mode. The cluster should verify VM migration to other servers after the server enters maintenance mode.

Note: The server must be placed in a properly configured VMware Dynamic Resource Scheduler (DRS) cluster.

Notify:

Provides a message log.

9.125.90.145 Actions			
etting Starled Summary	Monitor Manage Relate	d Otyacts	
Settings Networking Stor	age Alarm Definitions Tage	Permissions IBM Upward Integration	
Provides powerful platform r	management for IBM System x,	BladeCenter, and PureFlex servers.	
System Alects	and Events Firmware	e Updates Power Metric Predictive Failures Configuration () Help	
Predictive Failures	Policy and Ru		
Predictive Failures	roncy and ru	Rule Editor	
Policy and Rales	Set management policy Management Policy Management Mame Best Best Best4 Best2	Name: rule name Conditions: Conditions: Power Supply failure predicted Power Unit Predictive Failure Sensor predictive failure asserted Array Failure Predicted	
	test3	Actions:	
		Migration Notify	
Version information:2.0		Save Cancel	

Figure 15. Policy editor

Viewing Predictive Failure Events

IBM Upward Integration for VMware vSphere with vSphere monitors Predictive Failure Alerts (PFAs) from IMM. All alerts are listed in the Event log table.

Results

9.125.90.145 Actions *								10
Setting Started Summary	Monitor Manage Re	lated Objects						
Settings Networking Stora	ge Alarm Definitions 1	ags Permission	BM Upward Integrat	lon				
Provides powerful platform m	anagement for IBM Syste	m x, BladeCenter, a	and PureFlex servers.					
System Alerts a	ad Events Firms	ware Updates	Power Metric	Predict	ve Failures	Configurat	tion 🕥 Help	
Predictive Failures	Predictive F	ailures 💿						
Policy and Rules	View Predictive Fail	ure event log and a	iction history.					
	Message ID	Severity	Time Stamp		Description			
	PLAT0088	Critical	2013-04-27 16:43:03		Failure predicted on Power Supply 1.		upply 1.	
	PLATOOBS	Critical	2013-04-24 17:0	2.23	Failure pred	licted on Power S	upply 1.	
	PLAT0088	Critical	2013-04-24 17 0	1.52	Failure predicted on Power Supply 1.		upply 1.	
	PLATOO88	Critical	2013-04-23 16:4	5.55	Failure predicted on Power Supply 1.		upply 1.	
	PLAT0088 Critical 2013-04-23 15.44.04 Failure predicted on Power Supply 1.							
	Action History							
	Time		Action	Description			Status	
Version information 2.0	2013-04-27 16:43	13	Neotity	Power Supply	failure predict	ea.		
View More	2013-04-24 17:02	33	Notity	Power Supply	failure predict	ed,		
	2013-04-24 17:02	02	Notify	Power Supph	tailure predict	ed.		

Figure 16. Event log table

Viewing the Action History table

This topic describes how to view the Action History 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.

Results

Note: A Notify action record has no status information. The action record only indicates that the notify action was successfully triggered.

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

Settings are categorized into sections which are displayed in different links in the left pane. You can easily find a setting by viewing the different links. The values of the settings are displayed in each link and based on the last refresh. The last update date and time is displayed to the right of Refresh button.

About this task

The following procedure provides examples of the steps for viewing two different advanced system settings. The values of the settings are displayed in each link and based on the last refresh. The last update date and time is displayed to the right of Refresh button.

Procedure

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

ettings Networking Storage	e Alarm Definitions Tags Permis	IBM Upward Integration			
ovides powerful platform man	nagement for IBM System x, BladeCer	nter, and PureFlex servers.			
System Alerts and	Events Firmware Updates	Power and Cooling	Predictive Failures	Configuration	? Help
Boot Order	IMM Port Assignme	nts 💿			
uEFI Settings	Please save the changes when y Save Refresh Last	you finish the setting to make t update date: 2013-05-16 02:27			
uEFI Processor					
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	1	1			

Figure 17. 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 would be disabled to indicate this setting is currently not supported on your host.

3. To view boot order, click **Boot Order** in the left pane.

ettings	Networking	Storage	Alarm D	efinitions	Tags	Permission	s IBM Upwa	rd Integration				
ovides	powerful plat	form mana	gement f	or IBM Sys	tem x, E	BladeCenter,	and PureFlex	servers.				
Syste	em Al	lerts and E	vents	Firm	ware U	pdates	Power and	Cooling	Predictive Fa	ailures	Configuration	Help
Boot Or	der	^	Boot	Order	0							
uEFI Set	ttings				1928-193 7 .1			N boot order an	d uEFI ROM or	der.		
u <mark>EFI Pro</mark>	ocessor					N LAN Boot (13-05-15 21:	order uEFIF	ROM Order				
u <mark>EFI Se</mark> i	rial Port			Boot Devic		er		Optional Dev				
IEFI CO			Hard Disk	3		Hard Disk 0 CD/DVD Rom Embedded Hypervisor						
EFI Oth	EFI Other Settings Hard Disk 4 PXE Network Floppy Disk			ork	k Add Legacy Only Up				Up	ו		
MM Sei	rial Port			USB Stora Diagnostic	ge	(Remove			Down		
MM Ale	erts			ISCSI	cal							
MM Po	rt Assignmen	its										
MM SN	MP			Save	Refre	esh						

Figure 18. Viewing Boot Order

Changing 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 19. Setting change success symbol

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

\otimes

Figure 20. 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 Stora	ige Alarm De	efinitions Tag	s Permissions	IBM Upward Integration			
rovides powerful platform m	anagement fo	or IBM System >	, BladeCenter, a	ind PureFlex servers.			
System Alerts a	nd Events	Firmware	Updates	Power and Cooling	Predictive Failures	Configuration	Help
Boot Order		Alerts 🔊					
uEFI Settings	Please	save the chang	les when you fi	hish the setting to make th	em effective.		
· · · · · · · · · · · · · · · · · · ·	Save	Refres	h Last upda	te date: 2013-05-16 02:24:	45		
uEFI Processor			m			1	
uEFI Serial Port	Alert Re	ecipient Email		someone@cn.ibm.con	n 🗹		
ueri senai port				2		_	
uEFI COM1	Alert Re	ecipient Name					
	Critical	Alerts		Disabled	•		
uEFI Other Settings							
IMM Serial Port	Delay b	etween entries		0.0 minutes	•		
	2.544						
IMM Alerts	Delay b	etween retries		0.5 minutes	•		
IMM Port Assignments	Recipie	ent Include Eve	nti og	Disabled	•		
mm Fort Assignments				Chodered			
IMM SNMP	Remote	e Alert Recipier	nt Status	Disabled	•		
	-						
HIM Coouriby	Remote	e alert retry limi	t	8 times	•]		

Figure 21. 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.

Chapter 4. Using IBM Upward Integration for VMware 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
- Predictive Failure Management

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 includes the following summaries:

- System Information Summary
- System Health Summary
- Power Throttling Summary
- Predictive Failure Alert Summary

System Information Summary

System Information Summary contains information of 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 the following 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. Since 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 details:

- Message
- Event time
- MessageID

peration	System Health	System Summary		
 Dashboard System Analysis Firmware Update Power Metric Advanced Setting Predictive Failure Management 	Shows health of your system in a number of different categories. Chelp Health	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			
	Altention 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 22. 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
- ServerRAID 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

Launching system inventory collection

This topic describes how to launch the system inventory collection function using the System Analysis operation on the System Information page.

About this task

This task is performed from the System Information page.

Click the **Refresh** button located in the Diagnostic Actions section to complete a full analysis of the system. This operation can take up to five minutes to perform.

peration	System Information
Dashboard System Analysis Firmware Update Power Metric	Shows hardware and software information about your system. 🕜 help Diagnostic Actions
Advanced Setting Predictive Failure Management	Click the button to run a full diagnostic against the host. Refresh
management	Previous Diagnostic Results
	Software - Hardware - SP Logs - Analysis - DSA Log -

Figure 23. Launching the system inventory collection function

When the analysis is complete, the results of the analysis and the software system overview are displayed.

Viewing and managing the analysis history

This topic describes how to view and manage the history of analyzed results.

To access the history of the analyzed results, click the dropdown menu, and select the analysis you want to view. The result page displays analysis.

You can also use the **Delete** button to delete a specific history analysis that is no longer necessary.

Viewing categorized analysis results

After you launch a full analysis or select a history analysis, the categorized analysis result area is displayed.

The categorized analysis result area is composed of a category selection menu and a section with the results tables. The default view displays the generic system information of the host. You can switch to any section you are interested in viewing, including the information listed in "Working with Dynamic System Analysis" on page 33.

Operation	System Information
Dashboard System Analysis Firmware Update	Shows hardware and software information about your system. 💽 help
Power Metric	Diagnostic Actions
Advanced Setting Predictive Failure Management	Click the button to run a full diagnostic against the host. Refresh
wanagement	Previous Diagnostic Results 2012/10/09 16:00:00
	Software • Hardware • SP Logs • Analysis • DSA Log •
	System Overview
	Installed Applications
	Network Settings
	Product Name IBM System x - [7870B4A]-
	Version none
	Serial Number/99L5825
	System UUID de0d18e4-39/2-11df-8d51-e41f1378664c
	Manufacturer IBM
	Product Name IBM System x -[7870B4A]-
	Version none
	Serial Number - [UUID:32384535393544464232393734364236]-
	System UUID de0d18e4-39f2-11df-8d51-e41f1378664c
	Operating System
	Name VMware ESXi
	Manufacturer VMware, Inc.
	BuildNumber 623860

Figure 24. Categorized analysis result area

Results are displayed in tables with titles that indicate the subcategory of the results table. The dates displayed in the table are derived from a new analysis or the analysis history.

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 UXSP(s) or individual updates 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 Location page, select **IBM website**.

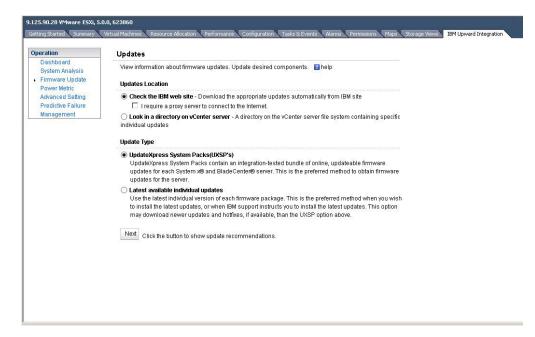


Figure 25. Updates Location page

- 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	UpdateXpr updates fo	 UpdateXpress System Packs(UXSP's) UpdateXpress System Packs contain an integration-tested bundle of online, updateable firmware updates for each System x@ and BladeCenter® server. This is the preferred method to obtain firmware updates for the server. 								
	Use the lat to install th may downl Next Click t Update Recon The informatio	table individual updates est individual version of each firmware pace l elatest updates, or when IBM support instr oad newer updates and hotfixes, if availabil he button to show update recommendation unendation n below shows which components need u 012-10-8 2:44:45.	ructs you to install I e, than the UXSP c is.	the latest updates. Th	is option					
	Update sele	ted components								
	Update sele	ted components Name	Severity	New Version	Installed					
	Update seler	Lawrence	Severity Not Required	New Version 1.18 (P9E157A)	Installed ' 1.18 (P9E					
		Name	Not Required							
	🗖	Name IBM uEFI Flash Update IBM Dynamic System Analysis (DSA)	Not Required	1.18 (P9E157A)	1.18 (P9E					

Figure 26. Update Recommendation page

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.

peration	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	_	
Power Metric Advanced Setting Predictive Failure Management	Acquiring update(s)		
	Cancel		
	Next		

Figure 27. 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 Firmware Update	Input administrator's credentials of the target machine for update. 🕜 help
Power Metric Advanced Setting Predictive Failure Management	User name: root
	Next

Figure 28. ESXi credentials 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	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 29. Update execution page

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



Figure 30. All updates successfully applied

Updating a remote server from a local directory

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

About this task

Perform the following steps for updating a remote server from a local directory.

Procedure

- 1. Click Update in the navigation pane on the left.
- 2. On the Updates Location 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 installing updates 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 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 OS booting.

	Power Metric		Power Information
peration Dashboard System Analys Firmware Upd	View information about power usage.	Enable	Power Input: 70 Watts Thermal Input: N/A Fan Input: N/A Poll Time: 2012-10-9 16:17:17
Power Metric Advanced Sett	Please input host credentials		Power Capping: N/A
Predictive Faile Management	User name:	e of Last 24 Hours (Per Hour)	Power Throttling: N/A
	Password:	Set Duration Refresh	
	Confirm Cancel		
	60		
	50		
	40		
	30		
	20		
	10		
	10		
	P		
	2012-10-8 16:18	2012-10-9 2012-10-9 02:18 12:18	

Figure 31. 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 Chart

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

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

Ele Edit View leventory Administratio	on Plug-ins Help					
🖸 🔯 🧑 Home 🕨 🖉 Enventory					- Search Inventory	
					Definition of the second secon	
at er 98						_
VCENTER_SERVER_ New Datacenter	9.115.232.195 VHware FS					
E 9 115.232.184 9 115.232.193	Getting Started Sommary	Virtual Machines Resource Allow	Performance Configuration Tests & Lyons Alarma Power Usage of Last 24 Hours (Per Hour)	Fermissions Map	Storage Views (Hardware Status) JBM	Upward Integrat
9.115.232.195	Operation	the first states		uration Retresh		
	Dashboard System Analysis	Power Usage (Watts)				
	Firmware Update	**				
	Power Metric	to		-		
	Advanced Setting	1				
		(1) -				
		41				
		50		_		
		10 A				
		10		_		
		2012-6-1 2012-6-1	2013-6-7 2013-6-7 2013-6-7	4		
			Time (Year-Month Class Hour Min)			
			Thermal History of Last 24 Hours (Per Hour)			
			Set D	uration Retresh		
		Thermal History				
		1				

Figure 32. Power Usage Chart

The following figure provides an example of the Thermal Chart.

🕼 wanist talifi k - wighere Dent						E F
Ele Edt View Apertory Administr	action Elvo ins Holo					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	may 10 1/18 Hover and Charloss			121-	Staat Ch. Second start of y	Q
0 # 85						
E 🙆 VORVER, SERVER, Z 🛃 Non Descenter	0.115.454.184 Wilward E5					1 A
H 10 9 115 252 184	Colling Starting Summary	Vitual Hadines Alesco	Themal History of Last 24 Hours (Per Hour)	anna (Riquil bhru)	e vizna - Hundhar e Skitten - B	H Upsard Incests C1
9 115 252 193	Operation	1	Inermal Flistory of Last 24 Hours (Per Hour) Set Duration	Settech		
	Desribbard	Thernel Hatory				
	Bystom Analysto Firmward Update	·** 1		-		
	 PowerHotric 	10 - 1		1		
	Advanced Setting	17				
		10 - 12 -				
		3.4 10 m				
		12 4				
		10		e^		
		4				
		-				
		D. C.	and the second s			
		3055-8-3	nijete Julien Boo			
			Time (fearil)onthDate Hour Min)			
			Fan History of Last 24 Hours (Per Hour)			
			Fan History of Last 24 Hours (Per Hour) Set Curator	Settech		
		Tam / Retory	and the second se	20022		
		.1484		-		-
			G	Fin 18		
			E Contraction of the second seco	1 HB 24		
Recent Tanks				Nane: Taylor	a Salas surbira. +	CO MAR 3

Figure 33. Thermal Chart

The following figure provides an example of the Fan Chart.

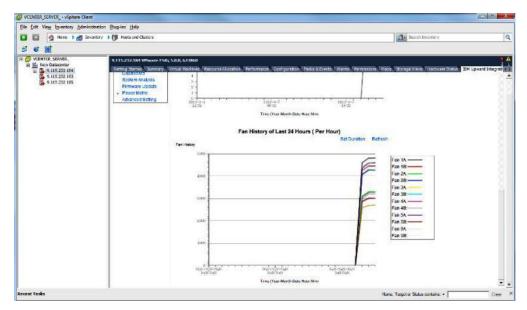


Figure 34. Fan Chart

Setting Power Capping

Power capping 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. Setting a power capping value ensures 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, if the firmware supports capping. The power cap value is persistent across power cycles for both rack and blade servers.

📓 🔝 🥼 Home 🕨	👸 Inventory 🕨 🎁 Hosts a	ind Clusters		Search Inventory	
st et 98					
WIN-6TNR IPGBQGB hp5.1 9.115.252.181 9.115.252.62		S.1.0, 799733 Evaluation (S4 d Virtual Machines Resource Allocation Power Metric		Storage Views Hardware Ratus IBM Upward Inte	egration
Dashboard Firmware U Power Metri Advanced St	Dashboard Firmware Update Power Metric Advanced Setting Predictive Failure	View information about pow	Disable	Power Input: 170 Wats Thermal Input: 23 *C Fan Input: Fan No. Fan Speed 1A 3440/min	
	Management	Power Uzage (Watts)	Power Usage of Last 24 Hours (Per Hour) Set Duration Refresh Set Power Capping for this machine	2A 3440/min 3A 3440/min 4A 3400/min	
		160 - 180 - 170 - 160 - 150 - 140 -	Classifier Copping to the intermediate Classifier power capping on this machine Set maximum power (106 - 225 Watts): (190	Poll Time: 2012-11-11 23:13:28 Power Capping: 190 Wats Edit Power Throthing: NA Edit Refresh	
		120 - 120 - 110 - 100 - 60 - 80 -	OK Cancel		
		70 - 60 - 60 - 40 - 30 - 10 -			
		0 2012-11-10 23:14	2012-11-11 2012-11-11 09:14 19:14		

Figure 35. Setting Power Capping

Setting Power Throttling

Setting power throttling allows you to receive alerts when power consumption exceeds a 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
Operation Dashboard System Analysis Firmware Update Power Metric Advanced Setting Predictive Failure Management	View information about power usage Click the button to disable host mo	nitoring, Disable er Usage of Last 24 Hours (Per Hour)	Power Input: 70 Watts Thermal Input: N/A Fan Input: N/A Poll Time: 2012-10-9 16:17:17 Power Capping: 2291 Watts Edit Power Throtting: N/A Edit Refresh
	Power Usage (Watts)	Set Duration Refresh	Hencon
	70 -	Set Power Throttling for this machine	
	60 50 40	Cancel Cance	
	20		
	0. 2012-10-8 16:18	2012/10.6 02:16 Time (Year-Month-Date HoursMin)	

Figure 36. Set Power Throttling

.125.90.28 ¥Mware ESXi, 5.0 Getting Started Summary	.0, 623860 Virtual Machines	Resource Allo	cation Performance C	onfiguration Tasks & Events	Alarms Permissions M	aps Storage Views	IBM Upward Integration
Getting Started Summary System Analysis Firmware Update Power Metric Advanced Setting Predictive Failure Management	Vertual Machines N	Resource Alt	Cabin Performance C	ontrguration Tasks & Events N	Alarma Permissions M	pp Storage Views	IBM Upward Integration
	2012-10- 16:18	8	2012-10- 02:18		2012-10-9 12:18		
			Time (Ye	ar-Month-Date Hour:Min)			
	Power Thro	ittling					
	- A Po	wer Throttling	Indications(2)				
	Туре	Message ID	Time Stamp	Message			[
	<u> </u>		Time Stamp 2012-10-09 15:48:50	Message Power usage of 80 above s Power usage of 70 above s			

Figure 37. 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 sections which are displayed as different accordions. You can easily find a setting by viewing the different accordions. On the initial view, a description accordion 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 an accordion.

Operation	Advanced System Settings				
Dashboard System Analysis Firmware Update Power Metric • Advanced Setting Predictive Failure Management	Configure IMM, uEFI and boot ord The red star(*) indicates that the i over the X to view more details ab	user has changed th	ie setting. The re	d∑indicates that an error occurre	nd during retrieval or setting of values. Hover the cu
wanagement	IMM Boot Order UEFI				
	IMM Settings				
	Alerts				
	Remote Alert Recipient Status Disabl		•	Save	
	Alert Recipient Name	4		Save	
	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 38. 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 39. 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.

0

Figure 40. Setting change is successful symbol

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

×

Figure 41. 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	Advanced System Settings							
Dashboard System Analysis Firmware Update Power Metric Advanced Setting Predictive Failure Management	Configure IMM, uEFI and boot ord The red star(*) indicates that the u over the X to view more details ab IMM Boot Order uEFI	iser has changed th	ne setting. The re	d X indicates that	an error occurred d	uring retrieval or setting of values. Hover the cu			
	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	rt Settings				

Figure 42. 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 drop-down menu.

• *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.

Working with Predictive Failures Management

The topics in this section provide information about working with Predictive Failure Management.

The Predictive Failure Management page allows you to set a management policy against the server based on a hardware predictive failure alert. IBM Upward Integration for VMware VSphere with vSphere Client evacuates VMs from the server or notifies you based on defined policy. You can view predictive failure alerts from the server and the triggered policy history on this page.

Note: IBM Upward Integration for VMware VSphere with vSphere Client cannot receive predictive failure alerts from the server until you install the CIM providers and enable host monitoring on the Power Metric page. The following figure shows an overview of the Predictive Failure Management page:

peration	Predictive	Failure Manage	ment		
Dashboard System Analysis Firmware Update Power Metric	Set manager Policy Manag		on predictive failure alert. View event log and actio	n history. 👔 help	
Advanced Setting Predictive Failure	Add Rule	Remove Rule	Edit Rule		
Management	Name	Det	ail	Action	
	Your Rule	Pow Fail	ver Supply failure predicted; Power Unit Predictive ure;	Migration	
	Event log Refresh Currents Action history Refresh				
	• 🚺 Actio	ons			

Figure 43. Predictive Failure Management Overview

Prerequisites

This topic provides information about prerequisites for using Predictive Failure Management.

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

- 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.
- Proper configuration of the network management policy on the vCenter server is required to enable TCP on the https port that you selected for IBM Upward Integration for VMware VSphere with vSphere Client use. The default is 9500 when you install IVP. IBM Upward Integration for VMware VSphere with vSphere Client listens on this port for incoming indications.
- If you want to evacuate VMs from a host when a set policy is launched, the host must be put in a properly configured DRS (Dynamic Resource Scheduler) cluster. IBM Upward Integration puts the host in maintenance mode, and the VMWare DRS cluster should ensure VM migration to another host.

Policy Management

This topic describes how to set a management policy against the server based on a hardware predictive failure alert (PFA).

Policy Management allows you create, edit, and delete a rule which defines the conditions and corresponding action to be executed on the target server. Conditions are various hardware PFA indications that IMM can generate. You can select some of these conditions to form your own rules. Action indicates what you expect IBM Upward Integration for VMware VSphere with vSphere Client to do when all of the conditions in a rule are triggered for the managed endpoint. The available actions are:

Migration

Evacuates all VMs from the server. Note that the server must be put in a properly configured VMware Dynamic Resource Scheduler (DRS) cluster. IBM Upward Integration for VMware VSphere with vSphere Client only puts the server in maintenance mode. The cluster should ensure VM migration to other servers once the server enters maintenance mode.

Notify Shows a message log to the user.

peration	Predictive Failur	e Management	
Dashboard System Analysis Firmware Update Power Metric	Set management po Policy Management	licies based on predictive failure alert. View event log and action history. 🔞 help	
Advanced Setting	Add Rule Rer	nove Rule Edit Rule	
Predictive Failure Management	Name	Rule Editor	0
	Your Rule	Name: Your Rule	
	Event log Refres	E i ower oupply failure predicted in the rower offict redictive railare	
	• A Events	Sensor predictive failure asserted 🗆 Array Failure Predicted	
	Action history R	er Actions: I reference of Notify	
	• I Actions	Save	

Figure 44. Migration Policy Editor

Viewing Predictive Failure Events

This topic describes how to view Predictive Failure Events.

IBM Upward Integration for VMware VSphere with vSphere Client monitors PFAs from IMM and all alerts are shown in the Event log table.

Operation	Predictive I	Failure Mana	gement		
Dashboard System Analysis Firmware Update Power Metric	Set manager Policy Manag		sed on predictive failure alert. View event log and activ	on history. 🔋 help	
Advanced Setting Predictive Failure	Add Rule	Remove Rul	e Edit Rule		
Management	Name		Detail	Action	
	Your Rule		Power Supply failure predicted; Power Unit Predictive Failure;	Notify	
		Refresh ts(1)			
	Message ID	Time Stamp	Message		
	PLAT0088	2012-10-12 1	6:49:41 Power Supply failure predicted		
	Action histor				

Figure 45. Predictive Failure Events

Viewing the Action history table

This topic describes how to view the Action history table.

When the conditions of a rule are met, the defined action of the rule is launched on the managed endpoint. You can see all triggered rules and action results in the Action history table.

Operation	Predictive F	ailure Mana	gemer	nt				
Dashboard System Analysis Firmware Update Power Metric Advanced Setting • Predictive Failure Management	Set management policies based on predictive failure alert. View event log and action history.							
	Add Rule	Remove Rule	e	Edit Rule				
	Name	10	Detail		Action			
	Your Rule		Power Supply failure predicted; Power Unit Predictive Failure;		Notify			
	Event Message ID	Time Stamp		Message	1			
	<u> </u>		6:51:34					
	Message ID	Time Stamp		Power Unit Predictive Failure				
	Message ID PLAT0118	Time Stamp 2012-10-12 18 2012-10-12 18		Power Unit Predictive Failure				
	Message ID PLAT0118 PLAT0088	Time Stamp 2012-10-12 16 2012-10-12 16 Refresh		Power Unit Predictive Failure				
	Message ID PLAT0118 PLAT0088	Time Stamp 2012-10-12 16 2012-10-12 16 Refresh	6:49:41	Power Unit Predictive Failure Power Supply failure predicted	tus			

Figure 46. Action History Table

Appendix A. Troubleshooting

The topics in this section will assist you with troubleshooting.

Help Information

On each page, there is one or more help information 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 hosts 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 resolving why a Poll Status displays Failed.

About this task

If the Poll Status displays Failed, verify the following:

Procedure

- 1. The host is Alive.
- 2. Network connection between vCenter and the host is OK.
- 3. The CIM Object Manager (CIMOM) is running on the host.
- 4. Ensure that the credentials for the host are 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 occurs on the Dashboard, during Dynamic System Analysis, or during Firmware Updates, the vCenter Server status is incorrect or the vCenter connection to the managed ESXi endpoint is temporary 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 **Installed version** field is the current firmware version, and if "Undetected" is displayed, 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.

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 2.0 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 using the keyboard instead of the mouse.

You can view the publications for IBM Upward Integration for VMware vSphere, Version 2.0 in Adobe Portable Document Format (PDF) using the Adobe Acrobat Reader. You can access the PDFs from the IBM Upward Integration for VMware vSphere, Version 2.0 Installation and User's Guide download site.

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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.

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