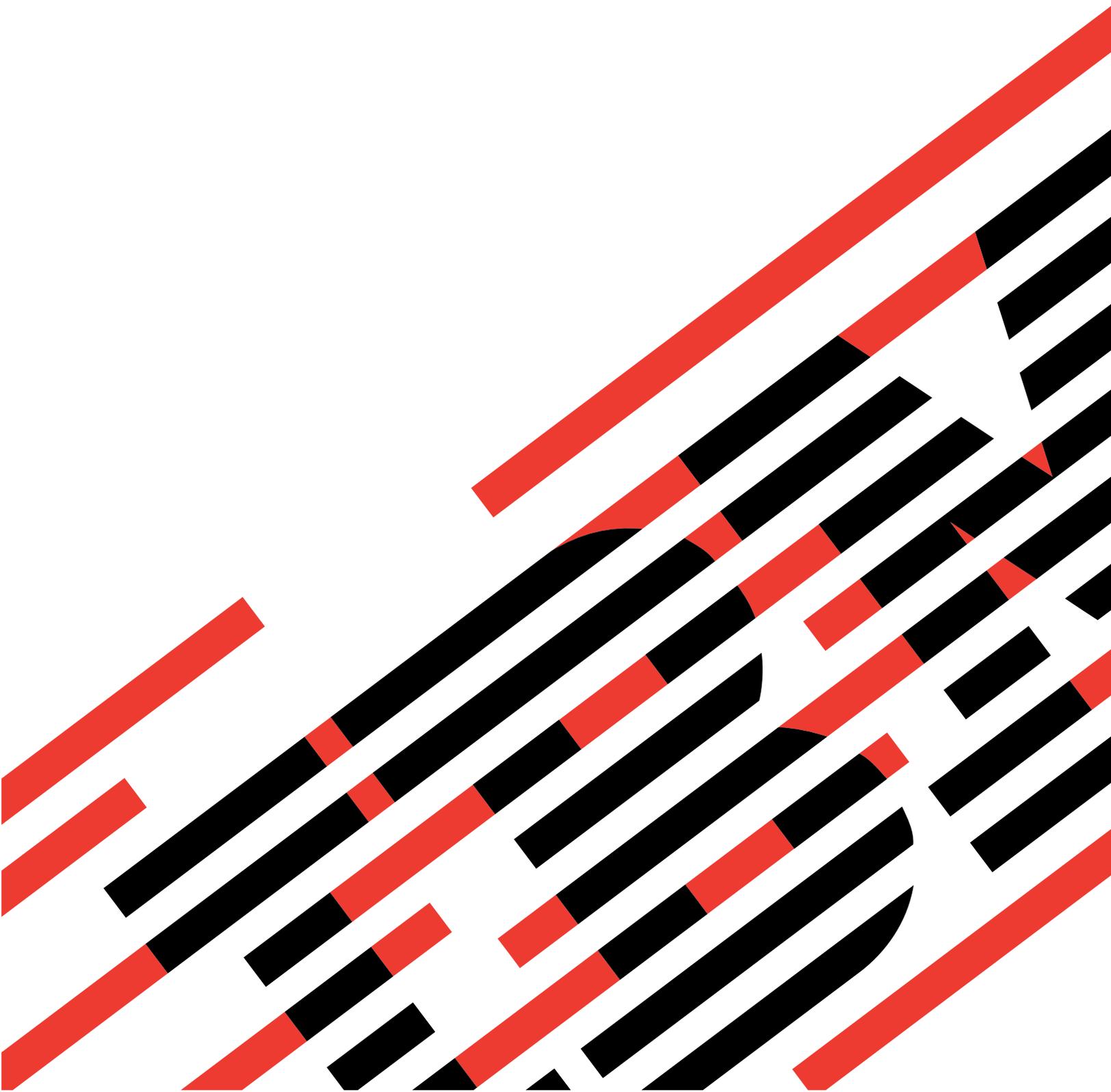




IBM Systems

IBM Virtual Machine Manager 2.0.1

Release Notes







IBM Systems

IBM Virtual Machine Manager 2.0.1

Release Notes

**Note**

Before using this information and the product it supports, read the general information in "Notices" on page 13.

**First Edition (November 2005)**

**© Copyright International Business Machines Corporation 2005. All rights reserved.**

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

---

# Contents

## Chapter 1. About this release . . . . . 1

Changes in the VMM 2.0.1 release . . . . .	1
New in VMM 2.0 release . . . . .	1
Product fix history . . . . .	3
Product compatibility . . . . .	3
VMM information resources . . . . .	3
Documentation . . . . .	3
World Wide Web resources . . . . .	3

## Chapter 2. Installation and upgrade information . . . . . 5

## Chapter 3. Limitations, general problems, and workarounds . . . . . 7

Limitations . . . . .	7
Limitations for any agent of VMM . . . . .	7
Limitations when using VMM Agent for VMware VirtualCenter . . . . .	7

Limitations when using VMM Agent for VMware ESX Server . . . . .	8
Limitations when using VMM Agent for VMware GSX Server . . . . .	8
Limitations when using VMM Agent for Microsoft Virtual Server . . . . .	9
General problems . . . . .	9

## Chapter 4. Corrections to the VMM 2.0 documentation . . . . . 11

Corrections to the Installation and User's Guide (vmm200_users_v2.pdf) . . . . .	11
Problems with VMM Agent for VMware VirtualCenter . . . . .	11
Corrections to the help system . . . . .	11

## Notices . . . . . 13

Trademarks . . . . .	14
----------------------	----



---

## Chapter 1. About this release

IBM® Virtual Machine Manager (VMM) 2.0.1 is a minor update to VMM 2.0.

---

### Changes in the VMM 2.0.1 release

VMM 2.0.1 adds the following enhancements:

#### Support for IBM Director 5.1

VMM 2.0.1 supports both IBM Director 4.22 and IBM Director 5.1.

#### Upgrade from VMM 2.0

You can upgrade from VMM 2.0 to VMM 2.0.1 without uninstalling VMM 2.0. For more information, see Chapter 2, “Installation and upgrade information,” on page 5.

#### Incremental defect fixes

A short list of defects were fixed in VMM 2.0.1. For details, see “Product fix history” on page 3.

For details about the functionality in VMM 2.0.1, see the *IBM Virtual Machine Manager 2.0 Installation and User's Guide*.

---

### New in VMM 2.0 release

VMM 2.0 added the following new features, functions, and enhancements:

#### General enhancements

VMM 2.0 adds the following general enhancements:

- Two new virtualization environments that are supported with VMM 2.0:
  - VMware ESX Server and VMM Agent for VMware ESX Server
  - VMware GSX Server and VMM Agent for VMware GSX ServerVMware VirtualCenter is not used in both of these virtualization environments.
- Support for hosts that are running VMware GSX Server in a VMware VirtualCenter environment.
- Improvements in the migration of a single or all virtual machines on a host, including the ability to create a migration task to migrate all virtual machines on a host to the host with the lowest central processing unit (CPU) utilization.
- IBM Director Command Line Interface (DIRCMD) support for VMM functionality.
- VMM subtasks for the creation of VMM farms and creation of migration tasks. These subtasks are in the Tasks pane of IBM Director Console.
- Attributes for VMM State and VMM Parent and other new attributes for various VMM objects.
- Attributes that can be displayed for guest-operating-system objects.

#### Coordinator objects

VMM 2.0 adds Scheduler tasks to discover all farms that are defined in VMware VirtualCenter and to revoke credentials.

### **VMM farm objects**

VMM 2.0 adds support for the following enhancements:

- Introduction of the *VMM farm* concept that applies to farms in VMware VirtualCenter and the collection of hosts in other supported virtualization environments. The phrase *VMM farm* replaces the phrase *farm* that was used in VMM 1.0.
- Ability to create a VMM farm for hosts that are not in VMware VirtualCenter environments.
- Ability to start and stop all hosts that are running Microsoft® Virtual Server in one VMM farm. (VMM 1.0 only supported starting and stopping of Microsoft Virtual Server on one host at a time.)
- New event action to add a host to a VMM farm.
- Scheduler tasks to delete farms from VMware VirtualCenter server and to start and stop all hosts in a VMM farm that are running Microsoft Virtual Server.

### **Host objects**

VMM 2.0 adds support for the following enhancements:

- Host objects are discovered for systems that are running either VMM Agent for VMware ESX Server or VMM Agent for VMware GSX Server. Systems that are represented by these host objects are not in a VMware VirtualCenter environment.
- Host objects are discovered for systems that are running VMware GSX Server in a VMware VirtualCenter environment. These host objects are not running any VMM agents. Instead, the system running VMware VirtualCenter Server is running VMM Agent for VirtualCenter.
- Scheduler tasks to discover all virtual machines on a host.

### **Virtual machine objects**

VMM 2.0 contains the following enhancements:

- Ability to create and delete a virtual machine.
- Ability to register and unregister virtual machines to and from a host.
- Addition of the pending state.
- Ability to manage power operations and migrate virtual machines that contain undoable disks.
- Ability to change attribute values for virtual machines, including the ability to specify an action to take when powering on or off virtual machines that contain undoable disks.
- Static migration for virtual machines running under these virtualization applications:
  - VMware ESX Server, without VMware VirtualCenter
  - VMware GSX Server, without VMware VirtualCenter
  - Microsoft Virtual Server
- New event filters for attribute changes and for virtual machines in the pending state.
- Scheduler tasks for discovery, migration, and deletion of virtual machines.

For details about the functionality in VMM 2.0, see the *IBM Virtual Machine Manager 2.0 Installation and User's Guide*.

---

## Product fix history

VMM 2.0.1 corrects the following defects:

- When VMM was used to set resources for a virtual machine and a dash (-) was entered into any field on the Set Resources window instead of a numeric value, the VMM Console stopped.
- On systems with fast clock speeds, VMM Agent for Microsoft Virtual Server sometimes lost communication with IBM Director Agent. This problem was seen with IBM @server<sup>®</sup> BladeServer<sup>®</sup> systems running Microsoft Windows<sup>®</sup> Server 2003, IBM Director 4.22 Agent, and VMM 2.0 Agent for Virtual Server.
- The name displayed for a VMM farm in IBM Director Console and the VMware VirtualCenter console was not the same when the name contained the special characters backslash (/) or percent sign (%).

---

## Product compatibility

VMM 2.0.1 is supported for use with these releases of IBM Director:

- IBM Director 4.22
- IBM Director 5.1

Compatibility with other products, such as operating systems or virtualization products from VMware or Microsoft, are described in the installation chapter of the *IBM Virtual Machine Manager 2.0 Installation and User's Guide*.

---

## VMM information resources

You can find additional information about VMM and IBM Director in the product documentation and on the World Wide Web.

### Documentation

In addition to the *IBM Virtual Machine Manager 2.0.1 Release Notes*, VMM 2.0.1 is supported by the *IBM Virtual Machine Manager 2.0 Installation and User's Guide, Second Edition, August 2005* (vmm200\_user\_v2.pdf)

All documentation is in Portable Document Format (PDF). You need Adobe Acrobat Reader or Xpdf to view it.

The *IBM Virtual Machine Manager 2.0 Installation and User's Guide, Second Edition, August 2005* includes documentation corrections previously listed in these release notes. These document corrections are additional migration requirements and information about enabling secure copy (scp) for static migration with VMM Agent for ESX. Furthermore, new information and clarifications have been added to the *IBM Virtual Machine Manager 2.0 Installation and User's Guide, Second Edition, August 2005*. For details, see the summary of changes at the beginning of that document.

The vmm200\_users\_v2.pdf file from August 2005 supersedes the vmm200\_users.pdf file that was available in July 2005.

### World Wide Web resources

The following Web pages provide resources for understanding, using, and troubleshooting IBM Director and systems-management tools.

**IBM Virtual Machine Manager page**

[www.ibm.com/servers/eserver/xseries/systems\\_management/xseries\\_sm/vmm.html](http://www.ibm.com/servers/eserver/xseries/systems_management/xseries_sm/vmm.html)

This Web page presents an overview of VMM and links to download the product, release notes, and user's guide.

**IBM personal computing support page**

[www.ibm.com/pc/support/](http://www.ibm.com/pc/support/)

Locate support for IBM hardware and systems-management software. For systems-management software support, click **Systems management**.

**IBM Systems Management Software: Download/Registration page**

[www.ibm.com/pc/us/eserver/xseries/systems\\_management/dwnl.html](http://www.ibm.com/pc/us/eserver/xseries/systems_management/dwnl.html)

Download IBM systems-management software, including VMM.

**IBM @server<sup>®</sup> xSeries<sup>®</sup> Systems Management page**

[www.ibm.com/servers/eserver/xseries/systems\\_management](http://www.ibm.com/servers/eserver/xseries/systems_management)

Obtain an overview of IBM systems management and IBM Director. This Web page also contains links to Web pages for IBM Director extensions including Remote Deployment Manager (RDM), Scalable Systems Manager (SSM), Server Plus Pack, and Software Distribution (Premium Edition).

**IBM ServerProven<sup>®</sup> page**

[www.ibm.com/pc/us/compat/index.html](http://www.ibm.com/pc/us/compat/index.html)

Obtain information about IBM @server<sup>®</sup> xSeries<sup>®</sup>, IBM @server<sup>®</sup> BladeCenter<sup>®</sup>, and IBM IntelliStation<sup>®</sup> hardware compatibility with IBM Director.

## Chapter 2. Installation and upgrade information

VMM has three software components that are installed on different servers in your network:

- VMM Server is installed on the management server that is running IBM Director Server.
- VMM Console is installed on the management console that is running IBM Director Console.
- The applicable version of VMM Agent is installed on a managed system that is running one of the following sets of software:
  - IBM Director Agent, VMware VirtualCenter server, and VMware VirtualCenter Web service
  - IBM Director Agent and VMware ESX Server (service console only)
  - IBM Director Agent and VMware GSX Server
  - IBM Director Agent and Microsoft Virtual Server

Table 1 describes the high-level steps necessary to install or upgrade to VMM 2.0.1.

Table 1. Installation matrix of IBM Director and VMM versions

IBM Director version	VMM version	Installation steps
IBM Director 4.20 IBM Director 4.21	VMM 1.0	Complete these steps to upgrade the system to VMM 2.0.1: <ul style="list-style-type: none"> <li>• Uninstall VMM 1.0.</li> <li>• Upgrade to IBM Director 4.22 or IBM Director 5.1</li> <li>• Install VMM 2.0.1</li> </ul>
IBM Director 4.22	VMM 2.0	Install VMM 2.0.1, which upgrades the VMM 2.0 installation; uninstallation of VMM 2.0 is not required.
IBM Director 5.1	None	Install VMM 2.0.1. <b>Note:</b> (Linux <sup>®</sup> installations running a new installation of IBM Director 5.1) IBM Director 5.1 uses /opt/ibm/director as the installation path on the VMware ESX console. However, the VMM 2.0.1 installation occurs in the /opt/IBM/director path. When installing VMM 2.0.1 on IBM Director 5.1, you must inform the .rpm file of the nondefault installation path. In this situation, use the following command: <pre>rpm -Uvh -relocate /opt/IBM/director=/opt/ibm/director VMESXAgent-2.0.1-1.i386.rpm</pre> IBM Director 4.22 and earlier versions use /opt/IBM/director as the installation path on the VMware ESX console. Further, if you upgraded to IBM Director 5.1 from IBM Director 4.22 or earlier, the upgrade also uses the preexisting /opt/IBM/director as the installation path. In both cases, you do not need to use this .rpm command to indicate a nondefault installation path because VMM 2.0.1 uses the same preexisting installation path.

The information in Table 1 is applicable to all VMM components that need to be installed, including VMM Server, VMM Console, and VMM Agent components.

Detailed installation instructions, including other system requirements, are provided in the *IBM Virtual Machine Manager 2.0 Installation and User's Guide*.



---

## Chapter 3. Limitations, general problems, and workarounds

This chapter contains information about limitations, general problems, and workarounds.

---

### Limitations

The limitations in VMM 2.0.1 either apply to all VMM agents or to a specific VMM agent that is being used.

#### Limitations for any agent of VMM

VMM 2.0.1 has the following limitations for any agent of VMM:

##### **Unable to use DIRCMD with the Korean version of Windows**

IBM Director command-line interface (DIRCMD) and VMM commands use the backslash (\) for various commands. For example, the backslash is used when designating the full path name to a virtual machine configuration file. However, the Korean version of Microsoft Windows uses a different character for backslash. Therefore, when a backslash is used with DIRCMD, it fails to run on the Korean version of Windows.

##### **VMM icon is not displayed properly on Windows 2000 without installing Service Pack 4**

After you install a VMM component on a system that is running Windows, the VMM program is listed as a currently installed program on the Add/Remove Programs window. However, when the system is running Windows 2000 without Service Pack 4, the icon for the VMM program is not displayed properly. After Service Pack 4 has been installed, the VMM icon is displayed properly. This limitation is seen when running the English and Korean versions of Windows 2000.

#### Limitations when using VMM Agent for VMware VirtualCenter

VMM 2.0.1 has the following limitations when using VMM Agent for VMware VirtualCenter:

##### **Adding a host to a VMM farm**

If you use VMM to add a host to a VMM farm in VMware VirtualCenter and you enter correct credentials for the coordinator, a failure message is displayed about Web services communication with the vendor failing. If you try to add the host again, a different failure message is displayed about the host already existing. When this happens, the host is already defined in VirtualCenter, but it takes several minutes for its corresponding host object to appear in IBM Director Console.

Further, if you add a host to a VMM farm, but you enter incorrect credentials for the coordinator, then later when you enter the correct credentials for the coordinator, this operation can take several more minutes to be completed successfully.

##### **Excessive windows prompting for undoable disk power actions**

When a virtual machine has one or more undoable disks and a power operation occurs on that virtual machine, VMware VirtualCenter requires user input to complete the operation. If the power operation is originated by VMM, then VMM provides the required input. However, if there is a

VMware Remote Console open at the time that the power operation occurs, then a window opens that asks for the required information even though it has been provided by VMM. When a user attempts to provide the information requested, an error message is displayed.

This same behavior can be observed when two VMware Remote Console sessions are open to the same virtual machine. In that case, even though the question might be answered at one console, the window at the second console remains open and returns an error if the user attempts to answer the question.

## Limitations when using VMM Agent for VMware ESX Server

VMM 2.0.1 has the following limitations when using VMM Agent for VMware ESX Server:

### **Changed UUIDs can cause virtual machine objects to disappear from IBM Director Console**

If you power off a virtual machine with the VMware Console and select to always create a new universal unique identifier (UUID) and later use VMM to migrate that virtual machine, then the UUID for the virtual machine is changed when the virtual machine is eventually powered on at the destination host. This sequence of events causes the virtual machine object to be deleted from IBM Director and causes a Virtual Machine, Deleted event to occur.

To restore the virtual machine object to IBM Director Console, you must use VMM to discover the virtual machines on the host. From IBM Director Console, in the Group Contents pane, right-click the managed object for the host and click **Host Management** → **Discover Virtual Machines**.

### **Names of virtual machines created by VMM cannot contain some special characters**

VMM Agent for ESX does not support the creation of virtual machines that contain backslashes (\), forward slashes (/), colons (:), or semicolons (;). This problem only affects the creation of the virtual machines through VMM. Note that when a virtual machine is created with these characters through VMware VirtualCenter client, VMM can manage the virtual machine.

## Limitations when using VMM Agent for VMware GSX Server

VMM 2.0.1 has the following limitations when using VMM Agent for VMware GSX Server:

### **Shutting down and powering off a virtual machine under Windows 2000**

If you use VMM to shut down and power off a virtual machine that is running Windows 2000, the virtual machine is only shut down, it is not powered off. You must use the VMware Console to power the virtual machine off. Further, in VMM, the virtual machine remains in the transition state. After the virtual machine has been powered off through the VMware Console, use VMM to rediscover the virtual machine so that VMM reflects the powered-off state.

### **Migrating a powered-on virtual machine that is running Windows 2000**

If a powered-on virtual machine is migrated, the migration process cannot be completed as the VMM Agent for GSX cannot power off the virtual machine, which is required for static migration. To resolve this issue, use the VMware Console to manually power off the virtual machine. If the

power off occurs within the timeout period of the VMM Server (generally 5 minutes), VMM detects the state change of the virtual machine and continues the migration.

## Limitations when using VMM Agent for Microsoft Virtual Server

VMM 2.0.1 has the following limitations when using VMM Agent for Microsoft Virtual Server:

### Shutting down and powering off a virtual machine when the guest operating system is locked

If you use VMM to shut down and power off a virtual machine when the guest operating system is locked, the virtual machine is not shut down nor powered off. You must use the Administration Web site to Microsoft Virtual Server. Further, in VMM, the virtual machine remains in the transition state. After the virtual machine has been powered off through the Administration Web site, use VMM to rediscover the virtual machine so that VMM reflects the powered-off state.

### Migrating a powered-on virtual machine when the guest operating system is locked

If a powered-on virtual machine is migrated, but the guest operating system is locked, the migration process cannot be completed as the VMM Agent for Virtual Server cannot power off the virtual machine, which is required for static migration. To resolve this issue, use the Administration Web site to Microsoft Virtual Server to manually power off the virtual machine. If the power off occurs within the timeout period of the VMM Server (generally 5 minutes), VMM detects the state change of the virtual machine and continues the migration.

---

## General problems

This section contains information about these general problems applicable to VMM 2.0.1:

### Start Vendor Software task and VMware VirtualCenter client

If a user who does not have Windows administration privileges tries to use the Start Vendor Software task to run the VMware VirtualCenter client, an exception error message is displayed that does not indicate the true problem. If an exception error occurs, make sure that the user has Windows administration privileges on the system from which the user is trying to run VMware VirtualCenter client.

### Multiple power operations in a Microsoft Virtual Server environment

Sometimes one or two events are not received by VMM Server when VMM Agent is monitoring multiple events from power operations that occur on virtual machines that are in a Microsoft Virtual Server environment. This problem occurs intermittently when more than 50 virtual machines are associated with one host. When a power operation event is not received by VMM Server, VMM cannot update the state icons for the virtual machine. If this happens, manually discover the virtual machines that are associated with a host.



---

## Chapter 4. Corrections to the VMM 2.0 documentation

This chapter provides corrections to the VMM 2.0.1 documentation and online help.

---

### Corrections to the Installation and User's Guide (vmm200\_users\_v2.pdf)

The following information should be added to Chapter 8, "Solving VMM problems," of the *IBM Virtual Machine Manager 2.0 Installation and User's Guide*.

#### Problems with VMM Agent for VMware VirtualCenter

Table 2 describes one of the problem symptoms and suggested solutions for VMM when used in a VMware VirtualCenter environment. For information about other problem symptoms and suggested solutions for using VMM in a VMware VirtualCenter environment, see Chapter 8, "Solving VMM problems," of the *IBM Virtual Machine Manager 2.0 Installation and User's Guide*.

Table 2. VMM problems with VMM Agent for VMware VirtualCenter

Symptom	Suggested action
VMware VirtualCenter shows a host associated with a VMM farm when that same host is not associated with that same VMM farm in IBM Director.	<p>This symptom occurs when any failure happens in IBM Director when you try to add the host to a VMM farm. For example, if you enter the wrong password when adding the host to a VMM farm in IBM Director, the operation will fail.</p> <p>When this situation happens, use the interface provided by VMware VirtualCenter to remove the host from the VMM farm. Next, resolve the source of the failure in IBM Director. Lastly, use IBM Director to add the host to a VMM farm.</p>

---

### Corrections to the help system

The help system requires the additional information that has been added to the *IBM Virtual Machine Manager 2.0 Installation and User's Guide, Second Edition, August 2005* (vmm200\_users\_v2.pdf). For details, see the summary of changes at the beginning of that document.



---

## Notices

This information was developed for products and services offered in the U.S.A.

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

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

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

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

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

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

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

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

IBM makes no representations or warranties regarding third-party products or services.

---

## Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

BladeCenter  
@server  
IBM  
IBM logo  
IntelliStation  
ServerProven  
xSeries

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

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

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





Part Number: 40K1394

Printed in USA

(1P) P/N: 40K1394

