Virtual Iron® Software Release Notes

Virtual Iron® version 4.0.0

PRELIMINARY

Contents

Enterprise Edition Upgrade Instructions

If you are running an earlier version of Virtual Iron®, use this link and follow the instructions to upgrade to the current version of the product. Install the new VS Tools onto each of your Virtual Servers.

http://virtualiron.custhelp.com/cgi-bin/virtualiron.cfg/php/enduser/std_adp.php?p_faqid=100&p_created=1173142157

Single Server Edition Upgrade Instructions

If you are running an earlier version of Virtual Iron®, use this link and follow the instructions to upgrade to the current version of the product.

http://virtualiron.custhelp.com/cgi-bin/virtualiron.cfg/php/enduser/std_adp.php?p_faqid=100&p_created=1173142157

New in This Release

The following major enhancements are included in this release:

- SUSE Linux Enterprise Server 10 kernel and drivers have been integrated in Virtual Iron's core virtualization architecture. Users have access to complete Novell certification and global commercial support for servers, storage, and networking hardware supported by Novell in SUSE LINUX Enterprise Server. This includes systems from IBM, HP, Dell, Network Appliances, Cisco, and others.
- This release integrates the Xen 3.1 64-bit hypervisor, which provides support for up to 128 GB of physical memory and per-guest virtual machine limits of 32 GB. The new hypervisor also supports up to 8-way SMP per guest and leverages ACPI to support dynamic hot-plugging of CPU, network, and storage running into virtual machines.
- Release 4.0.0 adds support for several new 32- and 64-bit operating systems, including Windows Vista, Windows 2000, and Red Hat Enterprise LINUX 3.
- This release includes Windows SMP support for virtual machines with up to eight CPUs. This provides administrators the ability to virtualize more demanding workloads, such as Microsoft Exchange and SQL server.
- LiveConvert ™ physical-to-virtual and virtual-to-virtual conversion capabilities have been added in this release. LiveConvert™ allows the migration of data, applications, and operating systems across physical, virtual, blade, and image-based infrastructures.
- Release 4.0.0 contains changes and additions to the Virtualization Manager interface. Included are new management wizards for creating and managing virtual machines, and new graphing and reporting tools for measuring resource utilization and performance, including CPU, memory, disk, and network I/O.

Workaround For Issue 502

Virtual Console keyboard hard-wired to US english 101

You must use the US-English 101 keyboard in order to enter text for the Virtual Console. Non-English keyboards do not map their keys properly.

Users of Japanese, German, and other non-English 101 keyboard types, can use the following workaround to set the Virtual Console's keyboard.

Workaround

Java 1.6 fixed a number of long standing key map/keyboard issues. Therefore, for Virtual Iron's virtual server console to work with non-English keyboards, it must be run in a Java 1.6 runtime environment.

Following are instructions for installing Java 1.6 on a client that has a non-English keyboard, and for configuring a guest OS and virtual server to use the corresponding key map.

Install Java 1.6

Download the latest Java 1.6 from http://www.java.com/en/download/manual.jsp and install it on the computer used to run the Virtualization Manager.

When you start the Virtualization Manager, check the first two lines of Java Console output to make sure that you're using the correct version. You should see something similar to the following:

Java Web Start 1.6.0

Using JRE version 1.6.0 Java HotSpot(TM) Client VM

Configure Keyboard

Configure the guest OS to use the correct keyboard. If it isn't already configured:

- Start the virtual server (it will use the default en-us key map).
- Start a virtual server console.
- Configure the guest OS to use the correct keyboard. You must use the en-us key map to do this. For example, if you're using a German keyboard (QWERTZ not QWERTY—the Z and Y are swapped), and need to enter the letter Y, type the Z key (German keyboard, English key map).

The API has methods to set and get the name of the key map used by virtual server consoles. The default key map name is en-us. It can be overridden at the foundry, virtual data center, or virtual server level. The key map names correspond to the names of the QEMU key map used by Xen.

Each key map name consists of an ISO 639-1 language code:

(http://www.loc.gov/standards/iso639-2/php/English_list.php)

These are optionally followed by a dash and an ISO 3166-1 country code:

(http://www.iso.ch/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/list-en1.html)

The following key map names are supported.

Supported Key Map Names						
ar	da	de	de-ch	en-gb	en-us	es
et	fi	fo	fr	fr-be	fr-ca	fr-ch
hr	hu	is	it	ja	lt	lv
mk	nl	nl-be	no	pl	pt	pt-br
ru	sl	sv	th	tr		

Use *runner* to configure key maps. For example:

```
# ./runner.sh
Virtualization Manager API Runner: v3.0 Interactive Mode
>>> from com.virtualiron.vce.mgmt.api import *
>>> from com.virtualiron.vce.mgmt.api.physical import *
>>> from com.virtualiron.vce.mgmt.api.virtual import *
```

```
>>> cm = VirtualizationManager.getConfigurationManager()
>>> vs = cm.findObject(VirtualServer, 'VS123')
>>> vs.getKeymapName()
'en-us'
>>> # configure VS123 to use German keymap
>>> vs.setKeymapName('de')
>>> vs.getKeymapName()
'de'
>>> # configure VS123 to inherit keymap from its VDC
>>> vs.setKeymapName(None)
>>> vs.getKeymapName()
'en-us'
>>> vdc = vs.getAssociatedVirtualDataCenter()
>>> vdc.getKeymapName()
'en-us'
>>> vdc.setKeymapName('de')
>>> vdc.getKeymapName()
'de'
>>> # by default all virtual servers in this VDC will use 'de'
>>> vs.getKeymapName()
'de'
```

If a virtual server is running, restart it for the new key map to take effect.

Note that there are still a few key map issues, even if you use Java 1.6, as when for example, a virtual server console displays a text console (the one that looks like a vt100 terminal). This is alleviated once you start up a graphical desktop such as Gnome. Only dead keys continue to be a problem when a graphical desktop is used.

Using the virtual server console to interact with a graphical desktop on the guest OS, you can configure VNC or Remote Desktop. If you need to use dead keys to produce diacritical marks above letters, don’t use the virtual server console. Instead, switch to a native VNC or Remote Desktop client.

FIXED IN THIS RELEASE

The following issue has been resolved in this release.

CANNOT USE DISKS LARGER THAN 128 GB IN THE VS WITHOUT VS TOOLS

Virtual Iron does now supports disks larger than 128GB without VS Tools.

Reference Number: 462

VIRTUAL CONSOLE KEYBOARD HARD-WIRED TO US ENGLISH 101

There is now a workaround for this issue. Refer to Workaround For Issue 502.

Reference Number: 502

3COM ETHERNET CARDS DO NOT PROPERLY DISPLAY ETHERNET CARRIER UP/DOWN STATUS.

In previous releases, 3Com Ethernet cards did not provide Ethernet carrier status prior to starting a virtual server connected to that port. As a result, the port status could be displayed as down even though the port was working properly. This issue has been resolved.

Reference Number: 579

CLOCK ISSUES HAVE BEEN OBSERVED WHEN RUNNING MANY VIRTUAL SERVERS UNDER HEAVY LOAD

In previous releases, when running multiple virtual servers on a single physical node under heavy load, the virtual server's clock was observed to run faster than "true" time as measured by an external time source. Over time, the clock skew would result in virtual server time differing from external time by minutes or hours. This issue has been resolved with this release.

Reference Number: 671

WINDOWS® GUESTS NOT SUPPORTED WITH MORE THAN 4GB OF MEMORY

In previous releases, when running Windows® on a virtual server, you could not configure your virtual server with more than 4GB of memory. This issue has been resolved.

Reference Number: 897

VDISK CLONE PROGRESS BAR IS INACCURATE

The progress of a vDisk clone, import, or export operation is now accurately reflected by a progress bar every ten to fifteen seconds.

Reference Number: 1029

RED HAT 4 CAN BOOT INTO A BLANK SCREEN AFTER INSTALLATION

In previous releases, if you installed RHEL-4, when you booted into runlevel 5 the

first time after install you would see a blank screen. This issue has been resolved.

Reference Number: 1122

SOME CONSOLE-MODE INSTALLATIONS DO NOT WORK USING WINDOWS REMOTE DESKTOP

Prior to 4.0.0 it was not possible to install Cygwin in a virtual server using Windows RDP. This issue has been resolved in this release.

Reference Number: 1184

ADD A NEW ETHERNET NIC REQUIRES A NODE REBOOT

With Release 4.0.0, it is no longer necessary to delete, then add, and then rediscover a new Ethernet NIC added to a server.

Reference Number: 2010

MULTIPLE VIRTUAL NICS IN LINUX VIRTUAL SERVER REQUIRES MANUAL CONFIGURATION

Workaround:

1. When you add multiple virtual NICs to a RedHat virtual server, copy and edit

/etc/sysconfig/network-scripts/ifcfg-eth0

to add the additional device.

2. For a SLES virtual server, run yast and in the network devices configuration, select **Other** to bring up the interface configuration and enter the correct eth number.

This workaround has been added to the *Virtualization Manager Administration Guide*, Chapter 7.

Reference Number: 2013

VIRTUALIZATION MANAGER DOES NOT SEE LOCAL DRIVES WITH SMART FEATURES

It is not longer necessary to disable SMART in the node's BIOS for the disks to be accessible.

Reference Number: 2064

SINGLE SERVER EDITION INSTALL FAILS "UNABLE TO FIND THE INSTALLATION MEDIA"

In previous releases, if you installed Single Server Edition systems with a USB CDROM drive and had USB2 enabled in the BIOS, you would see the message: "Unable to find the installation media. This release now supports the EHCI (USB 2.0) controller.

Reference Number: 2433

HOW TO CHANGE THE IP ADDRESS OF THE VIRTUALIZATION MANAGER

The following information has been added to Chapter 9 of the *Virtualization Manager Administrator Guide*:

Follow these steps to change the Virtualization Manager IP address:

1. Stop the Virtualization Manager.
2. Change the IP address on the Virtualization Manager system via the host operating system.
3. Copy the file VirtualizationManager\etc\dhcpd.conf_default to VirtualizationManager\etc\dhcpd.conf
4. Copy the file VirtualizationManager\etc\dhcpd.leases_default to VirtualizationManager\etc\dhcpd.leases
5. Start the Virtualization Manager and reboot all nodes.

Reference Number: 2571

SINGLE NODE TO MULTI-NODE MANAGEMENT SERVER CONVERSION

The following information has been added to Chapter 9 of the *Virtualization Manager Administrator Guide:*

Management Server IP address changing now allows single node to multi-node conversion. Use the following procedure.

NOTE: Before converting, assure that your single node and multi-node management servers are both running the same version of Virtual Iron Management software, and that the time and date settings are the same.

1. Launch the Virtual Iron Administration Manager on your single node management server.
2. In the Administration Manager, click the pulldown arrow next to **Backup** and select **Database Only**.
3. In the Administration Manager, click the **File Management** pulldown and select **Get a File from the Virtualization Manager**.
4. Navigate to your backup directory and select your backup file named backDB.X.Y.tar, where X is the date of the backup and Y is the product version number.
5. At this point, unplug the public Ethernet from your single node management server's primary Ethernet port and plug it into the secondary. Take a *new* Ethernet cable and plug your primary network interface into the network managed by the new multi-node management server. Make sure that the BIOS on the former single node is set to **PXE boot**.
6. Launch the Administration Manager on the multi-node management server
7. In the Administration Manager, click the pulldown arrow next to **File Management** and select **Put a File onto the Management Server**.
8. Locate the backupDB.tar file on your local machine and place it in the backup directory on your multi-node management server.

> ***WARNING****: Before performing the next step, note that if you have any data on the multi-node install, it will be erased.*

9. In the command line in your Virtualization Manager console, type the following:

   restore.sh/ .bat backupDB.tar.datetime.4.0.x.x.tar

10. Restart the management server.
11. Power cycle the node that was originally the single node management server.
12. Run the VI script to fix DHCP.
13. Login to your management server. Use the same password for your Enterprise Edition Virtualization Manager that you used for your Single Server Edition, and log in.

Reference Number: 2572/2700/2701

ONLINE HELP DOES NOT REFLECT CHANGES IN RELEASE 3.7.0.

This issue, which originally occurred in 3.7.0, has been resolved in Release 4.0.0.

Reference Number: 2760

SSE RAID CONSIDERATIONS, REV 3.

The following information has been added to Chapter 2 of *Virtualization Manager Administrator Guide:*

When using RAID on SSE, you should consider the layout of the RAID set prior to SSE installation. If you are going to use RAID to configure your physical storage prior to VI installation, you should configure one physical volume to be excluded from the RAID set and it will be used for the Virtual Iron install. You should create another volume(s) using the remaining storage to store virtual/logical disks for use by Virtual Servers.

During the installation process, the SSE installer will clear the all disk data on the boot volume of the physical server; so is not recommended to store logical disks on that volume. Logical disks created on the boot volume can be saved, but it requires that you export the drives prior to the re-install process. This is a time consuming process. Therefore, if you have multiple physical volumes on your node, combining them into one single large RAID'ed volume is not an optimal practice.

A better approach is to use one physical volume for the Virtual Iron software and then create separate volumes to be used for logical disks. We recommend at least 36 GB for this volume. Then you can configure the remaining physical volumes for logical disks.

Here's an example. If you have four 250 GB disks in your system, you should not create one large 1,000 GB volume. Instead, use one 250 GB volume for the boot/install disk, and then you can create one 750 GB RAID-set volume to be used for storing logical disks.

Reference Number: 3031

NBD FILE .ISO EXTENSION MUST BE LOWER CASE

For iso files to appear in the VS Configuration & Boot Options > Network (image) Boot menu, the .iso extension must be in lower case letters.

Reference Number: 3049

DISABLING WRITE-CACHING ON WINDOWS FOR THE VIRTUALIZATION MANAGER

The following information has been added to Chapter 2 of the *Virtualization Manager Administrator Guide:*

If you run the Enterprise Edition of Virtualization Manager on a Windows system, it is considered a best practice to disable write-caching on the drives used by the Virtualization Manager. Disabling write-caching helps to avoid file corruption problems that can sometimes result if the system loses power suddenly while running.

To disable disk write-caching,

1. Right-click **My Computer**, and then click **Properties**.
2. Click the **Hardware** tab.
3. Click **Device Manager**.
4. Click the **plus sign** (+) next to the **Disk Drives** branch to expand it.
5. Right-click the drive on which you want to enable or disable disk write caching, and then click **Properties**.
6. Click the **Disk Policies** tab.
7. Click to clear the **Write Cache Enabled** check box.
8. Click **OK**.

Reference Number: 3059

Open Issues in this Release

Following are known issues related to this release.

Linux timer issue

Occasionally during Linux boot or kernel calibration issues, the following error will appear and the operating system will crash:

```
MP-BIOS bug: 8254 timer not connected to IO-APIC Kernel panic - not syncing:
IO-APIC + timer doesn't work! Try using 'noapic'
```

Please report crashes to Virtual Iron Technical Support.

Reference Number: 29

QLogic HBAs not reporting performance information

QLogic HBAs are currently not reporting disk performance information to the Virtualization Manager.

Reference Number: 172

Different physical cards/ports on the same managed node cannot be associated with the same subnet.

Virtualization Manager does not support connecting multiple physical ports to the same network. At present, each port can be assigned to exactly one network.

Reference Number: 322

JBOD SAN disks are not recommended as virtual server storage devices

JBODs can be used for storage devices for Virtual Servers, but they are not recommended. If JBOD disks go off-line and then back on-line while connected to managed nodes, the node will go into an error state that requires a node reboot. Use SAN disks connected via a SAN controller.

Reference Number: 355

Ctrl-Escape, Alt-Escape and Alt-Tab are not functional in this release

In the Virtual Server Console window, there is a pull-down menu titled Commands. Ctrl-Escape, Alt-Escape, and Alt-Tab, are not currently functional.

Reference Number: 458

Keyboard input into virtual console occasionally results in repeated characters

When you type into a virtual console that contains an X windows display, occasionally the keyboard output will be repeated. For example if you type **ls** into a terminal window in X, you may see lllllssss output in the virtual console. The workaround is to disable the keyboard repeat function.

Reference Number: 537

VIRTUALIZATION MANAGER SHUTDOWN CAUSES VSS BOOTED FROM A NETWORK BOOT DEVICE TO HANG

Stopping or Restarting the management server takes down the NBD server. This takes down all VSs booted using NBD. To resolve this issue, restart the management server. Then, perform a hard reset on each impacted VS.

Reference Number: 619

POOR NETWORK PERFORMANCE ON 3COM NICS

Poor network performance has been observed on 3COM NICs. This may impact the performance of virtual server network operations.

Reference Number: 723

APPLICATIONS THAT ATTEMPT TO COMMUNICATE DIRECTLY TO AN HBA ARE NOT SUPPORTED

Kernel-level management applications or agents (such as Emulex HBAnywhere, QLogic SANSurfer) in a guest operating system that communicate directly to an HBA or directly to other specific devices are not supported. Running these types of applications may cause virtual servers to become unresponsive.

Reference Number: 892

ADDING OR REMOVING LUNS MAY REQUIRE A NODE REBOOT

When adding or removing LUNs to the system to modify storage capacity, it may be necessary to reboot the nodes to accurately display the LUN configuration. If a LUN is removed or offline and the Virtualization Manager shows it as online, errors may result if a user attempts to perform operations on that LUN such as creating virtual hard disks.

Reference Number: 1182/1189

THE VIRTUALIZATION MANAGER USER INTERFACE MAY RUN SLOWLY IF ANTI-VIRUS SOFTWARE IS RUNNING ON THE MANAGEMENT SERVER HOST.

Some anti-virus software inspects Java applications. This may result in reduced Virtualization Manager client performance. If this occurs, designate Virtualization Manager a trusted application in the virus scanning software.

Reference Number: 1504

VIRTUALIZATION MANAGER INSTALL FAILS WITH BONDED ETHERNET

The Virtualization Manager installer does not handle bonded Ethernet controllers. Make sure the network controller on the node that will be running the management server is not bonded before starting the installation.

Reference Number: 1816

DataCore thin provisioning cannot be used with virtual iron vDisks

DataCore LUNs used for vdisks must have sufficient backing storage for the size of the Virtual Iron volume group. Set the Datacore NMV chunk size to be 4 MB

Reference Number: 1962

RH3-U8 Console Keyboard Not Working with Kudzu

If RedHat 3 is installed while the virtual server is configured in the Virtualization Manager with a USB mouse (for example, RHEL4 LINUX) instead of a PS2 mouse, you will be in Kudzu after you boot with a PS2 mouse configuration. Kudzu can not use the mouse or keyboard at that point and will timeout. The system will continue to boot.

Workaround: Configure the virtual server properly in the Virtualization Manager prior to installing.

If the problem does occur, correct the Virtualization Manager virtual server configuration. Then, boot the virtual server and manually invoke Kudzu from a console window. Remove the USB drive when you are prompted to do so.

Reference Number: 2028

It is recommended to run SLES 9 with the bigsmp kernel.

It is recommended for optimal performance to run SLES 9 with the bigsmp kernel.

Reference Number: 2167

The administration manager is not compatible with java build 1.5.0_06_b05.

Virtual Iron® recommends running the latest Java Version 1.5.0 (build 1.5.0_10-b03 or later) on the system that is running the Administration Manager client.

Reference Number: 2244

When adding a new LUN from dell ax150i the node must be rebooted to be seen by virtualization manager.

When a new LUN is added from a Dell AX150i, each node that needs to access the LUN must be rebooted. First LiveMigrate all virtual servers off the node. Then reboot the node. Then you can LiveMigrate servers back onto the node.

Reference Number: 2278

Dynamic resizing of LUNs

Use the following procedure if you have to resize a LUN.

1. Cause the LUN you wish to resize to go offline, which is depicted in the Management Server Hardware view as offline.
2. Delete that LUN from the Management Server Hardware view and **Commit** this operation
3. Resize the LUN to your needs.

4. Rediscover the LUN in your Management Server Hardware view with the **Node--> Rediscover** option or the **Node--> Rescan SAN Ports** option.

Reference Number: 2549

IPV6 NETWORKS ARE NOT SUPPORTED.

Reference Number: 2763

EXISTING WINDOWS GUESTS LOSE TABLET MOUSE

When a QEMU Windows guest that was installed on an earlier hypervisor is booted, the USB table mouse configuration in the guest is lost. The device managers shows a PCI device and an unknown device.

Workaround: Use the hardware wizard in this release. If you go through the steps it will fail to find a driver for the PCI device, but it will automatically configure the unknown device, which is actually the USB table mouse. After you go through the steps in the wizard, the USB table mouse is restored.

Reference Number: 3045

WINDOWS 2000 GUESTS USING 100% CPU WHILE IDLE WITHOUT ADS

Windows 2000 guests without accelerated drivers (ADs) use 100% of a CPU when idle, which is a a known issue when running virtualized Windows 2000.

Workaround: Download and install a third party fix. Install Virtual Iron's VSTools (accelerated drivers).

Reference Number: 3600

WINDOWS 2000 IDLE LOOP CONSUMING TOO MUCH OF CPU

Windows 2000 spins in its idle loop when running with multiple processors. This occurs with or without VSTools or ADs (accelerated drivers) installed.

Workaround:

1. In the Virtualization Manager, navigate to the **system/vstools/win** directory. Download the following files into the Windows 2000 OS (via the browser):

Win2000_idler_on.reg This .reg file turns the idler on.

Win2000_idler_off.reg This .reg file turns the idler off**.**

2. Double click on the appropriate file to turn the idler on or off.
3. Answer **Yes** to **Are you sure you want to add the information...**
4. Navigate to My Computer > Manager > Services and Applications > Services.
5. Right-click **Virtual Iron Service** and select **Restart**.

Reference Number: 3715

HOW TO UPDATE WINDOWS HALS

The following table outlines the procedure for changing various Windows OS HALs from uni-processor to multi-processor and back again.

Windows OS	
Windows 2003 64-bit	If you boot a uni-processor virtual server with a multi-processor HAL, Windows automatically installs the uni-processor HAL and prompts you to reboot.
	If you boot a multi-processor virtual server with a uni-processor HAL, Windows automatically installs the uni-processor HAL and prompts you to reboot.
Windows 2003 32-bit	Windows automatically detects a change to multi-processor and loads the multi-processor HAL. A reboot is required to run the new HAL.
	Windows 2003 32b does *not* downgrade the HAL to uni-processor if it detects 1 CPU running on the multi-processor HAL—it keeps running the multi-processor HAL.
Windows 2000 32-bit	To change a uni-processor HAL to a multi-processor HAL: Open **Device Manager**. Expand **Computer**. Right-click **ACPI Uni-processor PC**. Select **Properties**. Select **Driver** tab and **Update Driver...** Click **Next** to get to **Install Hardware Device Drivers**. Select **Display a list of the known drivers for this device...** Select **Show all hardware of this device class**. Select **ACPI multi-processor PC**. Answer **Yes** to the pop-up warning to proceed. Close out of Device Manager and reboot the system.
	To change a multi-processor HAL to a uni-processor HAL: Open **Device Manager**. Expand **Computer**. Right-click **ACPI Multi-processor PC**. Select **Properties**. Select **Driver** tab and **Update Driver...** Click **Next** to get to **Install Hardware Device Drivers**. Select **Display a list of the known drivers for this device...** Select **Show all hardware of this device class**. Select **ACPI Uni-processor PC**. Answer **Yes** to the pop-up warning to proceed. Close out of Device Manager and reboot the system.

Windows OS	
Vista 32-bit	Vista does not call out a uni- or multi-process ACPI in Device Manager. However, when you install a uni-HAL and later boot with two CPUs, you must reboot for the HAL to change. If you later boot with 1 CPU on a multi-processor HAL, no changes occur.

Reference Number: 3732

SAN MULTIPATH SUPPORT

SAN multipath has been tested on limited configurations in Virtual Iron. Supported configurations include:

- EMC CLARiiON AX150 Active/Active array with round robin policy for failover
- HP MSA 1500 Active/Active array with round robin policy for failover

The following failure scenarios have been tested: HBA and array cable pulls and switch port disable.

Other configurations may work but are not fully supported. Please contact Virtual Iron® technical support if you want to use SAN multipath in alternate configurations.

Reference Number: None

PRODUCT DOCUMENTATION

The following documents are available on the CD that ships with the product.

- *Virtualization Manager™ Quick Start Guide* - Guides you through the process of getting a virtual server up and running
- *Virtualization Manager™ Administrator Guide* - Explains how to configure and manage virtual data centers and virtual servers.

CONTACTING VIRTUAL IRON SUPPORT

Use this information to reach Virtual Iron® customer support.

Phone: 1-800-314-9872 (Select option 2)
Mail: support@virtualiron.com

Web: http://virtualiron.custhelp.com