



Virtual Iron® Software Release Notes

Virtual Iron® Version 4.4

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EXTENDED ENTERPRISE EDITION UPGRADE INSTRUCTIONS

If you are running an earlier version of Virtual Iron® EE or XEE, use these links 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://www.virtualiron.com/Support/Upgrade-Information/Virtual-Iron-4.4/checklist.php>

<http://www.virtualiron.com/Support/Upgrade-Information/Virtual-Iron-4.4/upgrade-from-4.3-to-4.4.php>

SUPPORTED OPERATING SYSTEMS

Virtual Iron® supports virtual servers running the following OSs and versions. **Bold** type designates new or expanded support in Release 4.4.

- RHEL 3 U8 and U9 32-bit
- RHEL 4 U4, U5, and U6 AS 32-bit and 64-bit
- RHEL 5 U1 32-bit and 64-bit
- SUSE Linux Enterprise Server 9 SP3 and SP4 32-bit and 64-bit
- SUSE Linux Enterprise Server 10 SP1 32-bit and 64-bit
- CentOS 4 U4, U5, and U6 32-bit and 64-bit
- CentOS 5 **U2** 32-bit and 64-bit
- Windows 2000 SP4 32-bit
- Windows Server 2003 SP2 32-bit and 64-bit
- Windows Server 2008 32-bit and 64-bit
- Windows XP **SP3** 32-bit
- Windows Vista 32-bit and 64-bit

NEW IN RELEASE 4.4

Release 4.4 includes the following new functionality and enhancements:

- LivePower™ dynamically stops and starts nodes based on processing demand across a VDC.
- Windows Network Load Balancing (NLB) is now supported across two NICs on a virtual server.
- You can now have multiple license files, and to add more licensed sockets, you need only purchase a new license file and copy it to the appropriate directory. The total number of socket licenses appears in Help > About.
- The Network tab now appears in the Resource Center. Formerly, it appeared in the Hardware tab.
- A new Language Keymap Setting feature is available via a right-click across an entire VDC or an individual virtual server.
- VNIC Manager in the Tools menu allows you to create as many VNICs as you need.

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- File Manager in the Tools menu allows you to move files on and off the VI-Center.
 - Auto-update of Windows VS Tools via a script available from the Windows VS.
 - Improvements for dealing with power fail and virus issues
 - Improved Storage Functionality: The following additional features are supported in this release:
 - More than one physical Ethernet connection (bonded interfaces) is now supported for the iSCSI network.
 - Support for 2 separate iSCSI networks
 - No need to reboot to see newly added iSCSI LUNs
 - Remove a disk drive from a SAN disk array without requiring attached nodes to be rebooted

NEW IN RELEASE 4.3

Release 4.3 includes the following new functionality and enhancements:

- With LiveUpgrade, you can now perform upgrades from 4.2 to 4.3 releases with no server downtime.
- Windows 2008: Support for the latest Windows server version in virtual servers.
- Experimental iSCSI MPIO: This provides experimental and partial support for iSCSI multi-path, focusing on multiple storage controllers. The following is what is supported in this release:
 - Recovery from port disconnect—For example, intermittent failure of a cable. If you pull your iSCSI cable and plug it back in, the connection will recover.
 - Target controller failover—If you have two connections to different controllers on the same iSCSI storage device, you can disconnect each in turn and the I/O traffic will failover/failback to the working controller.

The following is not yet supported:

- More than one physical Ethernet connection (bonded interfaces) is not supported for the iSCSI network. Thus, the iSCSI port on the node will not support failover and/or teaming/aggregation.
- Virtual Iron is referring to this functionality as “experimental” because iSCSI MPIO has received limited testing with a small set of iSCSI controllers. Without iSCSI bonded networks on the node, it is not a complete iSCSI MPIO solution, but it is a step forward from v4.2. This is an area we are actively working on; expect more improvements in v4.4.
- Jumbo Frame Support: 9000 bytes for gigabit Ethernet MTU support in addition to the 1500 byte MTU option. This feature improves iSCSI performance.
- You can now change a virtual server CDROM while it is running. This allows you to mount and unmount CDROMs, including network CDROMs (ISOs) without stopping virtual servers.
- Windows VS Tools upgrades no longer require an immediate reboot and now behave similar to Linux VS Tools upgrades. After the upgrade, the VS continues to run the older VS Tools version without interruption to the disk or network. The new version is activated after the next reboot. Also, user intervention is no longer required after the reboot to complete the network driver installation.

- You can now run two Live Migrations simultaneously in a virtual data center. By holding down the Shift key as you select virtual servers in a virtual data center or node Virtual Server table, you can move multiple virtual servers to and from nodes in one operation. This works for both stopped and running virtual servers.
- Menus and buttons have been modified for a more compact layout and improvements in ease-of-use. The left-side View buttons have been eliminated, the Job Progress area is smaller, and there are now selectable navigation objects in the Resource Center and Hardware views.
- LDAP templates have been added.

FIXED IN THIS RELEASE

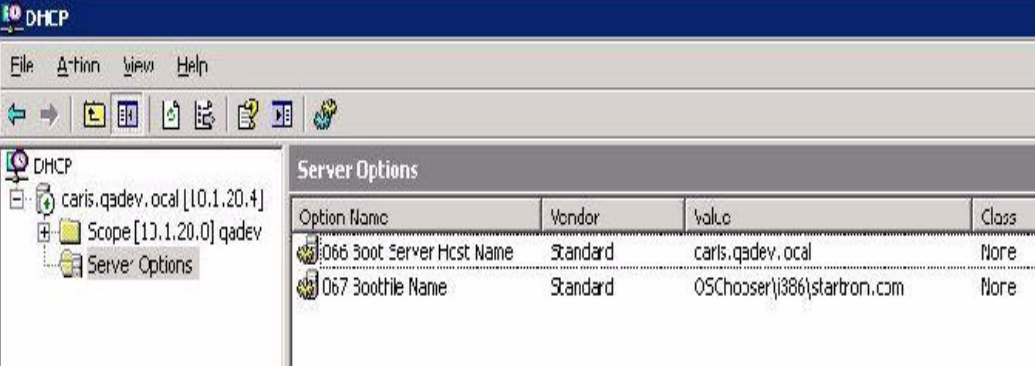
Number	Fixed in This Release
355	JBOD SAN DISKS ARE NOT RECOMMENDED AS VIRTUAL SERVER STORAGE DEVICES JBODs can be used for storage devices for Virtual Servers, but they are not recommended. If JBOD disks go off-line and then back on-line while connected to managed nodes, the node will go into an error state that requires a node reboot. Use SAN disks connected via a SAN controller.
4172	VNICs do not presently support dynamically changing the MAC address This attribute is used by Windows Network Load Balancing (NLB). Removing NLB and the secondary IP and then rebooting restores connectivity.

OPEN ISSUES IN THIS RELEASE

Following are known issues related to this release.

Reference Number	Open in This Release
172	QLOGIC HBAs NOT REPORTING PERFORMANCE INFORMATION Nodes with QLogic HBAs will not report disk performance data in the Virtual Server Performance chart.
537	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 llllssss output in the virtual console. The workaround is to disable the keyboard repeat function.
723	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.
892	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.
1122	AFTER A RED HAT INSTALL, THE VCONSOLE IS BLANK WHEN VIRTUAL SERVER BOOTS TO RUN LEVEL 5 The first time Red Hat boots after an OS installation, the virtual console may be blank when the system goes into run level 5. Workaround: Remove rhgb from the boot line in /boot/grub/menu.lst .
1189 2278 3006 5139	ADDING OR REMOVING LUNs COULD REQUIRE A NODE REBOOT When adding or removing LUNs to the system to modify storage capacity, it is sometimes necessary to reboot the nodes to accurately display the LUN configuration. If a LUN is removed or offline and the VI-Center shows it as online, errors could result if a user attempts to perform operations on that LUN, such as creating virtual hard disks. First, LiveMigrate all virtual servers off the node, then reboot the node. You can then LiveMigrate servers back onto the node.

Reference Number	Open in This Release
2028	RH3-U8 CONSOLE KEYBOARD NOT WORKING WITH KUDZU If RedHat 3 is installed while the virtual server is configured in the VI-Center 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 time-out. The system will continue to boot. Workaround: Configure the virtual server properly in the VI-Center prior to installing. If the problem does occur, correct the VI-Center 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.
2761	WIN2003 SP2 AND WINXP SP2 INSTALLS SLOWLY AND WINSP SP2 AND SP3 PERFORM SLUGGISHLY ON CERTAIN MULTI CPU MACHINES On some dual-CPU machines Microsoft incorrectly identifies the second CPU in the Device Manager causing reduced performance. Both Win2003, service pack 2 and WinXP, service pack 2 and 3 guest operating systems install slowly. When installation is complete, check the Device Manager to see if the proper CPUs are identified. If not, update your Hardware Abstraction Layer (HAL) to the latest version.
2884	VS SHUTDOWN DOES NOT WORK IF YOU ARE NOT LOGGED INTO THE CONSOLE For a Windows 2003 server, if the login popup is visible in the console window, you cannot shut down the virtual server via the management server.
2978	RED HAT 3 VIRTUAL SERVER TOOLS HAVE SEPARATE RPMs FOR INTEL AND AMD PROCESSORS VS Tools for RH3 have separate RPMs for Intel and AMD processors. The RPM you install in a virtual server must match the processor type (Intel or AMD) of the node (physical server) on which the virtual server is installed. Name these virtual servers, since they will only run on that processor type from that point forward. AMD: <code>virtualiron-2.4.21-47.ELsmp-4.1.*.athlon.rpm</code> Intel: <code>virtualiron-2.4.21-47.ELsmp-4.1.*.i686.rpm</code> Use the standard rpm -Uvh to install the proper VS Tools as described in the <i>VI-Center Administrator Guide</i>, Creating and Configuring Virtual Servers.

Reference Number	Open in This Release
3445	VIRTUAL IRON AND MICROSOFT RIS When using Windows RIS to install Windows into virtual servers, note that Windows 2000 RIS Server is unsupported; Windows 2000 does not provide RealTek NIC driver support. (Windows 2003 Server and RIS is supported.) Workaround: Configure the Windows DHCP server to use options 66 (boot server host name) and 67 (boot file name). Set DHCP option 67 to point to the location of your startrom.com. This causes the DHCP and PXE boot process to boot the RIS kernel. Refer to figure below.  For additional information, refer to: http://support.microsoft.com/kb/244036/
3494	WINDOWS 2000 MAY REPORT AN UNKNOWN PCI DEVICE When a Windows 2000 virtual server boots, you may see an unknown PCI device reported as found. This is an innocuous message, and this PCI device should be disabled. This device is the HPET timer which is not used in the VI virtual environment.
4317/ 4330	BONDED ETHERNET NICs SHOULD BE CONFIGURED TO SEPARATE SWITCHES If you configure bonded Ethernet NICs to the same switch, you can experience up to 60 seconds of connection failure when a port fails. Outgoing data traffic experiences no issues. It is recommended to configure bonded Ethernet NICs to separate switches, creating a fully-redundant topology, and no incoming connection failure window.

Reference Number	Open in This Release
4333	CLONING LOGICAL DISKS WITH SAN-BASED CONTROLLERS If you can clone your storage array and you wish to use that cloning feature, you must use raw disks. The logical disks do not support storage array-based cloning. The reason for this is because, if physical disks that contain logical disks are cloned by a SAN-based storage controller, the resultant cloned logical disks will have identical IDs to the masters. This creates naming issues within the managed node. Logical disks should only be cloned via the VI-Center. Raw physical disks that do not contain logical disks can be cloned by SAN-based storage controllers without issue.
5363	5363 - VI-CENTER CLIENT WORKAROUND FOR 64-BIT LINUX WITH FIREFOX When using Firefox on a 64-bit version of Linux, you will not be able to launch the VI-Center client. This is a known Java bug. Please start the VI-Center client on another operating system, or use the following workaround: <pre>sed -i 's/XINERAMA/FAKEEXTN/g' /usr/java/default/lib/i386/xawt/libmawt.so</pre>
5680	SOME 64-BIT GUEST OPERATING SYSTEMS MAY HANG AFTER INSTALLATION When installing RHEL5-U1, CentOS5-U1, and Oracle EL5 the system may hang after restarting. Doing a hard reset VS solves the issue.
5694	BONDING ISSUES WITH SOME ETHERNET CHIPS Bonding is not supported on Ethernet chips that do not allow changing the MAC address while the chip is in the running state. In this case, the bonded network is rejected, and the "Operation not supported" error message is returned. This occurs on 3Com and some other older 10/100 Ethernet chips. Bonding is not supported on 3Com Ethernet chips (Marvell) that do not support interface carrier states. This causes bonding to keep the state as "up" when it should be "down", therefore never switching to the backup link. Broadcom and Intel chips are recommended.

Reference Number	Open in This Release
5739	CAN NOT UPGRADE FROM SOURCE RPM TO RELEASE RPM If you have installed Linux VS tools using the SRPM package, and plan to upgrade to an official Virtual Iron VS Tools release, you need to use the following steps to upgrade: 1. Type <code>rpm -qa grep virtualiron</code> to get the name of the package that is currently installed on your system. 2. Remove the currently installed package using: <code>rpm -e virtualiron-x.x.x.x-x.x.x</code> where the x is your kernel version and Virtual Iron version. 3. Download the package associated with your kernel version and type: <code>rpm -Uvh virtualiron-x.x.x.x-4.3.x</code> where the x is your kernel version and Virtual Iron version. 4. Reboot your Virtual Server and the new tools should be active on the guest.
6089	When running the VI-Center UI on Linux client systems with java version greater than 1.6.0.3, the Tools>File Manager file menus may not operate correctly. The workaround is to use a Windows client or to run an earlier version of Java.

Reference Number	Open in This Release
6403	As of Update 7, Red Hat Enterprise Linux version 4 now incorporates builtin drivers for certain aspects of Xen virtualization. Unfortunately, these are built into all their stock kernels, and not provided as modules. These drivers conflict with the Virtual Iron accelerated drivers. Before using the Virtual Iron drivers on this version of Linux it is currently necessary to first rebuild the kernel without the Red Hat drivers. Some familiarity with the kernel build process is assumed in the following directions. To rebuild the Red Hat kernel without Red Hat Xen drivers you must have installed the development tools on the guest, and you must install the kernel RPM. The kernel source RPM is installed with: <pre>rpm -i kernel-2.6.9-78.EL.src.rpm</pre> Now the kernel build area is created and the Red Hat patches applied with the following command: <pre>rpmbuild -bp /usr/src/redhat/SPECS/kernel-2.6.spec</pre> Next the kernel is configured: <pre>cd /usr/src/redhat/build/kernel-2.6.9/linux-2.6.9 make menuconfig</pre> From the configuration menu scroll down and select: <pre>Xen PV-ON-HVM Configuration</pre> On the submenu enter "n" in the box for "XEN_PV_ON_HVM Support", then exit menuconfig. Rebuild the kernel and modules thusly: <pre>make clean make all make modules_install make install</pre> It will take some time for the "make all" to complete. After this you must boot the guest and wait for the LILO boot menu. Select the new kernel, which will show up with "-prep" in the name (alternatively you could have edited grub.conf and changed the "default" definition before rebooting). Now you can rebuild and install the Virtual Iron accelerated drivers (vstools) from its source rpm. Consult the documentation to see how this step is done.
6526	PROMPTED TO INSTALL OLDER NEXTNET DRIVER AFTER ADDING A VNIC TO A VIRTUAL SERVER On Windows , adding a VNIC to an existing virtual server prompts you to install an older NextNet driver upon reboot. When the Confirm File Replace dialog appears, click No.

Reference Number	Open in This Release
NONE	USING 64GB OR MORE PHYSICAL RAM IN A NODE If you would like to use a node that contains 64GB or more physical RAM, please call technical support for configuration information.
NONE	SAN MULTIPATH SUPPORT SAN multipath for fibre channel-based SAN has been tested on limited configurations in Virtual Iron. Please see the Virtual Iron HCL for complete multipath support information: http://www.virtualiron.com/Support/Compatibility-and-Requirements/index.php

PRODUCT DOCUMENTATION

The following documents are also available online:

- *VI-Center™ Administrator Guide* - Explains how to configure and manage virtual data centers and virtual servers.
- *VI-Center™ Getting Started Guide* - Guides you through the process of getting a virtual server up and running
- *Virtual Iron Tutorial* - Guides you through installation, and storage, boot, and memory configuration options of a virtual server.

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: www.virtualiron.com/Support/Customer-Login/index.php