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XenServer 6.2.0 Release Notes

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- Product Documentation

See Applicable Products

This document provides important information about the Citrix XenServer 6.2.0 release.

For frequently asked questions, refer to CTX137836 – XenServer 6.2.0 Technical FAQ.

Documentation may be updated or changed after the initial release. Citrix suggests regularly visiting the XenServer 6.2.0 page on the Citrix Support Website to learn about updates.

Release notes for Windows and Linux Virtual Machines (VMs) are available in the Citrix XenServer 6.2.0 Virtual Machine User's Guide.

Contents

Licensing Changes

Licensing for XenServer 6.2.0 has changed. Functionality previously available within premium versions of XenServer is now available free of charge. In order to receive Citrix support, XenServer hosts must be licensed. XenServer hosts are now licensed on a *per-socket** basis and all hosts in a pool must be licensed. For further details, please see CTX137838 – XenServer 6.2.0 Licensing FAQ.

On installation, XenServer starts in an *unlicensed* state. When it is unlicensed, there are no restrictions on its functionality or features, with the exception of the application of hotfixes using XenCenter. Following licensing, XenServer will display as *Citrix XenServer Per-Socket Edition*.

Note: Mixed pools of licensed and unlicensed hosts will behave as if all hosts were unlicensed.

*A *socket* is a physical CPU socket on the motherboard and not a core or hyperthread.

Citrix License Server

A Citrix License Server virtual appliance is available for download from the Citrix XenServer Download page. To use an existing Citrix License Server with this release it must be version 11.6.1 or later. For information on downloading and installing the Citrix License Server virtual appliance, refer to CTX12450 – Citrix License Server Virtual Appliance for XenServer. For information about obtaining license files and installing a Citrix License Server, see the Licensing Your Product section on Citrix eDocs.

System Requirements

For minimum host requirements for running XenServer, refer to the *System Requirements* chapter in [XenServer 6.2.0 Installation Guide](). For details of system maxima, refer to [CTX137837 – XenServer 6.2.0 Configuration Limits]().

New Features and Improvements Since XenServer 6.1.0

For new features since the release of XenServer 6.0.2, refer to the [CTX134582 – XenServer 6.1.0 Release Notes]().

XenServer 6.2.0 includes the following new features and ongoing improvements:

Licensing Simplification

As part of our commitment to ease of use, this release sees the introduction of XenServer 6.2.0 which replaces the previous XenServer Free, Advanced, Enterprise, and Platinum editions. Functionality previously available within premium versions of XenServer is now available free of charge. With this simplification we have also introduced per-socket licensing. Licenses no longer enable specific XenServer features, instead they signify that a XenServer is under a valid support contract. XenServer 6.2.0 no longer requires a license server or licence file to enable features, as all features are enabled for free in unlicensed mode. Licenses are only required to receive Citrix Support and to enable the use of XenCenter for the installation of security and feature hotfixes. Hotfixes can continue to be installed on unlicensed hosts using the xe command line interface.

Performance and Scale

Significant performance and scale improvements; given a server of sufficient capacity XenServer will scale to:

Metric	XenServer version 6.2.0
VMs per host	500
vCPUs per host	3250

Performance improvements include:

- Reduction in the amount of traffic between a VM and the Control Domain (Dom0).
- Automatic scaling of Dom0 memory and vCPUs based on physical memory and CPU capacity on the host.

Monitoring

The *XenServer 6.1.0 Performance and Monitoring Supplemental Pack* is now fully integrated and extended for XenServer 6.2.0. This provides detailed monitoring of performance metrics, including CPU, memory, disk, network, C-state/P-state information, and storage. Where appropriate, these metrics are available on a per host and a per VM basis. These metrics are available directly through the RRD interface, or can be accessed and viewed graphically in XenCenter or other third-party applications.

It is now possible to export the performance information directly as a Comma Separated Values (.csv) formatted stream enabling the use, or easy development, of third-party tooling.

New system alerts can be seen in XenCenter and XenDesktop Director and optionally sent by e-mail. Alerts are notifications that occur in response to selected system events, or when CPU, memory usage, network throughput, storage throughput, or VM disk activity go over a specified threshold on a managed host, VM, or storage repository. For details, refer to the *Monitoring and Managing XenServer* chapter in [CTX137828 - XenServer 6.2.0 Administrator's Guide]().

Clone on Boot

This feature supports Machine Creation Services (MCS) which is shipped as part of XenDesktop. Clone on boot allows rapid deployment of hundreds of transient desktop images from a single source, with the images being automatically destroyed and their disk space freed on exit.

New and Improved Guest Support

1. Microsoft Windows 8
2. Microsoft Windows Server 2012
3. SUSE Linux Enterprise Server (SLES) 11 SP2 (32/64-bit)
4. Red Hat Enterprise Linux (RHEL) 5.8, 5.9, 6.3, 6.4 (32/64-bit)
5. Oracle Enterprise Linux (OEL) 5.8, 5.9, 6.3, 6.4 (32/64-bit)
6. CentOS 5.8, 5.9, 6.3, 6.4 (32/64-bit)

7. Debian Wheezy (32/64-bit)
8. VSS support for Windows Server 2008R2 has been improved and reintroduced

Other Improvements

- Improvements to logging in Dom0: logs cannot over-consume Dom0 resource, increasing host stability
- Live Storage Migration is now possible from the VM Storage tab in XenCenter
- Support for additional CPUs (AMD Piledriver, Intel Haswell-DT)
- Updated in-box device drivers
- Minor Hypervisor upgrade (Xen-4.1.5)
- Updated DM Multipath (0.4.9.56)
- Support for alert severity filtering in XenCenter
- Updated XenServer alert severity levels for consistency
- The PowerShell SDK has been redesigned for improved robustness, usability, and compliance

Retired Features

Following a comprehensive review of feature completeness, quality, and usage, a small number of features have been retired from XenServer 6.2.0. Before this decision was made, Citrix evaluated the market for third-party tooling: in many cases stronger and more capable alternatives exist either as paid for or free products.

Workload Balancing

Workload balancing (WLB) keeps historic data about VM and host workloads and uses this information to plan where to start and migrate workloads to based on simple rules. In the field we found few examples of customers using WLB for automatic load balancing. Where we found WLB being used, it was used as a monitoring tool for historic metrics. With the improvements of performance monitoring in the core product, this need is better handled. In addition, the third-party tools market is well developed for WLB alternatives from vendors such as VMTurbo, Lanamark, CA Technologies, Goliath, and eG Innovations.

SCOM Integration

The XenServer plug-in for Microsoft's System Center Operations Manager (SCOM) 2007 R2 only allows monitoring of host health. The plug-in was underused partially due to complexity of setup and partially due to insufficient metrics. ComTrade offers an alternative which can monitor host health as well as virtual infrastructure and VM health.

Virtual Machine Protection & Recovery

Virtual Machine Protection and Recovery (VMPR) was the method of backing up snapshots as Virtual Appliances. Alternative backup products are available from Quadric Software, SEP, and PHD Virtual.

Note: The Snapshot capability remains in XenServer.

Web Self Service

Web Self Service was a lightweight portal which allowed individuals to operate their own virtual machines without having administrator credentials to the XenServer host. For large infrastructures, Citrix CloudPlatform is a full orchestration product with far greater capability; for a lightweight alternative, xvpsource.org offers a free open source product.

XenConvert

XenConvert allowed conversion of a single physical machine to a virtual machine. The ability to do this conversion is included in the Provisioning Services (PVS) product shipped as part of XenDesktop. Alternative products support the transition of large environments and are available from PlateSpin. The *XenServer Conversion Manager*, for converting virtual machines, remains fully supported.

Deprecated Features

Several other features will not be further developed and will be removed in a later release. These deprecated features function as in XenServer 6.1.0 and will remain supported, providing a period of overlap while third-party products or

alternative solutions are established. Features which fall into this category are:

1. Integrated StorageLink (iSL)
2. Distributed Virtual Switch (vSwitch) Controller (DVSC). The Open vSwitch remains fully supported and developed

XenServer Virtual Appliances

The following XenServer Virtual Appliances are available for download from the XenServer Download page

- Demo Linux Virtual Appliance
- Distributed Virtual Switch (vSwitch) Controller Virtual Appliance
- Citrix License Server VPX v11.10
- Citrix XenServer Conversion Manager

Installation and Upgrades

Upgrade to XenServer 6.2.0 is possible from any version of XenServer 6.0 or 5.6. For details on installing and upgrading XenServer, refer to the CTX137829 – Citrix XenServer 6.2.0 Installation Guide. Before upgrading XenServer hosts, customers should ensure that they are not affected by any of the issues listed below.

Advisories and Known Issues

This section details advisories and minor issues with this release and any workarounds that can be applied. For the XenServer Conversion Manager, see CTX134685 – XenServer Conversion Manager Release Notes.

General

- Red Hat Enterprise Linux (RHEL), Oracle Enterprise Linux (OEL), and CentOS 5.0 64-bit guest operating systems with their original kernels will fail to boot on XenServer 6.2.0. Before attempting to upgrade a XenServer host to version 6.2.0, customers should update the kernel to version 5.4 (2.6.18-164.el5xen) or later. Customers running these guests who have already upgraded their host to XenServer 6.2.0, should refer to CTX134845 for information on upgrading the kernel. [CA-79505]
- RHEL 4.5 guests may crash when using the Rolling Pool Upgrade Wizard. Before upgrading a XenServer host, you must shut down RHEL 4.5 guests. Once the host is upgraded, you must update the guest kernels to use the one supplied on the XenServer 6.2.0 XenServer Tools ISO. [CA-88618]
- If the Rolling Pool Upgrade Wizard discovers storage that is detached and cannot be reattached, it will fail (even when no VMs are using the storage). Customers should either fix the access to the storage repository or remove it from the XenServer pool before restarting the wizard. [CA-72541]
- The XenCenter Rolling Pool Upgrade wizard should **not** be used with Boot from SAN environments. For more information on upgrading boot from SAN environments, see Appendix B of the XenServer 6.2.0 Installation Guide .
- If a Rolling Pool Upgrade fails when upgrading a pool of XenServer hosts, customers should avoid migrating VMs with shared storage from an upgraded host to a non-upgraded host. Performing such migrations can cause the VMs to hang or crash. [CA-108234]
- When installing XenServer from a network repository (including when using the XenCenter Rolling Pool Upgrade wizard), you must configure the DHCP server to provide the `domain-name` option, otherwise DNS will not work correctly, which can lead to a failed installation. [CA-74082]
- Shared storage should not be specified as either the `primary-disk` or the `guest-disk` during automated host installation when an answerfile is used. Storage specified during installation for both the `primary-disk` and the `guest-disk` will be wiped. [CA-41786]
- Display and navigation can be slow when using the xsconsole with a large number of VMs (>100) when viewing the "VMs Running on This Host" page. Customers are advised to use XenCenter or the xe CLI when working with large numbers of VMs. [CA-105774]
- Performing 'revert to snapshot' and selecting 'Snapshot the VM's current state and then revert' may result in a VM without any attached disks. This can occur when there is insufficient space on the SR. Attempting to revert again will result in the VM having its disks reattached and the revert being successful. [CA-105778]
- XenServer requires some space on attached SRs to store VM state files. If the SR is out of disk space, VMs will be unable to start, and the XenServer Control Domain may become unresponsive. Customers are advised to monitor the available disk space on their SRs and free up space should this occur. [CA-99248]
- Enabling BIOS level "HPC mode" (High Performance Computing) on AMD platforms can cause host instability. HPC mode causes the Xen Hypervisor to make incorrect power state transitions, leading to host stability issues. [CA-102131]
- When running more than 350 VMs per XenServer host, the steps in CTX134951 should be followed to reconfigure Dom0 memory settings. As a general rule, roughly 1GB of memory should be allocated to Dom0 for every 90 VMs running. By default, Dom0 will automatically have up to 4GB of memory (depending on the amount of host

memory). [CA-48485]

- In the *XenServer 6.1.0 Performance and Monitoring Supplemental Pack*, performance metrics were enabled by default; in XenServer 6.2.0 new metrics and those delivered by the 6.1.0 pack are available in the core product, but are disabled by default due to performance reasons related to XenCenter. For users wishing to retain the legacy behaviour of the 6.1.0 supplemental pack or using third party monitoring products that utilise those metrics, a utility function has been provided.
  To enable all previously available and new metrics, please enter the following command:
  ```
  xe-enable-all-plugin-metrics true
  ```

  And to disable those metrics:
  ```
  xe-enable-all-plugin-metrics false
  ```

  These commands restart the xapi toolstack, and XenCenter users will be temporarily disconnected. [CA-108508]

Internationalization

- Non-ASCII characters, such as characters with accents, cannot be used in the host console. [CA-40845]
- The root password of the host installer must not contain non-ASCII characters. [CA-47461]

Hardware Compatibility

Note: Customers should refer to the XenServer Hardware Compatibility List (HCL) for the most recent additions and advice for all hardware compatibility questions.

- Intel Errata for Nehalem and Westmere CPU implementations of C-states may lead to system instability, apparently random freezes or reboots — including during installation. Customers with Nehalem and Westmere CPUs are advised to disable C-states in the system BIOS as detailed in CTX127395. [CA-60628]
- Brocade's BFA Fibre Channel over Ethernet (FCoE) driver version 3.1.0, as shipped with XenServer 6.2.0, requires FCoE Initialization Protocol (FIP) login. Customers should ensure that the FCoE switch is correctly configured to accept such logins, otherwise access to the storage may be lost. This issue occurs when upgrading XenServer hosts from version 6.0.2 and earlier to version 6.2.0. [CA-88468]
- When using AMD 8132 HT chipsets, hosts can become unresponsive, this is due to AMD errata: http://support.amd.com/us/ChipsetMotherboard_TechDocs/30801.pdf. Customers using this chipset should set the following Xen command line option: `ioapic_ack_mode="old"`. [CA-103933]

Networking

- After upgrading XenServer hosts from version 6.0.2 and earlier to version 6.2.0, customers using Single Root I/O Virtualization (SR-IOV) with Intel NICs will be unable to start VMs. Customers should follow the procedure in CTX134054. [CA-89008].
- DHCP lease renewal fails if the DHCP client and DHCP server are both Linux VMs on the same host. This does not affect Windows VMs. If you wish to use dhcp3-server and dhcp3-client in Linux VMs which may be sharing the same host, you must disable checksum offload by issuing the command `ethtool -K eth0 tx off` within the DHCP server VM. [CA-40908]
- When using the vSwitch Controller with Microsoft Internet Explorer (IE) version 7 or 8 to access the vSwitch Controller remotely, you may find that these versions of IE leak system resources. Citrix recommends using either Mozilla Firefox or IE 9, which addresses some of the known IE memory and resource leak issues. [CA-65261]
- The vSwitch Controller may fail to show dependant (slave) networks that had been bonded when NIC bonds are deleted. To resolve this issue, refresh the status of the pool or restart the vSwitch Controller. The networks should then reappear. [CA-65261]
- Networking performance metrics may be misleading when network traffic exceeds 6.4Gb/s. [CA-106135]

Storage

- When migrating VMs using Storage XenMotion, attempts to cancel the operation may not delete the temporary virtual disks. [CA-87710] [CA-87689]
- When a VM is unexpectedly shut down during a Storage XenMotion migration, the migration may fail. This process may leave a incomplete copy of the VM, in a shut down state, on the destination pool. Customers should delete the VM from the destination pool and retry the operation with a running VM. [CA-86347]
- Attempts to revert to a snapshot can fail if the Storage Repository (SR) has too little space to inflate the snapshot. This is caused by a race condition and can be resolved by re-attempting the revert after a few minutes. [CA-63032]
- Writing to CIFS ISO storage repositories is not supported and can result in disk corruption. [CA-41058]
- Customers using Dell EqualLogic arrays with Integrated Storage Link (iSL) should use at a minimum firmware from the v5.x branch. This firmware has been verified and tested for use with iSL. Refer to the XenServer

[Hardware Compatibility List (HCL)](#) for the recommended firmware version. [CA-77976]

- Customers using Dell EqualLogic arrays with iSL, who perform certain manual VDI delete operations with snapshots, may encounter `VDI not available` errors when attempting to start a VM which uses array resources. Citrix recommends that customers who use Dell EqualLogic arrays, should *only* perform VM Snapshot and Revert operations using the iSL functionality (rather than any manual process). [CA-78670]
- iSCSI paths that are not available when a XenServer host is booted, do not get established automatically later. This can be resolved by either performing another host reboot or by detaching and re-attaching the SR. [CA-73867]
- After NFS storage failure, attempts to rescan the storage before it is available will result in a long delay, and XenCenter will display a `General IO Error` message. Customers are advised to check that storage arrays are active *before* attempting to recover with the 'rescan' button. [CA-107099]
- When adding HBA SRs to a pool of XenServer hosts, *before* running the New SR wizard, customers should ensure that each LUN is mapped to *all* hosts in the pool. [CA-113613]

XenCenter

- Modifying the font size or DPI on the computer on which XenCenter is running can result in the user interface displaying incorrectly. The default font size is 96 DPI; Windows Vista refers to this as "Default Scale" and Windows 7 as "100%". [CA-45514]
- For XenServer 6.1.0 and earlier versions, the XenCenter License Manager may incorrectly report the license type as âFree Editionâ for paid-for editions (i.e., Advanced, Enterprise, or Platinum). Customers can safely ignore this incorrect status reporting as it does not cause any loss of functionality. [CA-109483]
- System Alerts generated for XenServer 6.1.0 hosts display numerical alert severities. Customers should ignore these numerical severities as they are invalid for XenServer 6.1.0 hosts. [CA-109526]

Guests

- If a VM's Virtual Block Device (VBD or virtual disk) is unplugged and the VM is then rebooted, the VBD will remain unplugged after reboot. [CA-76612]
- Upgrading the XenServer Tools on a Windows VM that is actively using Dynamic Memory Control (DMC) may cause the VM to crash. To avoid this, during the XenServer Tools upgrade, set the dynamic minimum and maximum values to the static maximum. [CA-90447]
- A VM snapshot cannot be resumed if it was created while a previous version of the XenServer Tools ISO was mounted in the VM. To restart from one of these snapshots, customers should "Force Shutdown" the suspended VM, eject the ISO and start the VM. [CA-59289]
- Customers should not attempt to use the Xen API SDK VM template. As an alternative sandbox testing environment, you can install XenServer as a generic VM using the **Other install media** template. Note: the guest's IP address will not be reported through either the xe CLI or XenCenter. [CA-89266]
- After using XenMotion (Live Migration) to move a Windows VM, the memory usage reported for the VM may be incorrect. [CA-89580]
- Verification of manifests and digital signatures on OVF and OVA packages will fail on import if the filename contains parentheses. The import will still succeed if verification is skipped. For the same reason, if you are exporting VMs as an OVF/OVA package and are including a manifest or a digital signature, Citrix recommends specifying a package name that does not contain parentheses. [CA-89555] [CA-90365]
- Attempts to detach a Virtual Disk Image (VDI) from a running a RHEL, CentOS, or OEL 6.1 and 6.2 (32-/64-bit) VM, may be unsuccessful and can result in a guest kernel crash with a `NULL pointer dereference at <xyz>` error message. Customers should update the kernel to version 6.3 (2.6.32-238.el6) or later to resolve this issue. For more information, see Red Hat Bugzilla [773219](#). [CA-73512]
- If you wish to create an Ubuntu 10.04 VM (32-bit) with more than 512MB of memory, you must upgrade to the latest version of the kernel **before** increasing the RAM. For more information, see Ubuntu Launchpad [803811](#) and [790747](#). [CA-61400]
- Ubuntu 10.04 (64-bit) running the 2.6.32-32 #72 kernel, may crash with the following message, `kernel BUG at /build/build/linux-2.6.32/arch/x86/xen/spinlock.c:343!`. The problem only affects VMs with multiple vCPUs. vCPU hot-plugging (only available via the xe CLI/API) should not be attempted with this guest. [CA-57168]
- Customers running RHEL or CentOS 5.3 or 5.4 (32/64-bit) should not use Dynamic Memory Control (DMC) as this may cause the guest to crash. If you wish to use DMC, Citrix recommends that customers upgrade to more recent versions of RHEL or CentOS. [EXT-54]
- The RHEL 6.0 kernel has a bug which affects disk I/O on multiple virtualization platforms. This issue causes VMs running RHEL 6.0 to lose interrupts. For more information, see Red Hat Bugzilla [681439](#), [603938](#) and [652262](#). [CA-60495]
- RHEL, OEL, and CentOS 6.3 kernels are not supported on Intel Ivy Bridge systems. For more information, see Red Hat Bugzilla [852934](#).
- Creating a SLES 11 SP2 (32-bit) VM can cause the SLES installer or the VM to crash due to a bug in the SLES 11 SP2 kernel. To workaround this issue, customers should allocate at least 1 GB memory to the VM. Note that the amount of assigned memory can be reduced after installing updates to the VM. For more information, see Novell

Bugzilla [809166](#). [CP-4822]

- After removal of the XenServer Tools (PV Drivers), XenCenter may erroneously display old performance data. Customers are strongly advised to install the latest XenServer Tools. [CA-106466]
- Customers should not attempt to perform snapshot operations (create or delete) on a VM which is actively undergoing Storage XenMotion between hosts. Doing so may result in the Storage XenMotion failing with a checksum mismatch error message. [CA-102832, CA-102835]
- VMs using Clone on Boot should not be migrated using Storage XenMotion. If they are migrated, on-boot behaviour flags are lost. This will cause the data on VDIs marked with `on-boot=reset` to persist after the Storage XenMotion is complete.[CA-98077]
- vCPU pinning information is not respected when VMs are migrated. [CA-96952]
- After an upgrade to XenServer 6.2.0, details on the date and time VMs were started at may be lost. There is no workaround for this. However, the operation of the VM will be unaffected. [CA-97869]
- After installing the XenServer Tools, customers should reboot their hosts when prompted by the Citrix XenServer Tools installer. After the XenServer Tools installer has closed, all paravirtualised drivers and the XenServer Tools are installed and a further reboot is not required. Customers can safely ignore any pop-up window requesting a further reboot. [CA-107094]
- Windows 8 VMs created with the experimental support on XenServer 6.1.0 will not take advantage of Microsoft's VM Generation ID, after an upgrade to XenServer 6.2.0. Customers are advised to re-create any Windows 8 VMs on XenServer 6.2.0.[CA-105974]
- Customers upgrading from XenServer 5.6x who have not upgraded the XenServer Tools in their Windows VMs, will not be able to use quiesced snapshots. Customers should upgrade their XenServer Tools after host upgrade, to restore this functionality. [CA-108370]
- Storage XenMotion is only possible on live VMs with XenServer Tools installed. In the event that a VM crashes during Storage XenMotion, the Storage XenMotion operation will abort. [CA-85053]
- Customers will not be able to override the emulation of a serial port for HVM guests by using the `other-config:hvm_serial` parameter. To workaround this issue, customers should use the `platform:hvm_serial` parameter. [CA-109295]
- A Windows VM may display the 'Found New Hardware' dialog box on the Console tab of the VM. This is due to a virtual device which is exposed to all guests, but only required for Windows 8 and Windows Server 2012. Customers can turn off the dialog box by disabling the Unknown Device using Device Manager. [CA-104674]

Documentation

- XenServer product documentation may refer to *StorageLink* and *Integrated StorageLink (iSL)* interchangeably. Whenever references are made to *StorageLink* in XenServer 6.0 documentation and later, this refers to the Integrated StorageLink functionality and **not** to the deprecated Citrix product *StorageLink Gateway*.

Documentation and Support

Finding Documentation

For the most up-to-date product documentation for every Citrix product, visit the [Citrix Knowledge Center](#). Additional information is also available from [Citrix eDocs](#).

For licensing documentation, go to the [Licensing Your Product](#) section on [Citrix eDocs](#).

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Citrix offers online technical support services on its [support.citrix.com](#) website. This site includes links to downloads, the Citrix Knowledge Center, Citrix Consulting Services, and other useful resources.

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