

Oracle® VM VirtualBox

Release Notes for Release 6.0

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Preface

The *Oracle VM VirtualBox Release Notes* provide a summary of new features and changes in this release of Oracle VM VirtualBox.

Audience

This document is intended for both new and existing users of Oracle VM VirtualBox. It is assumed that readers are familiar with Web technologies and have a general understanding of Windows and UNIX platforms.

Related Documents

The documentation for this product is available at:

<https://docs.oracle.com/en/virtualization/virtualbox/index.html>

Conventions

The following text conventions are used in this document:

- **boldface**: Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
- *italic*: Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
- **monospace**: Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

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Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit

<https://www.oracle.com/corporate/accessibility/learning-support.html#support-tab>.

Chapter 1 New Features for Release 6.0

This section describes the new features in release 6.0 of Oracle VM VirtualBox.

For a more detailed list of changes, see [Chapter 3, Change Log](#).

1.1. Oracle Cloud Infrastructure Support Added for Export Appliance

The Export Appliance feature now supports export to Oracle Cloud Infrastructure. This feature uses an API signing key to authorize web service requests to Oracle Cloud Infrastructure. See [Exporting an Appliance to Oracle Cloud Infrastructure](#).

A new tool, called the **Cloud Profile Manager**, enables you to configure details of your cloud service account with Oracle VM VirtualBox.

The `VBoxManage export` command has been enhanced to support export to Oracle Cloud Infrastructure and configuration of cloud service settings. See [VBoxManage export](#).

1.2. Support for Nested Virtualization

This release adds support for *nested virtualization*. This feature is only available on host systems that use an AMD CPU.

Nested virtualization enables you to install a hypervisor, such as Oracle VM VirtualBox, Oracle VM Server or KVM, on an Oracle VM VirtualBox guest. You can then create and run virtual machines (VMs) in the guest VM.

Configure nested virtualization by using the VirtualBox Manager or the `--nested-hw-virt` option of the `VBoxManage modifyvm` command. See [Nested Virtualization](#).

1.3. Improved Integration with Microsoft Hyper-V

Oracle VM VirtualBox can now be used on a Windows host where Hyper-V is running. This is an experimental feature.

No configuration is required. Oracle VM VirtualBox detects Hyper-V automatically and uses Hyper-V as the virtualization engine for the host. The CPU icon in the VM window status bar indicates that Hyper-V is being used. See [Using Hyper-V with Oracle VM VirtualBox](#).



Note

When using this feature, you might experience significant Oracle VM VirtualBox performance degradation on some host systems.

1.4. Moving a VM or a Disk Image to a New Location

Previous releases supported moving a disk image to a different location. With this release, you can also move a VM to a different location. This functionality includes the following improvements:

- **Moving a VM.** You can now use the VirtualBox Manager to move a VM.

Right-click on the VM in the VirtualBox Manager's machine list and select **Move**.

Alternatively, use the `VBoxManage movevm` command which is introduced in this release.

- **Moving a Disk Image.** This feature is now supported in the Virtual Media Manager.

If you use a file management feature of the host OS to move a disk image to a new location, Oracle VM VirtualBox automatically updates the configuration. Use the `--setlocation` option of the `VBoxManage modifymedium` command to configure the new path of the disk image on the host file system.

See [Removing and Moving Virtual Machines](#) for more details.

1.5. Improved Export and Import of Appliances in OVF/OVA Format

The export and import of appliances in OVF and OVA format have been improved, as follows:

- **Exporting:** You can select additional options that affect the size and content of the file archive. For example, you can include ISO image files in the exported archive file.

Options enable you to include and exclude network card MAC addresses on export.

- **Importing:** You can select additional options for the imported appliance. For example, specify the base directory to use for storing VMs and the MAC address policy on import.

A new option enables the import of hard disk images in VDI format, rather than the default VMDK format.

By default, VM groups are preserved on import. You can use a new option to override this default behavior.

See [Importing and Exporting Virtual Machines](#) for more details.

1.6. Changes for Cloning VMs

A new option enables you to retain the hardware UUID when cloning a VM. This helps you to avoid issues when using applications that require the hardware UUID.

New options enable you to select the MAC address policy and to retain disk image names when cloning a VM.

See [Cloning Virtual Machines](#) for more details.

1.7. Creating a Floppy Disk Image

You can create floppy disk images when adding a floppy disk to a floppy disk controller. During the creation of the disk image, you can format the floppy disk automatically.

1.8. User Interface Changes

The following list shows the primary improvements to the user interface in this release:

- Usability and accessibility improvements, as follows:
 - New icons give a fresh look to the product.
 - Some screens have been redesigned to provide easy access to VM settings and global preferences.
 - The number of popup dialogs has been reduced.
 - Support for HiDPI host devices has been improved.

- Improved support for screen readers.
- The Guest Control File Manager enables easy transfer of files between the guest and host. See [Section 1.9, “Guest Control File Manager”](#).
- The **Video Capture** tab has been renamed to be the **Recording** tab.

Use the **Recording** tab to enable audio recording, video recording, or both.

- The **Screen** tab has been updated as follows:

- Scale factors for multiple monitor displays can be configured.

A global preferences setting enables you to configure a default scale factor for all VMs.

- You can specify the following graphics controllers for a guest VM. Note that you must install the Guest Additions on the guest VM to specify the VBoxSVGA or VMSVGA graphics controller.

- **VBoxSVGA:** The default graphics controller for new VMs that use Linux or Windows 7 or later.

This graphics controller improves performance and 3D support when compared to the legacy VBoxVGA option.

- **VBoxVGA:** Use this graphics controller for legacy guest operating systems.

This is the default graphics controller for Windows versions before Windows 7.

- **VMSVGA:** Use this graphics controller to emulate a VMware SVGA graphics device.

- The **Input, Keyboard** menu on a guest VM now includes an option to enter the host key combination.
- The **Add** button in the Virtual Media Manager enables you to add a disk image to the known media registry used by Oracle VM VirtualBox.
- The Log Viewer has improved searching and filtering capabilities. A new feature enables you to bookmark individual lines or blocks of text.
- The **Devices** menu in a guest VM now includes an option to create a virtual ISO (VISO).

1.9. Guest Control File Manager

The Guest Control File Manager enables a guest VM user to transfer files between the guest and host. This feature requires the Guest Additions to be installed on the guest VM.

The Guest Control File Manager works by mounting the host file system. The guest user must enter authentication credentials in order to access files on the host system.

To open the Guest Control File Manager, select the **Machine, File Manager** menu option in the guest VM.

See [Guest Control File Manager](#) for more details.

1.10. Improved 3D Graphics Support

Improves the performance for displaying 3D graphics and adds support for emulating VMware SVGA graphics devices.

1.11. FUSE Mounting of Virtual Disk Images

`vboximg-mount` is a new command line utility for Mac OS X hosts that provides raw access to an Oracle VM VirtualBox virtual disk image on the host. Use this utility to mount, view, and optionally modify the disk image contents. See [vboximg-mount: A Utility for FUSE Mounting a Virtual Disk Image](#).

1.12. VBoxManage Command Changes

The following lists the primary changes to the `VBoxManage` command:

- The new `VBoxManage movevm` command enables you to move a VM to a new location on the host.
- You can use the new `VBoxManage mediumio` command for file copy operations from a disk image.
- The `VBoxManage export` command enables you to export to a cloud provider service, such as Oracle Cloud Infrastructure.
- The `VBoxManage modify --nested-hw-virt` command configures nested virtualization for a VM.
- Use the `VBoxManage modifymedium --setlocation` command to reconfigure the location of a disk image on the host file system. For example, you might use this command when you used a file management feature of the host OS to move a disk image.
- The `VBoxManage setproperty` command adds the `proxymode` and `proxyurl` properties. These properties enable you to configure an HTTP proxy server for Oracle VM VirtualBox.
- Use the `VBoxManage dhcpserver add --options` command or the `VBoxManage dhcpserver modify --options` command to configure DHCP options for an Oracle VM VirtualBox DHCP server.

Chapter 2 Accessibility Features of Oracle VM VirtualBox

This chapter describes the Oracle VM VirtualBox accessibility features:

Documentation is provided in HTML and PDF formats. The HTML format is accessible, but the PDF format is not accessible.

2.1. Keyboard Shortcuts

You can use keyboard shortcuts to perform tasks that are specific to Oracle VM VirtualBox. Configure the keyboard shortcuts by using the **Preferences**, **Input** dialog.

2.2. Display Modes and Settings

The Oracle VM VirtualBox product offers the following display modes and settings for VMs:

- **Global display settings for all VMs:** Use the **Preferences**, **Display** dialog.
- **Display modes and settings for individual VMs:** Use the **View** menu of the VM.

2.3. Documentation HTML Access Keys

To use the documentation without using a mouse, you can use HTML access keys. Enter the HTML access key for your browser, plus the access key letter. For example, using Mozilla Firefox, press Alt+Shift +n to go to the next page. See your web browser documentation to find the key combination to use for HTML access keys. The following table lists the tasks you can perform using access keys.

Task	Access Key
Go to the next page	n
Go to the previous page	p
Go to the document home page	h
Go up a level in the document	u
Activate the Contents tab	c
Activate the Search tab	s

In addition to the HTML access keys, the following keyboard shortcuts are available:

Task	Shortcut Key
Toggle hide and show the sidebar	Ctrl+Left Arrow
Toggle hide and show page header	Ctrl+Up Arrow

2.4. Documentation Accessibility Bugs

The following are the known accessibility issues with the Oracle VM VirtualBox Release 6.0 documentation.

- HTML page heading levels might not start at h1 (Bug ID 26717728)

- Book title can extend off the screen with 200% zoom (Bug ID 26717874)
- Some JavaScript text items are not translated (Bug ID 26717963)
- docs.oracle.com Help drawer HTML heading tags have structure violation (Bug ID 26560104)

Chapter 3 Change Log

This section summarizes the changes between Oracle VM VirtualBox versions. Note that this change log is not exhaustive and not all changes are listed.

Oracle VM VirtualBox version numbers consist of three numbers separated by dots where the first and second number represent the major version and the third number the minor version. Minor version numbers of official releases are always even. An odd minor version number represents an internal development or test build. In addition, each build contains a revision number.

3.1. Version 6.0.4 (2019-01-28)

This is a maintenance release. The following items were fixed and/or added:

- Virtualization core: support Shanghai/Zhaoxin CPUs.
- User interface: handle command line arguments to VirtualBox correctly (bugs #18206 and #18197)
- User interface: improvements to machine manager window, virtual optical disk creator, storage selector window and log viewer window
- User interface: various small fixes and improvements
- Audio: implemented time scheduling for the AC'97 device emulation to keep audio and video in sync
- Graphics: basic support for VMSVGA graphics device in virtual machines using EFI
- Network: fix occasional NATNet crashes (bug #13899)
- Network: worked around problems in certain PCnet drivers on old operating systems
- Serial: fixed connecting to pseudo terminals on POSIX hosts (6.0.0 regression; bug #18319)
- Linux hosts and guests: fix for building kernel modules against Linux 5.0. Thank you Kyle Laker

3.2. Version 6.0.2 (2019-01-15)

This is a maintenance release. The following items were fixed and/or added:

- User interface: fixed creation of desktop shortcuts for starting virtual machines (bug #18207)
- User interface: allow the first run window to selecting host drives (bug #18230)
- User interface: fixed attaching empty host optical drives (bug #18223)
- User interface: implemented a new virtual optical disk creation window
- USB: modified Linux backends to reset USB devices (previously, most guest attempts to reset USB devices were ignored)
- PCnet: fixed a regression which caused some PCnet PCI guest drivers to not detect the emulated hardware (bug #18286)
- Linux hosts: fixed conflict between Debian and Oracle build desktop files (bug #18264)
- Linux and MacOS hosts: VirtualBoxVM command not accessible (bug #18257)

- Windows guests: multiple monitor fixes with VBoxSVGA graphics
- Windows guests: black screen with VBoxSVGA graphics when 3D is disabled (bug #18205)
- Linux guests: fixed building drivers on SLES 12.4 (bug #18213)
- Linux guests: fixed building shared folder driver with older kernels (bug #18238)
- OS/2 shared folders: fixed write regression introduced in 6.0.0 GA

3.3. Version 6.0.0 (2018-12-18)

This is a major update. The following major new features were added:

- Implemented support for exporting a virtual machine to Oracle Cloud Infrastructure
- User interface: greatly improved HiDPI and scaling support, including better detection and per-machine configuration
- Major rework of user interface with simpler and more powerful application and virtual machine set-up
- User interface: a new file manager enabling user to control the guest file system and copy files between host and guest.
- Graphics: major update of 3D graphics support for Windows guests, and VMSVGA 3D graphics device emulation on Linux and Solaris guests
- Added support for surround speaker setups (as used by Windows 10 Build 1809)
- Added utility `vboximg-mount` on Apple hosts to access the content of guest disks on the host
- Added support for using Hyper-V as the fallback execution core on Windows host, to avoid inability to run VMs at the price of reduced performance

In addition, the following items were fixed and/or added:

- Execution core: fixed single-stepping in certain circumstances (bug #17316)
- User interface: video and audio recording can now be separately enabled
- Audio/Video recording fixes and improvements
- Audio: better support for attaching and detaching remote desktop connections
- Serial port emulation fixes
- Serial ports: allow changing the serial port attachment while a machine is running (bug #6115)
- Networking: Added a workaround for older guests which do not enable bus mastering for the virtio PCI device
- Networking: fixed wrong RCODE from DNS AAAA query with --natdnshostresolver1 (bug #18171)
- iSCSI: In cases where there is no ambiguity, the LUN of an iSCSI target is automatically determined, for targets with non-zero LUNs
- Transparently resize disk images when merging if possible
- VBoxManage: support for DHCP options

- Fixed VNC/RDP (bug #18153)
- Guest Control: various new interfaces and features (see SDK documentation)
- Linux hosts: support Linux 4.20 (thank you Larry Finger)
- Solaris: installer fixes
- Shared folders: performance improvements
- Guest Additions: improved shared folder auto-mounting
- Windows Guest Additions: fix incorrect tablet co-ordinate handling with recent Windows 10 builds
- Linux Additions: fix for building vboxvideo on EL 7.6 standard kernel, contributed by Robert Conde (bug #18093)
- Linux guests: support Linux 4.20 (thank you Larry Finger)
- Linux guests: support VMSVGA in the Linux and X11 Additions
- MacOS Guest Additions: initial support
- OS/2 Guest Additions: initial shared folder support
- BIOS fixes
- ACPI: Up to four custom ACPI tables can now be configured for a VM

3.4. Change Logs for Legacy Versions

To view the change log for a legacy version of VirtualBox see the documentation for the relevant Oracle VM VirtualBox release.

Change logs are also available at:

<https://www.virtualbox.org/wiki/Changelog>.

