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Oracle Virtual Desktop Client software is an included component of Oracle's Sun Ray Software and Oracle Virtual Desktop Infrastructure software products that must be separately downloaded from Oracle Software Delivery Cloud (https://edelivery.oracle.com). Use of Oracle Virtual Desktop Client is subject to the Oracle software license agreement provided with and/or applying to Sun Ray Software and Oracle Virtual Desktop Infrastructure.
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Preface

This document is part of the documentation library for Oracle Virtual Desktop Infrastructure (VDI) release 3.5, which is available at:


The documentation library consists of the following items:

**Oracle Virtual Desktop Infrastructure Release Notes**
The release notes provide a summary of the new features, changes, fixed bugs and known issues in Oracle VDI.

**Oracle Virtual Desktop Infrastructure Getting Started Guide**
The getting start guide describes how to get started with Oracle VDI and is intended for administrators who are new to the product.

**Oracle Virtual Desktop Infrastructure Administrator’s Guide**
The administrator’s guide is a comprehensive guide to how to install, configure, and administer Oracle VDI. Troubleshooting information is also included.

**Enterprise Manager Plug-in User’s Guide for Oracle Virtual Desktop Infrastructure**
The plug-in user’s guide is intended for administrators who are familiar with Oracle VDI and require access to the comprehensive monitoring capabilities of Oracle Enterprise Manager.

**Oracle Virtual Desktop Infrastructure Security Guide**
The security guide is a supplemental guide to the security aspects of Oracle VDI. It addresses the security concerns of Oracle VDI system administrators.

**Audience**
The Oracle VDI documentation is written for system administrators who want to install and configure Oracle VDI in order to deploy desktops to users. It is assumed that readers are familiar with web and virtualization technologies and have a general understanding of operating systems such as UNIX (including Linux) and Windows.

**Documentation for Additional Supporting Software**
The documentation for additional supporting software used with Oracle VDI is available as follows:

- Sun Ray Software and Sun Ray Clients, including Oracle Virtual Desktop Client
  http://www.oracle.com/technetwork/server-storage/sunrayproducts/docs/index.html
- Oracle VM VirtualBox
- Oracle Secure Global Desktop
  http://www.oracle.com/technetwork/server-storage/securedesktop/docs/index.html

**Conventions**
The following text conventions are used in this document:
<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><strong>monospace</strong></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>

Document Revision

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Chapter 1 New Features and Changes

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This chapter provides information about new features and changes in each Oracle VDI release.

1.1 Release 3.5.2

This section provides information about the Oracle VDI 3.5.2 release.

About the Oracle VDI Release 3.5.2 Software

The Oracle VDI 3.5.2 software package includes the following components:

• Oracle VDI release 3.5.2
• Sun Ray Software release 5.4.4
• MySQL Server release 5.1.68
• Oracle VM VirtualBox release 4.2.30

For details of the changes and bug fixes in Sun Ray Software 5.4.4, see the Sun Ray Software Release

 Updating to Oracle VDI Release 3.5.2

Updates to Oracle VDI release 3.5.2 are supported only from the following releases of Oracle VDI:

• 3.5.1
• 3.5
• 3.4.1
• 3.4

Before you update from Oracle VDI release 3.4 or 3.4.1, you must first upgrade the Sun Ray Server
component to version 5.3.2. To upgrade the Sun Ray Server component, follow the instructions in the
Sun Ray Software 5.3 Administration Guide at http://docs.oracle.com/cd/E25749_01/E25745/html/
Upgrading.html.

To update to Oracle VDI release 3.5.2, see Updating an Oracle VDI Center in the Oracle VDI 3.5
Administration Guide.
To update from any other release of Oracle VDI, contact Oracle Support.

Supported Installation Platforms

For the latest information about supported installation platforms, see knowledge document ID 1632400.1 on My Oracle Support.

Bugs Fixed in Release 3.5.2

The following table lists bugs that have been fixed in Oracle VDI release 3.5.2.

Table 1.1 Bugs Fixed in Oracle VDI Release 3.5.2

<table>
<thead>
<tr>
<th>Bug ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>17052732</td>
<td>unresponsive flexible desktop is recycled/deleted in few minutes time</td>
</tr>
<tr>
<td>18734435</td>
<td>vdi solaris pool unavailable when template fails to sync to storage</td>
</tr>
<tr>
<td>19445558</td>
<td>active/active storage failover is causing unresponsive storage</td>
</tr>
<tr>
<td>19839583</td>
<td>vda ssh implementation, session management and copy backup is insecure</td>
</tr>
<tr>
<td>19839820</td>
<td>vda powerstate queries from provider are not robust in the face of network outage</td>
</tr>
<tr>
<td>19841862</td>
<td>vda references null objects when storage/volume goes asynchronously offline</td>
</tr>
<tr>
<td>19846689</td>
<td>vda vbox 4.2 machine does not release busy lock</td>
</tr>
<tr>
<td>19846783</td>
<td>vda timing adjustments: sysprep and other timeout limits may be too restrictive</td>
</tr>
<tr>
<td>19989696</td>
<td>disable sslv3 on vdi services command stream connector</td>
</tr>
<tr>
<td>19999279</td>
<td>vdi support bundle fails with Japanese pool names</td>
</tr>
<tr>
<td>20283098</td>
<td>vdi erroneously starts the same vbox vm on two different vbox hosts</td>
</tr>
<tr>
<td>20412642</td>
<td>initiators and initiator groups on zfssa not deleted correctly</td>
</tr>
<tr>
<td>20549881</td>
<td>vdi reports storage cluster head as unresponsive after head failover</td>
</tr>
<tr>
<td>20557790</td>
<td>vbox local storage ping check fails due to existing test.vmdk</td>
</tr>
<tr>
<td>20915437</td>
<td>vdi login webservice exception when run with jre7</td>
</tr>
<tr>
<td>21130549</td>
<td>upgrade tomcat, java, vbox</td>
</tr>
</tbody>
</table>

1.2 Release 3.5.1

This section provides information about the Oracle VDI 3.5.1 release.

About the Oracle VDI Release 3.5.1 Software

The Oracle VDI 3.5.1 software package includes the following components:

- Oracle VDI release 3.5.1
- Sun Ray Software release 5.4.3
- MySQL Server release 5.1.68
- Oracle VM VirtualBox release 4.2.26

For details of the changes and bug fixes in Sun Ray Software 5.4.3, see the Sun Ray Software Release Notes at http://docs.oracle.com/cd/E35310_01/index.html.
Updating to Oracle VDI Release 3.5.1

Updates to Oracle VDI release 3.5.1 are supported only from the following releases of Oracle VDI:

- 3.5
- 3.4.1
- 3.4

Before you update from Oracle VDI release 3.4 or 3.4.1, you must first upgrade the Sun Ray Server component to version 5.3.2. To upgrade the Sun Ray Server component, follow the instructions in the Sun Ray Software 5.3 Administration Guide at http://docs.oracle.com/cd/E25749_01/E25745/html/Upgrading.html.

To update to Oracle VDI release 3.5.1, see Updating an Oracle VDI Center in the Oracle VDI 3.5 Administration Guide.

To update from any other release of Oracle VDI, contact Oracle Support.

Supported Installation Platforms

For the latest information about supported installation platforms, see knowledge document ID 1632400.1 on My Oracle Support.

Bugs Fixed in Release 3.5.1

The following table lists bugs that have been fixed in Oracle VDI release 3.5.1.

<table>
<thead>
<tr>
<th>Bug ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14671196</td>
<td>windows 7/8 vm performance is very slow with vdi 3.5 build 23</td>
</tr>
<tr>
<td>16240036</td>
<td>session gets killed on hotdesking from sr3+ to sr2fs, when screenlock enabled</td>
</tr>
<tr>
<td>16569247</td>
<td>excessive ldap directory lookups for user authentication and group verification</td>
</tr>
<tr>
<td>16593003</td>
<td>adapt vb-install script for kernel version that comes with rhel</td>
</tr>
<tr>
<td>16667716</td>
<td>rds does not correctly use uttsc xrandr settings on linux vdi host</td>
</tr>
<tr>
<td>16676873</td>
<td>failure copying newly imported desktops using solaris zfs storage</td>
</tr>
<tr>
<td>16727110</td>
<td>fastprep 2224 error seen during cloning</td>
</tr>
<tr>
<td>16763760</td>
<td>cannot assign multiple roles at once through either gui or cli as document</td>
</tr>
<tr>
<td>16962833</td>
<td>correct domain seems missing in unlock process when clientscreenlock enabled</td>
</tr>
<tr>
<td>17390122</td>
<td>vdi 3.5 template linux sso behaves differently than clone</td>
</tr>
<tr>
<td>17613127</td>
<td>iscsi lun labels =64 chars cause errors and failure to create</td>
</tr>
<tr>
<td>17821316</td>
<td>vda kiosk script fails for multi head groups and separate rdp connections</td>
</tr>
<tr>
<td>17980349</td>
<td>unable to add host to desktop provider</td>
</tr>
<tr>
<td>18077182</td>
<td>&quot;-x&quot; on &quot;vda pool-desktops&quot; command sometimes seems to be ignored</td>
</tr>
<tr>
<td>18246740</td>
<td>upgrade apache tomcat to 6.0.39</td>
</tr>
<tr>
<td>18392116</td>
<td>ovd 3.5 with kerberos - login latency when a dc is taken offline</td>
</tr>
</tbody>
</table>
Release 3.5

<table>
<thead>
<tr>
<th>Bug ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>18519136</td>
<td>vdi service had to restart to get environment running again</td>
</tr>
<tr>
<td>19229518</td>
<td>vdi 3.5 users get blue screen when connecting to vcenter windows desktops</td>
</tr>
</tbody>
</table>

1.3 Release 3.5

This section provides information about new features and changes in the Oracle VDI 3.5 release.

1.3.1 New Features in Release 3.5

Oracle Enterprise Manager Integration

The Enterprise Manager Plug-in for Oracle VDI enables Oracle VDI integration by adding specific targets and a set of custom monitoring pages. Each Oracle VDI resource has its own target page within Oracle Enterprise Manager. However, the plug-in groups targets in a unified hierarchical view, making the monitoring of the Oracle VDI environment a much easier job. See the Enterprise Manager Plug-in User's Guide for Oracle Virtual Desktop Infrastructure for details.

Application Virtualization with Microsoft App-V

This release includes support for Microsoft Application Virtualization (App-V). App-V is an application virtualization solution that enables applications to be deployed to any desktop from an application virtualization server. Applications are streamed or cached locally on demand from the application virtualization server and then run locally on the desktop.

You can use App-V with flexible and personal desktops in Oracle VM VirtualBox pools. App-V version 4.6 is supported.

See Application Virtualization with Microsoft App-V in the Oracle Virtual Desktop Infrastructure Administrator's Guide for details.

New Supported Platforms

The following operating systems are now supported installation platforms for Oracle VDI and Oracle VM VirtualBox:

- Oracle Linux release 6.3
- Oracle Solaris 11.1

The hosts in an Oracle VDI Center must use the same operating system, either Oracle Linux or Oracle Solaris. You cannot use a mixture of Oracle Linux 5 and Oracle Linux 6 hosts, or Oracle Solaris 10 and Oracle Solaris 11 hosts, in an Oracle VDI Center.

For Oracle VM VirtualBox desktop providers, the virtualization hosts must use the same operating system, either Oracle Linux or Oracle Solaris. You can use a mixture of Oracle Linux 5 and Oracle Linux 6 hosts, or Oracle Solaris 10 and Oracle Solaris 11 hosts, in a provider.

Oracle Solaris 11 platforms cannot be used as a Sun ZFS storage type because the iSCSI stack is currently not supported.

For Oracle Solaris platforms, there are separate software archives for installing Oracle VDI on Oracle Solaris 10 and Oracle Solaris 11. Be sure to download the correct archive.
Recloning Specific Desktops

The new Reclone Desktop action (vda desktop-reclone) enables administrators to select specific desktops for recloning. Personal hard drives and user assignments are preserved and applied to the new clone. This action is particularly useful if a desktop has a corrupted system drive, or if it needs to be updated immediately to the latest master revision. See Recloning Selected Desktops in the Oracle Virtual Desktop Infrastructure Administrator's Guide for details.

Import and Export of Windows User Profiles

When you enable personal hard drives, you can now specify a network share as a location for importing and exporting Windows user profiles. Administrators can specify that user profiles are imported from the network share when users access their personal desktop for the first time and there is a new Export User Profile action (vda pool-profiles-export) for backing up user profiles. This feature is available only for Oracle VM VirtualBox pools and is supported on Windows 7 and later desktops. See About Personal Hard Drives and Windows User Profiles in the Oracle Virtual Desktop Infrastructure Administrator's Guide for details.

New Global Settings for Configuring the Oracle VDI Kiosk Session

There are several new global settings for configuring the Oracle VDI kiosk session. The settings enable you to do the following:

• Control whether the Desktop Selector screen is always displayed, even if all the available desktops would fit on all connected monitors (client.select.always).

• Control whether the kiosk session is ended when the user logs out (client.quit.onlogout).

• Add an item to the More Options menu in the Desktop Login screen that enables users to run a different kiosk session, for example to access a help desk application. See Adding a Helper Function to the Desktop Login Screen for details.

See Global Settings for the Oracle VDI Kiosk Session in the Oracle Virtual Desktop Infrastructure Administrator's Guide for details.

New Command for Reloading iSCSI and Sun ZFS Storage Configuration

The new vda provider-vb-reconfigure command can be used to reload the iSCSI and Sun ZFS storage configuration for Oracle VM VirtualBox providers on Oracle Linux platforms. You might need to use this command if you upgrade the host operating system when you update your VirtualBox hosts. See Reloading iSCSI or Sun ZFS Storage Configuration on Oracle VM VirtualBox Hosts in the Oracle Virtual Desktop Infrastructure Administrator's Guide for details.

Enhancements to the Desktop Login and Change Password Screens

The Desktop Login and Change Password screens have been enhanced to provide more meaningful error messages when users experience login failures or password change failures.

1.3.2 Changes in Release 3.5

Changes to Supported Platforms

The following are the changes to supported platforms for this release:
Changes in Release 3.5

- **Oracle VDI and Oracle VM VirtualBox on Oracle Linux (64-bit) on x86 platforms**: Oracle Linux release 5.8 and 6.3 are supported. Oracle Linux release 5.6 and 5.7 are no longer supported.

  Due to Bug ID 13974640, you must use the Unbreakable Enterprise Kernel if you use Oracle Linux as the platform for your VirtualBox hosts. The Red Hat kernel is not supported.

- **Oracle VDI and Oracle VM VirtualBox on Oracle Solaris (64-bit) on x86 platforms**: The minimum supported Oracle Solaris 10 release is now Oracle Solaris 10 release 8/11 (update 10). Oracle Solaris 11.1 is supported. Oracle Solaris 10 release 09/10 (update 9) is no longer supported.

- **VMware vCenter desktop provider**: VMware vCenter server 5.1 is now supported. VMware vCenter server 4.0 and VMware VirtualCenter server 2.5 are no longer supported.

- **Desktop platforms**: Windows 8, Oracle Linux release 6.3 and Oracle Solaris release 11.1 are now supported. Windows Vista Enterprise, Windows XP SP2 32-bit, Windows 2000 SP4, Oracle Linux 5.6, and Ubuntu 11.04 are no longer supported.

**Changes to Automatic Failover**

The primary host in an Oracle VDI Center is also configured as the primary server in a Sun Ray failover group. In previous releases when automatic failover occurred, a secondary host was promoted to become the primary host in the Oracle VDI Center and this host was also reconfigured as the Sun Ray primary server. Starting with this release, the Sun Ray primary server is no longer automatically reconfigured during failover by default.

**Note**

If you use the embedded Oracle VDI MySQL database and a failover occurs, the `vda.primary.host` property will not be set because the master database host and the Sun Ray primary server are not the same.

There is also a new `srs.primary.autofailover` property for Oracle VDI Centers which can be used to control whether automatic reconfiguration of the Sun Ray primary server takes place during failover, as in previous releases. This property depreciates the `srs.primary.autoconfig` property used in previous releases of Oracle VDI. See Tuning Automatic Failover and Changing the Sun Ray Primary Server in the Oracle Virtual Desktop Infrastructure Administrator's Guide for details.

**Changes to Administration Tools for Root User**

On Oracle Solaris platforms, Oracle VDI now includes support for root as a role. You can use the `su` or `sudo` commands to assume the root role in order to run Oracle VDI commands that require root privileges, such as the `vda-config` command. When you add a host to an Oracle VDI Center and root is configured as a role, you are now prompted for the credentials required to assume the root role on the primary host.

On all platforms, the root user is no longer assigned the Primary Administrator role by default. When you configure a new Oracle VDI Center, you are prompted for the user name of the user that should have the Primary Administrator role. Other users can then be granted administrative privileges by this user. The root user is different to any other user and can only access Oracle VDI Manager if they are assigned an administrator role. However, on the command line, the root user can always run Oracle VDI commands, even if they are not assigned any administrator roles.

When you update from a previous Oracle VDI release, the list of administrators is not changed and the root user is still assigned the Primary Administrator role. However, another Primary Administrator can now remove or edit the role assignments for the root user using either Oracle VDI Manager or the command line.
Changes to Template Revisions

A revision of a template can be nominated as the master for cloning desktops in a pool. When the master changes, all desktops based on that template must be recloned from the new master. This is no longer an immediate operation but rather a scheduled one. You can now specify the date and time when the recloning of the desktops occurs and whether desktops in use are recreated either at the same time or only after their users have logged out.

Changes to Supported Locales

Users can choose from a set of languages in the Oracle VDI login screen. Language and locale support has changed as follows:

- The Swedish locale is no longer available.
- The Dutch locale is now supported.

Changes to Location Awareness

Location awareness adds additional hotdesking capabilities for Windows desktops and RDS sessions. The feature has been extended so that more environment parameters can be set in Windows startup/logon scripts. The Oracle VM VirtualBox Guest Additions have been extended to support the additional parameters for VRDP sessions.

For detailed information, see Location Awareness in the Oracle Virtual Desktop Infrastructure Administrator's Guide.

Enhanced Smart Card Support

Due to enhancements in Sun Ray Software, smart card services are now also available for Oracle VDI on Oracle Linux installation platforms. Smart card services, such as smart card authentication, are provided through the PC/SC-lite API. For details, see Smart Card Services in the Sun Ray Software Administration Guide.

Also, Oracle VM VirtualBox now supports smart card device redirection for VRDP connections to Windows desktops. Smart cards can be used with desktops, for example for PIN authentication and signing e-mail with a certificate stored on the card. See also Bug ID 14731581 for important information about drivers.

Dynamic Session Resizing

Dynamic session resizing allows the remote desktop to be resized automatically to fit the size of your local desktop client session. When you reconnect to a session from a different device, or use a client device like a tablet, which can be rotated, the new screen configuration is detected and the session screen dimensions are adapted accordingly. This feature is based on the XRandR extension, which is enabled by default in Oracle VDI. Dynamic session resizing requires that the Xinerama extension is disabled.

1.3.3 About the Oracle VDI Release 3.5 Software

Oracle VDI is a layered software solution that uses virtualization, user directory, database, and desktop access software.

The software package includes the following components:

- Oracle VDI release 3.5
- Sun Ray Software release 5.4
1.3.4 Bugs Fixed in Release 3.5

The following table lists bugs that have been fixed in Oracle VDI release 3.5.

**Oracle VDI Requirements and Platform Support**

For details of the requirements for this release of Oracle VDI and what is supported, see the following information in the *Oracle Virtual Desktop Infrastructure Administrator’s Guide*:

- Oracle VDI System Requirements
- Oracle VDI Update Requirements
- Supported User Directories
- System Requirements for Oracle VM VirtualBox
- System Requirements for Microsoft Hyper-V
- System Requirements for Microsoft Remote Desktop Services
- System Requirements for VMware vCenter
- Introduction to Storage
- Supported Desktop Operating Systems

For the latest list of peripherals tested to work with Sun Ray Clients, see the Sun Ray Client and Oracle Virtual Desktop Client Peripherals List.

**Additional Supporting Software**

Additional software that can be used with Oracle VDI can be downloaded using the following links:

- Oracle Linux
- Oracle Solaris
- Oracle Virtual Desktop Client
- Oracle Secure Global Desktop

**Supporting Documentation**

Further information about additional software can be found using the following links:

- Sun Ray products documentation: release note, installation, configuration, and administration information for Sun Ray Software, Sun Ray Windows connector (uttsc), and Sun Ray Clients (including Oracle Virtual Desktop Client).
- Oracle VM VirtualBox documentation: user and developer documentation for VirtualBox.
- Oracle Secure Global Desktop documentation: release note, installation, configuration, and administration information for Oracle Secure Global Desktop.

The following table lists bugs that have been fixed in Oracle VDI release 3.5.

- MySQL Server release 5.1.50
- Oracle VM VirtualBox release 4.2.10

**Oracle VDI Requirements and Platform Support**

For details of the requirements for this release of Oracle VDI and what is supported, see the following information in the *Oracle Virtual Desktop Infrastructure Administrator’s Guide*:

- Oracle VDI System Requirements
- Oracle VDI Update Requirements
- Supported User Directories
- System Requirements for Oracle VM VirtualBox
- System Requirements for Microsoft Hyper-V
- System Requirements for Microsoft Remote Desktop Services
- System Requirements for VMware vCenter
- Introduction to Storage
- Supported Desktop Operating Systems

For the latest list of peripherals tested to work with Sun Ray Clients, see the Sun Ray Client and Oracle Virtual Desktop Client Peripherals List.

**Additional Supporting Software**

Additional software that can be used with Oracle VDI can be downloaded using the following links:

- Oracle Linux
- Oracle Solaris
- Oracle Virtual Desktop Client
- Oracle Secure Global Desktop

**Supporting Documentation**

Further information about additional software can be found using the following links:

- Sun Ray products documentation: release note, installation, configuration, and administration information for Sun Ray Software, Sun Ray Windows connector (uttsc), and Sun Ray Clients (including Oracle Virtual Desktop Client).
- Oracle VM VirtualBox documentation: user and developer documentation for VirtualBox.
- Oracle Secure Global Desktop documentation: release note, installation, configuration, and administration information for Oracle Secure Global Desktop.

The following table lists bugs that have been fixed in Oracle VDI release 3.5.

- MySQL Server release 5.1.50
- Oracle VM VirtualBox release 4.2.10
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## Changes in the Next Release

Microsoft Hyper-V desktop providers may no longer be supported in the next release of Oracle VDI.
Chapter 2 Known Issues

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2.1 Performance Update

There are some known issues that affect scalability for large numbers of sessions (more than 80 simultaneous sessions per server) on Oracle Linux 6 and Oracle Solaris 11 systems. These limits are a result of default configurations and low file descriptor resource caps configured in the system DBus and gdm processes. The following workarounds can be applied to extend scalability.

Oracle Linux 6

1. Become superuser on the Sun Ray server.

2. Change the default DBus resource limits by creating a /etc/dbus-1/system-local.conf file with the following lines:

```xml
<?DOCTYPE busconfig PUBLIC "-//freedesktop//DTD D-Bus Bus Configuration 1.0//EN" "http://www.freedesktop.org/standards/dbus/1.0/busconfig.dtd">
<busconfig>
  <!-- default for this is 2048 -->
  <limit name="max_completed_connections">32768</limit>
  <!-- default for this is 256 -->
  <limit name="max_connections_per_user">4096</limit>
</busconfig>
```
3. Change the system GDM daemons file descriptor resource cap by adding a `ulimit` command to the `/etc/X11/prefdm` file.

   After the line `PATH=...`, add the following line:

   ```
   ulimit -n 16384
   ```

4. Reboot the system for the changes to take effect.

Oracle Solaris 11

1. Log in as root on the Oracle VDI host.

2. Change the default DBus resource limits by creating a `/etc/dbus-1/system-local.conf` file with the following lines:

   ```
   <!DOCTYPE busconfig PUBLIC "-//freedesktop//DTD D-Bus Bus Configuration 1.0//EN"
   "http://www.freedesktop.org/standards/dbus/1.0/busconfig.dtd">
   <busconfig>
     <!-- default for this is 2048 -->
     <limit name="max_completed_connections">32768</limit>
     <!-- default for this is 256 -->
     <limit name="max_connections_per_user">4096</limit>
   </busconfig>
   ```

3. Change the system DBus daemons file descriptor resource cap by adding a `plimit` command to the `/etc/init.d/utsyscfg` file.

   After the line `start)` (line 320), add the following lines:

   ```
   if [ -x /bin/plimit ]; then
       DPID=$(pgrep -f "dbus-daemon --system")
       if [ -n "$DPID" ]; then
           plimit -n 16384 $DPID
       fi
   fi
   ```

4. Force the system gdm process to use the Solaris Extended File Facility by replacing a line in the `/lib/svc/method/svc-gdm` file.

   Replace the line `/usr/sbin/gdm $arg &` with the following two lines:

   ```
   ulimit -n 16384
   LD_PRELOAD_32=/usr/lib/extendedFILE.so.1 /usr/sbin/gdm $arg &
   ```

5. Reboot the host for the changes to take effect.

2.2 System Hangs When Installing VirtualBox on Oracle Solaris Platforms (Sun Bug ID 7116094)

In some circumstances, when you install Oracle VM VirtualBox, the system hangs.

The issue affects large servers, such as Sun Fire X4470 M2, that run Oracle Solaris 10 8/11 (update 10).

In order to install VirtualBox, an IDR (Interim Diagnostics and Relief) must applied to the system. See knowledge document ID 1451285.1 on My Oracle Support for details.
2.3 "Console Already in Use" Warning Does Not Display When Expected (Bug ID 12364760)

When you open a second console on a given desktop, a warning used to state, "Console Already in Use". This message does not appear when expected. For instance, assuming you have created a VirtualBox desktop provider and a pool, and imported and cloned a desktop, then when you take the kiosk session of a desktop and launch that desktop's console from the Admin GUI, you see the `ctrl+alt+del` screen, but the warning is not displayed.

2.4 Virtualization Hosts Crash if a Storage is Shut Down (Bug ID 13557337)

If a storage host is shut down (or crashes) and the associated Oracle Cluster File System version 2 (OCFS2) file systems are still mounted on the virtualization hosts, the virtualization hosts crash.

If you need to reboot a storage host, enable maintenance mode for the storage first, see Storage Maintenance in the Oracle Virtual Desktop Infrastructure Administrator's Guide. This enables Oracle VDI to unmount the OCFS2 file systems. Once the storage is in maintenance mode, it can be rebooted.

The problem affects VirtualBox hosts on Oracle Linux platforms if you use either Sun ZFS storage or iSCSI storage.

2.5 Bash Prompt Characters Can Break SSH Connections (Bug ID 13572569)

The default shell for root on Oracle Linux platforms is bash. When Oracle VDI runs `ssh` commands, it receives any characters generated by the user's bash environment, such as scripts and aliases in `$HOME/.bashrc`.

If Oracle VDI interprets any characters received as an escape character, it breaks the SSH connection. This can cause errors, for example, when you add a host to a Oracle VM VirtualBox desktop provider.

2.6 Storage Host is Shown as Unresponsive During Template Import (Bug ID 13639979)

A storage host can be shown as unresponsive and a critical alarm is displayed during a template import job even though the storage is available.

Particularly with slow networks, the storage utilization can reach 100% when importing a template and no other jobs can be performed. When the template import job is complete, the storage host status returns to enabled.

2.7 The `vb-install` Script Does Not Check VMs for All Users (Bug ID 13732353)

When the `vb-install` script is executed for an upgrade or uninstall, it first does a check for registered and running VMs to see if they need to be stopped and/or unregistered. Within this script, `VBoxManage` checks for VMs, however it is always executed as root and will always only return VMs configured for the root user. `VBoxManage` should be executed as the user that VirtualBox was previously installed with to list VMs, power-off, or to perform any other similar functions.
2.8 Problems Adding a VirtualBox Host to a Desktop Provider While an Add Operation is in Progress (Bug ID 13944126)

Given an Oracle VM VirtualBox Desktop Provider with a host added, if you try to add another VirtualBox host while an existing Add Storage job is still in progress, no storage mount point is created on the second host, and an exception is printed to the Cacao log.

To avoid this condition, do either of the following:

• Make sure the Add Storage job has completed successfully before trying to add another storage host.

• Add all VirtualBox hosts before adding a storage host to the Desktop Provider.

2.9 Windows 7 Desktops Fail to Start on Oracle Linux Hosts That Use the Red Hat Kernel (Bug ID 13974640)

Windows 7 virtual machines require asynchronous I/O to operate correctly.

When Oracle Linux is used as the platform for Oracle VM VirtualBox virtualization hosts, the iSCSI and Sun ZFS storage types are configured using Oracle Cluster File System version 2 (OCFS2). Due to a bug, OCFS2 does not support asynchronous I/O when used with the Red Hat kernel. The bug does not affect OCFS2 when using Oracle's Unbreakable Enterprise Kernel.

As a result, in this release you must use the Unbreakable Enterprise Kernel if you use Oracle Linux as the platform for your VirtualBox hosts. The Red Hat kernel is not supported.

This has the following consequences:

• The `vb-install` script can only be used to install the bundled release of VirtualBox if you use the Unbreakable Enterprise Kernel.

• The Single Oracle VDI Host Configuration model is only supported if you use the Unbreakable Enterprise Kernel.

2.10 Sessions Disconnect Unexpectedly With Ubuntu 12.04 Desktops (Bug ID 14254390)

When using Ubuntu 12.04 as the desktop platform, and Unity as the desktop environment, users might be disconnected unexpectedly from their desktop sessions.

The workaround is to use the Gnome Classic desktop environment instead.

2.11 After Updating Oracle VDI, Users Cannot Connect to Their Windows Desktops (Bug ID 14272752)

After you update Oracle VDI to release 3.4 or later, users might find that they can no longer connect to their Windows desktops. The problem affects desktops that are configured for automatic logons (auto-logon) and is known to particularly affect Windows XP desktops in pools that use Microsoft RDP (MS-RDP) as the desktop protocol.

In order to log users on automatically, Oracle VDI provides a user name, password, and domain name. In previous releases, Oracle VDI used a shortened domain name that was usually identical to the NetBIOS
name. Oracle VDI release 3.4 and later uses a fully-qualified domain name (FQDN) by default and, because this is can be different to the NetBIOS name, automatic logons can fail.

The workaround is to configure the pool to use the NetBIOS name for the domain name. In Oracle VDI Manager, select a pool, go to the Settings tab, and deselect the **Use Fully Qualified Domain Name** option. On the command line, use the `vda pool-setprops --properties=fqdn-login=disabled pool-name` command. This option only applies to pools that are linked to Active Directory type companies.

### 2.12 Recloning Creates Duplicate Reserved Desktops (Bug ID 14577906)

When you use the reclone desktops action (introduced in Oracle VDI release 3.5) to reclone selected desktops, this can result in duplicate desktops that are stuck in the Reserved state.

The duplicate desktops can be safely deleted.

### 2.13 Poor Desktop Performance With VRDP on Oracle Linux Platforms (Bug ID 14731581)

This issue is only seen on Oracle Linux hosts that are used as both an Oracle VDI host and an Oracle VM VirtualBox host.

When a virtual machine is run on a host that also hosts the user session, the performance of the desktop is poor when the connection protocol is VRDP.

The problem is caused by a mismatch between the maximum transmission unit (MTU) of the loopback network interface and the Sun Ray Windows connector (`uttsc`) receive buffer.

The solution is to decrease the MTU of the loopback interface so that it is less than the `uttsc` receive buffer, which is 8192 bytes. You do this as follows:

1. Use the `ifconfig` command to check the current MTU of the loopback interface.

   For example:

   ```
   # /sbin/ifconfig lo
   lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
               UP LOOPBACK RUNNING  MTU:16346  Metric:1
               RX packets:134095573 errors:0 dropped:0 overruns:0 frame:0
               TX packets:134095573 errors:0 dropped:0 overruns:0 carrier:0
               collisions:0 txqueuelen:0
               RX bytes:82894163173 (77.2 GiB)  TX bytes:82894163173 (77.2 GiB)
   ```

2. If the MTU is 8192 bytes or more, change the MTU of the loopback interface to 8154 bytes.

   The MTU must be less than 8192 bytes. A value of 8154 bytes has been tested and is known to resolve the performance issue.

   Use the `ifconfig` command to change the MTU, for example:

   ```
   # /sbin/ifconfig lo mtu 8154
   ```

   To make the change persist after a reboot, edit the `/etc/sysconfig/network-scripts/ifcfg-lo` file and add the following line:
Use the `ifconfig` command to verify that the MTU of the loopback interface has been changed.

2.14 Issues With Missing USB Smart Card Reader Device Drivers (Bug ID 14731581)

VirtualBox RDP (VRDP) supports smart cards by emulating a USB smart card reader, the SCR335 USB Smart Card Reader device. The driver for this device is not included with Windows.

In pools that use system preparation, cloning might fail because the Windows desktops cannot install the driver for this device (the desktops get stuck at the Found New Hardware Wizard).

In pools that do not use system preparation, when users log in to a desktop for the first time, they see the Found New Hardware Wizard (Windows XP desktops) or the Driver Software Installation window (Windows 7 and later desktops).

For Windows 7 and later desktops, Windows might be able to install the required drivers automatically using Windows Update when it detects the device. For Windows XP desktops, the device drivers must be installed manually.

To avoid issues with this device, it is best to install the device drivers in the template or desktop. You can download the drivers from:


On the download page, select the SCR335 device and the required operating system, browse for the SCR3xxx PC/SC Installer, and then download the `SCR3xxx_Win_drivers_onlyInstaller_V<version>.zip` file.

Because the smart card device is a USB device and USB support is enabled by default, the driver issues are seen with pools that use VRDP, even if smart card device redirection is disabled in the pool RDP settings. The driver issues are not seen if the pool uses Microsoft RDP.

2.15 Unable to Log in to Oracle VDI Manager Running on Oracle Solaris 11 Using Firefox (Bug ID 14802239)

Oracle Solaris 11 uses Transport Layer Security (TLS) version 1.1, which Firefox does not support yet. When you use Firefox to connect to Oracle VDI Manager running on Oracle Solaris 11, the browser reports the error code `ssl_error_internal_error_alert`. The workaround is to connect and authenticate with TLS 1.0 disabled in Firefox.

1. Disable TLS 1.0 in Firefox.

   To access this setting, open the `Options` window, select `Advanced` and then select the `Encryption` tab.

2. Log in to Oracle VDI Manager.

   Firefox stores the server certificate and uses it for future connections.

3. Once you have successfully logged in, you can re-enable TLS 1.0 in Firefox.
2.16 Oracle VDI Installation Hangs at Installing Java Runtime Environment (Bug ID 15909269)

Due to a known Java SE JDK and JRE issue (Bug ID 15911373), the Oracle VDI installation might hang at the "+ Installing Java Runtime Environment..." step. This behavior has been observed on Oracle Solaris 10 Update 10 running in a virtual machine on VMware vCenter/ESXi 5.1.

If the Oracle VDI installation hangs at this step, use the following workaround to make the installation proceed as normal:

1. Look up the process ID (PID) for the `vda-install-java` command.
   
   For example, use the `ps -ef | grep vda-install` command.

2. Use the PID to find the hung process.
   
   For example, use the `ptree PID` command.
   
   The process shown at the end of the list is the process blocking the installation.

3. Kill the hung process.
   
   For example, use the `pkill smbios` command.

If you have already quit an installation because of this issue, the Oracle VDI installation might fail when you try to install again and the following error is displayed "There was a problem installing Java Runtime Environment". This error is caused by the presence of the previous JRE installation in the `/opt/SUNWvda` directory. To resolve this issue, delete the `/opt/SUNWvda` directory and install Oracle VDI again. If the installation hangs at the Java Runtime Environment install step, apply the above workaround to enable the installation to proceed.

2.17 Connection to the Database is Lost if the Host Disk is Full (Bug ID 15921366)

If the disk that hosts the Oracle VDI database is full, the connection to the database is lost. The issue can affect both the embedded MySQL database and remote databases, and can result in a failover.

The Cacao logs contain the following error:

```
Internal Exception: java.sql.SQLException: Got error 28 from storage engine
Error Code: 1030
```

The solution is to ensure that your hosts have sufficient free disk space. If you are using the embedded MySQL database, the database is located at `/var/opt/SUNWvda/mysql`.

2.18 Template Import Fails Because Virtual Disk UUID Cannot Be Updated (Bug ID 16175655)

This is a file permissions and ownership issue, which may occur in installations where the VirtualBox user is not root. During the import of a template, the UUID of a virtual disk must be changed if a disk image with the same UUID already exists, for example because the same template has been imported before or if the UUID is assigned to the disk of another virtual machine not controlled by Oracle VDI. The non-root VirtualBox user does not have the necessary permissions to assign a new UUID to the virtual disk image file.
The workaround is to manually change the UUID of the virtual disk image file in the source template before importing it. You can do this with the `/usr/bin/VBoxManage` command (Oracle Linux platforms) or the `/opt/VirtualBox/VBoxManage` command (Oracle Solaris platforms).

The command syntax is:

```bash
VBoxManage storageattach "<VM_name>" --storagectl "<controller_name>" \
--port "<controller_port_no>" --device "<device_no>" --type "hdd" \ 
--medium "<path_to_disk_image>" --setduuid "<new_disk_image_uuid>"
```

First, look up the necessary parameters in the virtual machine configuration. You need the storage controller name and the port and device number of the attached medium, or virtual disk. The medium type is "hdd". The full path to the virtual disk is also displayed in the storage controllers configuration section.

The following example shows how the UUID of a virtual disk attached to a virtual machine named windows-7-template is changed.

```bash
VBoxManage showvminfo "windows-7-template" --machinereadable

[...]
storagecontrollername0="IDE Controller"
storagecontrollertype0="PIIX4"
storagecontrollerinstance0="0"
storagecontrollermaxportcount0="2"
storagecontrollerportcount0="2"
storagecontrollerbootable0="on"
storagecontrollername1="SATA Controller"
storagecontrollertype1="IntelAhci"
storagecontrollerinstance1="0"
storagecontrollermaxportcount1="30"
storagecontrollerportcount1="1"
storagecontrollerbootable1="on"
"IDE Controller-0-0"="none"
"IDE Controller-0-1"="none"
"IDE Controller-1-0="/usr/share/virtualbox/VBoxGuestAdditions.iso"
"IDE Controller-ImageUUID-1-0"="44d80449-ff62-4d9f-b96f-37bd8f5b50b8"
"IDE Controller-tempeject"="off"
"IDE Controller-IsEjected"="off"
"IDE Controller-1-1"="none"
"SATA Controller-0-0="/home/vboxuser/VirtualBox VMs/windows-7-template/windows-7-template.vdi"
"SATA Controller-ImageUUID-0-0"="71936354-7f1f-41ac-ba44-92aabdb2872c"
[...]
```

```bash
VBoxManage storageattach "windows-7-template" --storagectl "SATA Controller" \
--port "0" --device "0" --type "hdd" \ 
--medium "/home/vboxuser/VirtualBox VMs/windows-7-template/windows-7-template.vdi" \ 
--setduuid "71936354-7f1f-41ac-ba44-92aabdb28740"
```

2.19 VMware Windows 8 Cloning Fails (Bug ID 16209372)

Due to a known VMware issue, cloning Windows 8 desktops on VMware may fail if you choose to customize using a VMware Customization Specification. For more information, refer to the VMware Knowledge Base article ID 2037366.

2.20 Desktop Login Screen is not Displayed on Oracle Linux 6 Platforms (Bug ID 16269057)

After you install Oracle VDI on Oracle Linux 6 platforms, the Desktop Login screen might not be displayed. The problem is caused by the GNOME Display Manager (GDM) being in an incorrect state.
The solution is to reboot the host.

2.21 Windows 7 Media Playback with VRDP Connection Hangs when Hotdesking or Power-Cycling (Bug ID 16343063 and 16355589)

When playing media content in a Windows 7 desktop, using a VRDP connection, media playback is not terminated properly when you start hotdesking or power-cycle the Sun Ray Client.

The workaround depends on the way media is played.

- For media played in a browser, disconnect from the Windows 7 desktop and log back in. The locked browser window should disappear and you can start media playback again.

- For media played in Windows Media Player, you must terminate the process using Windows Task Manager. If you use location awareness, you can add a script to the Disconnect Actions to terminate the Windows Media Player process when the client is disconnected. See Location Awareness.
Chapter 3 Feedback and Support

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This chapter provides information about how to provide feedback and contact support for the Oracle Virtual Desktop Infrastructure (VDI) product.

3.1 Providing Feedback and Reporting Problems

To provide feedback or to ask a general question, you can post to the Oracle VDI and Sun Ray Software Community Forum at the Virtual Desktop Infrastructure and Sun Ray Clients General Discussion Forums are community-monitored and posting to the Oracle VDI and Sun Ray Software Community Forum does not guarantee a response from Oracle. If you need to report an issue and have an Oracle Premier Support Agreement, you should open a case with Oracle Support at https://support.oracle.com.

If you are reporting an issue, please provide the following information where applicable:

• Description of the problem, including the situation where the problem occurs, and its impact on your operation.

• Machine type, operating system release, browser type and version, locale and product release, including any patches you have applied, and other software that might be affecting the problem.

• Detailed steps on the method you have used, to reproduce the problem.

• Any error logs or core dumps.

3.2 Contacting Oracle Specialist Support

If you have an Oracle Customer Support Identifier (CSI), first try to resolve your issue by using My Oracle Support at https://support.oracle.com. Your Oracle Premier Support CSI does not cover customization support, third-party software support, or third-party hardware support.

If you cannot resolve your issue, open a case with the Oracle specialist support team for technical assistance on break/fix production issues. The responding support engineer will need the following information to get started:

• Your Oracle Customer Support Identifier.

• The product you are calling about.

• A brief description of the problem you would like assistance with.

• Any logs or support bundles you have, see Section 3.3, “Support Bundles” for details.

If your CSI is unknown, find the correct Service Center for your country (http://www.oracle.com/us/support/contact-068555.html), then contact Oracle Services to open a non-technical service request (SR) to get your CSI sorted. Once you have your CSI, you can proceed to open your case through My Oracle Support.
3.3 Support Bundles

Oracle VDI can generate support bundles containing log files and system configuration from each host in an Oracle VDI Center. This information can be used by Oracle Support to analyze and diagnose system issues.

Administrators generate support bundles using the `vda-center bundle-create` command. The support bundle files can be uploaded for further analysis by Oracle Support.

Generating a Support Bundle

To generate a new support bundle, run the following command, as root, on any host in an Oracle VDI Center:

```
# /opt/SUNWvda/sbin/vda-center bundle-create
```

Creating support bundle for Oracle VDI Center "VDI Center"
A support bundle will be created on each host before collecting them together.
+ Start support bundle creation on vdi1.example.com...
+ Start support bundle creation on vdi2.example.com...
+ Done (vdi1.example.com)
+ Done (vdi2.example.com)

Collecting support bundles
+ Get support bundle from vdi2.example.com...
+ Done (269714541 Bytes moved.)

Creating archive of support bundles
+ Creating tarball...

The support bundle is located at '/var/tmp/VDI-Center-11_05_29_17-09-22.tar.'.

By default, this command creates a support bundle on each host in the Oracle VDI Center. It might take several minutes for each support bundle to be created. Once all the support bundles are created, they are copied to the host on which the command is run. All the support bundles are then combined into a single tar archive, which is stored in `/var/tmp` by default.

Support bundles use the Oracle VDI Center Agent for remote communication with the hosts in an Oracle VDI Center. If a host cannot be contacted, for example because of network issues, a warning is displayed and support bundles are created only for the hosts that can be contacted.

The behavior of the `vda-center bundle-create` command can be adapted using one or more of the following options:

```
vda-center bundle-create [-l|--localhost]
 [-h <host1>,<host2> | --host=<host1>,<host2>]
 [-d <directory> | --directory=<directory>]
 [-v|--verbose]
 [-g|--get]
 [-b|--backup]
 [<file name>]
```

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-l</code></td>
<td>Generates a support bundle only for the host on which the command is run.</td>
</tr>
</tbody>
</table>

Table 3.1 `vda-center bundle-create` Command Options
### Option Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h &lt;host1&gt;,&lt;host2&gt; ...</td>
<td>Generates support bundles for the specified hosts only.</td>
</tr>
<tr>
<td>-d &lt;directory&gt;</td>
<td>Specifies a different directory for storing the support bundles.</td>
</tr>
<tr>
<td></td>
<td>The specified directory must exist on all hosts.</td>
</tr>
<tr>
<td>-v</td>
<td>For security reasons, this must be a directory or subdirectory in /tmp, /var/tmp, /var/run, or /var/opt/SUNWvda.</td>
</tr>
<tr>
<td>-g</td>
<td>Prints out additional information messages when the support bundle is created.</td>
</tr>
<tr>
<td>-b</td>
<td>Gets the support bundles from the hosts, but they are not combined into a single tar archive.</td>
</tr>
<tr>
<td></td>
<td>Includes full Oracle VDI backup data in the support bundle.</td>
</tr>
<tr>
<td>&lt;file name&gt;</td>
<td>This option exports the entire content of the Oracle VDI database and includes it in the support bundle.</td>
</tr>
<tr>
<td></td>
<td>Specifies the name of the tar archive.</td>
</tr>
<tr>
<td></td>
<td>If no name is specified, the name <code>&lt;center name&gt;--&lt;date&gt;</code> is used by default.</td>
</tr>
</tbody>
</table>

## Uploading a Support Bundle

For support bundles up to 2 GB, upload the file as part of the Service Request (SR) process in My Oracle Support (MOS).

- If you are still in the process of logging the SR, upload the support bundle in the **Upload Files/Attachments** step of the SR.

- If you have already logged the SR and need to upload files afterwards, proceed as follows:
  1. Log into MOS and open the **Dashboard** or **Service Request** tab.
  2. In the **Service Request** region, click the SR you want to update.
  3. In the **Update** section, select **Add Attachment**.
  4. In the pop-up window, select the file for upload, include any notes, and click **Attach File**.

Support bundles over 2 GB in size are uploaded using the file transfer service from Oracle support at supportfiles.sun.com. Oracle Support might request that you upload using a different mechanism.

1. Using a browser or FTP client, go to supportfiles.sun.com.
2. Select the support bundle file to upload.
3. Select a destination for the file.
   - Unless Oracle Support request otherwise, select the **cores** directory.
4. Enter a case number for the file.
Oracle Support provide you with a case number when you open a service request is opened. Providing a case number ensures that the file is correctly associated with service request.

5. Click the Upload button to upload the file.

Some browsers do not show the progress of the upload.

Do not click the Upload button multiple times, as this restarts the transfer.

When the upload is complete, a confirmation message is displayed.

The confirmation message contains the full path of the uploaded file. Write down the full path to the file, so that you can provide this information to Oracle Support, if the file is not associated with the correct case number.