

HP Remote Graphics Software



Release notes

This document comprises the release notes for HP Remote Graphics Software (HP RGS).

Topics covered in this document include the following:

- New features
- Known issues
- Security issues

What's new in Release 7.4

HP RGS 7.4 Sender supports Windows and Linux®. HP RGS 7.4 Receiver supports Windows, Linux®, and macOS™.

New features:

1. Floating License Server: The FLEXnet license server for floating licenses must be version 11.14 or later to support RGS 7.4. Local licenses are not affected. The FLEXnet license server is included with the HP RGS package. See the Licensing Guide at hp.com/go/RGS for more information.
2. Operating System Notes: Windows
 - Windows 10 Fall Creators Update is now supported
 - 64-bit versions of the Sender and Receiver for Windows are now available. If the 32-bit version of RGS is installed, the 64-bit installer may be used to upgrade to 64-bit RGS 7.4. Future versions of RGS will deliver only the 64-bit Sender and Receiver. The 32-bit version will be delivered at least until February of 2018. The 32 and 64-bit versions of RGS are compatible with each other. That is, a 32-bit Receiver can connect to either a 32 or 64-bit Sender and a 64-bit Receiver can connect to either a 32 or 64-bit Sender.
 - The 64-bit version of RGS is installed in C:\Program Files\HP by default
 - RGS 7.4 supports Windows 10 Creators Update (Version 1703)
 - If the Windows 10 version is updated after installing HP RGS, Remote USB may stop working. Uninstall and then reinstall HP RGS
3. Operating System Notes: Linux®
 - Previously, one installer for the Sender and one installer for the Receiver were sufficient for all supported distributions of Linux®. As of RGS 7.4, separate RGS installers are provided for different Linux® Distributions.

- The Linux® RGS Receiver Package contains two separate installers:
 - Receiver for RHEL 6.x
 - Receiver for RHEL 7.x and SUSE 12
- The Linux® RGS Sender and Receiver Package contains the two Receiver installers listed above plus installers for:
 - Sender for RHEL 6.x
 - Sender for RHEL 7.x and SUSE 12
 - Sender for SLED 11
- RHEL 7.4 and SLED 12 SP3 are now supported
- Restarting the Linux® Sender no longer requires a restart of the X Server
- A Receiver is no longer provided for SUSE Linux® Enterprise Desktop 11

Defect Fixes:

1. Fixed an issue where Resolution matching was not working with vGPU with NVIDIA® graphics on Windows.
2. Fixed a Linux® Receiver crash when using Advanced Video Compression.
3. Linux® Receiver to Linux® Sender no longer generates erroneous noise during the initial connection when using audio.
4. Toolbar functions are now available on touch devices when the virtual mouse is activated.
5. Fixed an issue where the cursor was incorrect or missing on the macOS™ Receiver.
6. The audio volume can now be adjusted on the sender system for RGS connections.
7. Fixed an issue where Match Receiver display resolutions was not working on headless Linux® sender systems.
8. Fixed several cursor issues.

Known Issues:

1. A reboot may be required during an update of the Windows Receiver if Remote USB is installed.

2. RHEL 7.4 requires an update to GDM to avoid a problem where the login screen does not return after a logout. See Red Hat Bugzilla bug 1469755.
3. On Linux® Receiver, the SETUP MODE sequence + H that is used to hide or unhide the toolbar does not always work as expected. This behavior is planned to be fixed in an upcoming release.

What's new in Release 7.3.3

HP RGS Release 7.3.3 is a release for Windows and Linux® Senders and Receivers and the macOS™ Receiver.

Defect Fixes:

1. Fixed an issue on Windows 10 where Single Sign On and Easy Login would fail when the user is required to press Ctrl+Alt+Delete before login.
2. Fixed an issue on Windows 7 where the Receiver would crash when Global Image Updates are disabled.
3. Added a "Connecting" message when network conditions delay initial display of the Sender desktop.
4. Fixed a crash when closing the Receiver with Advanced Video Compression (AVC) enabled.
5. Addressed a latency issue with connections using AVC.
6. Fixed a Sender crash on Windows 8 Virtual Machines using GPU pass-through.
7. Fixed a Match Resolution issue on Linux® Senders configured with non-default monitor refresh configurations.
8. Fixed a macOS™ receiver disconnect when using a Japanese keyboard layout.

Known Issues:

1. A reboot may be required during an update of the Receiver if Remote USB is installed.

What's new in Release 7.3.2

HP RGS Release 7.3.2 is a release for Windows and Linux® Senders and Receivers and the macOS™ Receiver.

New features:

1. Support for SUSE Linux® Enterprise 12.2.
2. Support for ThinPro v6.
3. Smart card redirection on Windows receiver supports a wider range of smart card reader devices including virtual smart cards. Smart cards support is not backwards compatible. To use the new solution, both sender and receiver need to be RGS 7.3.2 or later. Smart card redirection is supported on the following senders: Windows 7, 8.1, and 10 and now RHEL 6, RHEL 7, and SUSE Linux® Enterprise 12. (Linux® support is new in 7.3.2.) Smart card redirection is supported on Windows receivers only. On Windows-based and ThinPro-based receivers, smart cards can be remoted using Remote USB.
4. MaxImageUpdateRate now applies to AVC. In previous releases this setting only applied to HP3 (the default image codec).

Defect fixes:

1. Fixed an issue on Windows senders with NVIDIA® graphics where the RGS connection could consume unusually high network and CPU resources when the desktop is not changing.
2. Fixed a black screen issue when connecting to a HP ZBook laptop with Hybrid Graphics.
3. Fixed a crash caused by a sender having cloned/duplicate monitors with NVIDIA® Resolution Matching enabled.
4. Fixed a receiver crash in macOS™ Sierra when in Tabbed Mode.

Known Issues:

1. The smart card service on RHEL 7 may require additional configuration to start correctly: Add "-c /etc/reader.conf.d/hpremotescr.conf" to the pcsd startup script located at `usr/lib/systemd/system/pcsd.service`. The ExecStart option in this file should be modified to appear as follows: `ExecStart=/usr/sbin/pcsd --foreground --auto-exit -c /etc/reader.conf.d/hpremotescr.conf`.
2. On laptops with touch displays, RGS defaults to the touch interface. One of the symptoms is that Match Receiver display resolution is enabled and cannot be unchecked. To force the desktop user interface for these devices check the "Force RGS to use the desktop user interface,

even on tablets" option in the RGS Receiver Configuration application. See the User Guide for more information.

What's new in Release 7.3.1

HP RGS Release 7.3.1 is a release for Windows and Linux® Senders and Receivers and the macOS™ Receiver.

New features:

1. Support for Windows 10 Anniversary Update (Version 1607).
2. Performance improvement for HP3 on Senders with Windows 8.1 and Windows 10 Anniversary Update and later with AMD or Intel Graphics.
3. Performance Improvement for AVC with Windows Receivers (now AVC mode supports 4k like the default HP3 mode).
4. Improved resolution matching when using NVIDIA® graphics on Windows Senders (bare metal or virtualized environments). On by default for Windows 10 Anniversary Update and later. New functionality includes:
 - Intelligent layout matching independent of display order.
 - Automatic creation of "virtual displays" for resolution matching for Senders without displays attached or fewer displays on the Sender than the Receiver.
 - Support for custom resolutions in virtualized environments.
5. New property `IceLive.livessl.liveUDP.mtu`. When using a VPN, Set the MTU to a value lower than the MTU of the VPN for best performance with HP Velocity. See the User Guide for details.

Defect Fixes:

1. Fixed intermittent clipboard issues.
2. Improved reliability of Linux® sender restart after logout.
3. Fixed problems with the mouse in RGS Game Mode.
4. Better smart card remoting on ThinPro.
5. Improved detection of USB ports for USB redirection on Windows.

What's new in Release 7.2.4

HP RGS Release 7.2.4 is a release for Windows and Linux® Senders and Receivers. The following list describes the changes.

Defect fixes:

1. Fixed a crash or disconnect when using very large cursors. A cross-hair will be displayed on the receiver when cursor size exceeds the transport limit.

2. Fixed a crash when using Linux® senders with the Chrome browser.
3. Fixed an issue with the RGS preload license on HP EliteBook 8440w.
4. Smart cards can now be remoted to a sender from a ThinPro v5 receiver.
5. An outline of a window that is being moved or resized is correctly displayed when Reduced Resources is enabled for Metacity Linux® senders.

What's new in Release 7.2.3

HP RGS Release 7.2.3 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Sender properties were added to more easily configure VMware virtual machine displays for use with NVIDIA® GRID Graphics.

Defect fixes:

1. When logging into a Linux® Sender connected to a domain, `domain\user` is now an accepted format.
2. If a Linux® Sender is at the login screen and a user disconnects without logging in, it is now possible to reconnect to the RGS Sender.

What's new in Release 7.2.2

HP RGS Release 7.2.2 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Improved smart card functionality for Windows to enable a smart card to be used to authenticate on a receiver and sender simultaneously.
2. Added support for input devices with 5 buttons. Supported for Windows receivers and Windows senders; HP RGS 7.2.2 (or later) must be installed on both the sender and receiver.

Defect fixes:

1. Fixed an issue so that borderless receiver windows correctly snap to the monitor boundary.
2. Fixed an issue on Linux® senders in which certain keys in some languages were not echoed correctly on the receiver.
3. Removed a shared library path restriction Linux® senders to enable alternate X server driver packaging.
4. Fixed an issue on Linux® senders where Pulse audio and Pam security connections could write many repeated messages to the log files.

What's new in Release 7.2.0

HP RGS Release 7.2.0 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Support for RHEL 7.2.
2. Support for SLED 12.
3. Support for Windows 10.
4. Beta release of improved smart card functionality for Windows. To enable this functionality, select custom install during installation and enable the smart card option.

Defect fixes:

1. Fixed an HP RGS receiver crash when transitioning from HP RGS to RDP with Advanced Features requested but not activated.
2. Enabled animated cursors on Windows 8 systems when using the GPU display method.
3. Fixed Linux® sender crash when logging off of the sender system while connected to a receiver.
4. Fixed a Linux® receiver issue where excessive X server resources are consumed when the tool bar update statistics are visible.
5. Fixed a receiver issue that resulted in spurious session disconnections.
6. Fixed a rare sender crash during encoding with HP3 or JPEGLS.
7. Reduced the occurrence of receiver network connection warning screens.
8. Fixed black screen issue when running a multi-screen GPU Advanced Video Compression connection.
9. Directory mode now accepts directory.txt entries with spaces inside double quotes.
10. Fixed an issue with cursor position on windows senders with multiple displays that are configured with different levels of scaling.
11. Fixed a crash on exit with embedded receivers after accessing settings panel.

Known issues:

1. Windows 10 senders using HP3 with NVIDIA® graphics will operate with reduced performance or display a black screen pending a future NVIDIA® driver release. Workaround for a black screen is to configure the Comparitron display method. See HP RGS Sender Configuration in the Documentation.
2. Windows 10 senders using AVC with NVIDIA® graphics may display an offset

cursor or a blank display if a screen is set to lower than its native resolution.

A workaround is to disable GPU accelerated AVC rendering. See HP RGS Receiver Configuration in the Documentation.

3. Linux® senders with NVIDIA® graphics on RHEL 7.x and SLED 12 may display transient screen corruption with drivers lower than 352.41.

What's new in Release 7.1.1

HP RGS Release 7.1.1 is a release for the Windows sender. The following list describes the changes.

Defect fixes:

1. Fixed loss of mouse cursor control when using scaled displays.
2. Fixed floor control issue when using software comparitron.

What's new in Release 7.1.0

HP RGS Release 7.1.0 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Improved performance with default HP3 codec, with higher framerate and/or higher screen resolution compared to 7.0. HP RGS HP3 can now use multiple CPU cores. The amount of system CPU resource consumed by HP RGS can be controlled via properties, see the user guide for details.
2. WACOM tablet remoting with full functionality for Linux® to Linux® sessions.
3. Improved audio experiences on Linux® using the PulseAudio system for capture and playback. The sender can be configured to capture using Alsa. See the user guide for more details.
4. Advanced Video Compression (AVC) is now GPU accelerated on Linux® sender systems with GRID capable NVIDIA® graphics devices. AVC on Linux® also supports multi-monitor.
5. AVC has been updated to the latest GRID SDK from NVIDIA® on Windows and Linux® platforms.
6. Support for RHEL 7.
7. New tools to configure properties via a UI, avoiding the need to directly edit the corresponding text based files (rgsendeconfig and rgreceiverconfig). See the user guide for more details.

Defect fixes:

1. Fixed an issue with the GPU display method on NVIDIA® graphics devices with 10-bit

displays that resulted in very high bandwidth consumption.

2. Fixed animated cursors (the busy cursor) on RHEL 6 senders.

Notes:

1. The force full screen update option is enabled by default and has been removed from the UI. Its receiver property is "Is Global Image Updates Enabled".
2. This property prevents screen tearing. With it on, the performance of low powered receiver systems with multiple (3 or more) displays may be adversely affected.
3. Support for 32-bit Linux® operating systems other than HP ThinPro is no longer available.
4. Support for RHEL 5 is no longer available.

Known Issues:

1. Windows 8/8.1 senders without a mouse connected will not display a mouse cursor. This is a current limitation of Windows 8/8. A solution is under investigation.
2. The performance of AVC on displays using a resolution greater than full HD (1920x1080) varies depending on the content.
3. AVC does not currently support 4K or ultra HD (3840x2160) resolutions.
4. RHEL 7 senders with NVIDIA® graphics will exhibit screen corruption unless the Option "NoFlip" is set to true in xorg.conf. A solution is under investigation.

What's new in Release 7.0.2

HP RGS Release 7.0.2 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Add support for RHEL 6.6.

Defect fixes:

1. Fixed an issue that resulted in the cursor disappearing for users in a collaboration session.
2. Fixed an issue that could result in the Windows desktop remaining unlocked after using Switch User.
3. Fixed an issue that could result in the Windows desktop remaining unlocked after an HP RGS session reconnect.
4. Fixed an issue that caused a login attempt to fail after a previous failed login attempt.
5. Fixed an issue that caused a login delay to result in a login failure and cause a subsequent login attempt to fail.

- Fixed an issue that cause a login cancellation to display a login failure message and cause a subsequent login attempt to fail.
- Fixed a key mapping problem with the Brazilian ABNT2 keyboard layout.

What's new in Release 7.0.1

HP RGS Release 7.0.1 is a release for all supported products and platforms. The following list describes the changes.

New features:

- Added a sender property, Rgsender.PreferredLicenseOrder, that allows ordering and selection of HP RGS license types, see rgsenderconfig for details.
- Easy Login functionality is no longer limited to certain hardware platforms. The property Rgsender.IsAnonymousConnectionForceEnabled has been removed. See the user guide for details on Easy Login.

Defect fixes:

- Fixed HP Velocity connection instability with some Receiver platforms.
- Removed mirror driver from sender install on Windows 8 and later because Microsoft does not support mirror drivers starting with Windows.
- The "changelist" capture method is not available on Windows 8 as a result.
- Fixed an issue with Logitech Wireless keyboards on ThinPro.
- Fixed an issue that resulted in the collaboration notification dialog appearing behind other Windows.

What's new in Release 7.0.0

HP RGS Release 7.0.0 comes with a new list of supported platforms. Please consult the support matrix to ensure that your platforms supported. The following list describes highlevel changes.

New features:

- Upgraded HP Velocity to version 2. This version offers further improved connectivity and protection compared to previous versions. Traffic protected by HP Velocity now uses UDP, rather than TCP. The new version of HP Velocity is not compatible with older versions of HP Velocity. Only connections between HP RGS 7 Senders and Receivers will benefit from HP Velocity 2.1.

- A host of new tablet features has been introduced:
 - Gesture-to-hotkey mapping. Users can assign a series of keystrokes to a gesture via the new gestures tab in the UI.
 - Virtual Mouse. The virtual mouse allows for precise onscreen mouse control on a tablet.
 - Zoom & Pan. Tablet users are able to zoom and pan around the Sender desktop.
- Various improvements to the user interface for touch optimization and improved toolbar control.

Defect fixes:

- Remote USB installation on 64-bit Windows Embedded has been fixed.
- Virtual audio driver is installed on blade systems more consistently.
- Connections no longer end immediately when a Windows Remote Desktop Service session is created by another application. This should improve the way HP RGS interacts with other remote desktop applications.

Known issues:

- When an HP RGS sessions ends, it is possible that the Sender monitor will remain blanked. The problem can be resolved by connecting again with HP RGS and then disconnecting normally.
- When using NVIDIA® graphics with 10-bit monitors, older drivers can cause the image to have color problems. This issue can be resolved by setting a property. Some recent NVIDIA® drivers solve this problem.
- On Windows touch devices, increasing the Sender display resolution while connected can cause problems with tapping the confirm resolution dialog box. Use a USB mouse or the virtual mouse to click the button.

What's new in Release 6.0.8

HP RGS Release 6.0.8 is a release for all supported products and platforms. The following list describes the changes.

New features:

- Add support for RHEL 6.6.

Defect fixes:

- Fixed an issue that resulted in the cursor disappearing for users in a collaboration session.
- Fixed an issue that could result in the Windows desktop remaining unlocked after using Switch User.

- Fixed an issue that could result in the Windows desktop remaining unlocked after an HP RGS session reconnect.
- Fixed an issue that caused a login attempt to fail after a previous failed login attempt.
- Fixed an issue that caused a login delay to result in a login failure and cause a subsequent login attempt to fail.
- Fixed an issue that cause a login cancellation to display a login failure message and cause a subsequent login attempt to fail.
- Fixed a key mapping problem with the Brazilian ABNT2 keyboard layout.

What's new in Release 6.0.7

HP RGS Release 6.0.7 is a release for all supported products and platforms. The following describes the defect fix.

Defect fixes:

- Fixed an issue when transitioning from RDP to HP RGS. The HP RGS connection would fail if the user did not have administrator privilege.

What's new in Release 6.0.6

HP RGS Release 6.0.6 is a release for all supported products and platforms. The following list describes the defect fixes.

Defect fixes:

- Fixed an issue that resulted in the sender becoming non-responsive after transitioning between HP RGS and RDP.
- Fixed an issue that prevented the changelist capture method from functioning on Windows XP.
- Fixed issues related to resolution changes that cause the sender to become non-responsive on Linux®.
- Added account and session management to the HP RGS PAM module.
- Fixed a crash in the HP RGS Receiver when running under Leostream control.
- Allows HP RGS virtual audio driver to install on more platforms.

What's new in Release 6.0.5

HP RGS Release 6.0.5 is a release for all supported products and platforms. The following list describes the changes.

New features:

- Add support for ThinPro 4.4.
- The use of the installer command line has changed. See the user guide for details.

Defect fixes:

1. Fixed an issue that resulted in the Receiver displaying UI elements when it should not when used via the COM API.
2. Fixed issues where keys on the Bloomberg STB100 keyboard were being mishandled.
3. Fixed an issue that prevented resizing of the Receiver display window.
4. Fixed a repaint issue that could occur when maximizing the Receiver display window.

What's new in Release 6.0.4

HP RGS Release 6.0.4 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Added support for HP ZBook to the Sender preload license.
2. Added a Sender property that allows collaboration without displaying a collaboration authorization dialog (see rgSenderconfig).

Defect fixes:

1. Fixed a crash in the HP RGS X Server extension module.
2. Fixed an issue that may prevent remote USB from functioning when USB 3.0 is present.

What's new in Release 6.0.3

HP RGS Release 6.0.3 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Added support for HP Z230 to the Sender preload license.

Defect fixes:

1. Fixed performance, quality and latency problems related to Advanced Video Compression.
2. Fixed a security issue related to screen blanking.
3. Fixed an issue that caused loss of window focus when using a mouse scrollwheel.
4. Fixed an issue that could result in a bluescreen on ElitePad 900.
5. Fixed an issue that prevented the use of the IsMenuBarEnabled property on the Receiver.

What's new in Release 6.0.2

HP RGS Release 6.0.2 is a release for all supported products and platforms. The following list describes the changes.

New features:

1. Added support for Advanced Video Compression in directory mode.
2. Added support for RHEL 6.4.
3. Enabled support for ThinPro 3.3, 4.1, 4.2 and 4.3.

Defect fixes:

1. Fixed an issue with the Shift+Space+M key sequence not raising the Control Panel.
2. Fixed a black screen issue on Linux®.
3. Fixed an issue where the Sender GUI process would not start on Linux®.
4. Fixed an issue with the Bloomberg Keyboard.

What's new in Release 6.0.1

HP RGS Release 6.0.1 is a release for all supported products and platforms. The following list describes the changes.

Defect fixes:

1. Resolved an issue with the Preload license that caused the Sender to fail license checkout.
2. Resolved an issue with activation of Advanced Video Compression.

What's new in Release 6.0.0

HP RGS Release 6.0.0 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. HP RGS has a new UI look and feel. All UI components associated with HP RGS have been enhanced to improve aesthetics and usability.
2. The HP RGS Sender and Receiver can be configured to encode screen updates with an H.264 codec. H.264 consumes less bandwidth when compared with legacy codecs in many situations. H.264 settings are available in the Performance tab of the Settings panel under "Advanced Video Compression".
3. The HP RGS Sender and Receiver provide an install-time option to enable WAN optimization. This optimization provides improved network

performance when packet loss and latency are present in the environment.

4. Added support for Microsoft Windows 8 (desktop mode) for both Sender and Receiver.

Defect fixes:

1. Resolved a performance problem that can result if an application programmatically controls the cursor position on the Sender.

What's new in Release 5.4.8

HP RGS Release 5.4.8 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. Linux® Screen blanking.
2. Support for SLED11 Sender.
3. Support for RHEL6.2 Sender.
4. IP address filtering.
5. Linux® Audio enhancements.
6. ThinPro 4.1 Kernel module.
7. Linux® "easy login" equivalent.

Defect fixes:

1. Resolved issue with multiple connection attempts required after RDP Disconnect on XP with DP Gina module.
2. Resolved issue when 4 display used in L shape with Receiver resolution and Receiver Layout matched, the Receiver screen did not place itself properly.
3. Resolved issue when HP RGS remote clipboard feature cannot work, when CATIA started.
4. Resolved issue when CATIA Software exception when connecting through RDP-Clients affected-CATIA SW (Install only).
5. Resolved issue with advance cursors disappearing on some applications.
6. Resolved issue when Sender hangs after unexpected disconnect.

What's new in Release 5.4.7

HP RGS Release 5.4.7 is a release for all supported products and platforms. The following list describes the defect fixes.

Defect fixes:

1. Resolves a Sender deadlock when logging out of the Windows desktop.
2. Resolves a Sender crash when using a USB remote Bloomberg keyboard as an audio playback device.

3. Resolves a multimonitor left edge snap problem.
4. Resolves Linux® USB remote Bloomberg keyboard hang issue.
5. Resolves Japanese font bug for PAM message dialog.

What's new in Release 5.4.6

HP RGS Release 5.4.6 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The HP RGS Sender on Windows Vista and Windows 7 now supports Single Sign-On and Easy Login.
2. The Windows Sender installer enforces prerequisites when enabling Single Sign-On or Easy Login on Windows XP. These are: enable Ctrl-Alt-Del, disable Fast User Switching, and disable AutoLogon.

Defect fixes:

1. Resolves a Sender crash on Red Hat Enterprise Linux® version 6.
2. Resolves a rare Linux® Sender crash during authentication.
3. Resolves a Windows Receiver problem where cursors could be displayed with incorrect colors when the Sender is Linux® or HP-UX.
4. Resolves an occasional Windows Sender deadlock when stealing a desktop session with match layout enabled.
5. Linux® Receiver remote USB support updated for future ThinPro releases.

What's new in Release 5.4.5

HP RGS Release 5.4.5 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The HP RGS Sender and Receiver are supported on Red Hat Enterprise Linux® version 6.
2. The Receiver has new "Experience" controls in the General tab of the Advanced menu. The pre 5.4.5 behavior is Fixed image quality. Beginning with 5.4.5, the Adjust image quality mode will dynamically manage the quality to attempt to maintain the specified minimum update rate. The Sender and Receiver must both be 5.4.5 to enable Adjust image quality mode.

3. The Linux® Sender is supported on VMware ESX virtual machines.
4. Linux® cursor position snap operations are now detected and reflected on the HP RGS Receiver. This behavior is controlled by the property RgReceiver.IsMouseSyncEnabled. The distribution media includes a Blade Workstation virtual audio driver in source form for Red Hat Enterprise Linux® version 4 and 5.
5. The Receiver toolbar can be configured to display automatically when the cursor is near the top edge of the Remote Display Window.
6. The feature is controlled by the Auto show toolbar checkbox in the General tab of the Advanced menu.
7. Added support for Vista and Windows 7 Sender systems where the main display is not placed on the first display.
8. Added color cursor support to the Linux® Sender.
9. Allow the use of X server backing store with the Linux® Sender.

Defect fixes:

1. Resolves a problem with the Sender on Windows 7 where the Windows key + 'L' would not lock the screen.
2. Resolves a problem with the Receiver on Windows where incorrect keys were generated on a Japanese keyboard when entering numbers.

What's new in Release 5.4.2

HP RGS Release 5.4.2 is a release of the Windows Sender and Receiver.

Defect fixes:

1. Resolves a Sender problem on Vista or Windows 7 with some color cursors having an incorrect hotspot when using the GPU display model. The minimum NVIDIA® driver version that supports the GPU display model on Vista has been changed from 178.68 to 182.61.
2. The Windows installers no longer add duplicate firewall exceptions during product updates.
3. Resolves a problem with the Sender where some key sequences such as alt-tab could be missed.
4. Resolves a rare case where the Receiver crashes on startup.
5. Resolves a rare case where the Sender could prevent system shutdown or reboot. This behavior has been seen only on Korean localizations of Vista and Windows 7 in combination with the Korean version of Office 2007.

6. Resolves an occasional Sender crash when using the GPU display model and a session is taken over by a second Receiver.

What's new in Release 5.4.1

HP RGS Release 5.4.1 is a release of the Windows Sender and Receiver.

Defect fixes:

1. Resolves a problem detecting and setting toggle keys (Caps Lock, Num Lock, Scroll Lock) on the Sender. Resolves a problem where the Receiver would not exit when a COM Receiver plugin was installed.
2. Resolves a problem configuring the HP RGS audio driver when installing or updating the Sender from an RDP connection on a blade running Vista or Windows 7.
3. Resolves a problem configuring the mirror driver and USB drivers when updating (not installing) a Vista 64 or Windows 7 64 system.

What's new in Release 5.4.0

HP RGS Release 5.4.0 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The HP RGS Sender and Receiver are supported on Windows 7 Enterprise and Professional platforms.
2. The Windows Receiver now supports file association with a MIME type. Files with the extension ".rgReceiver" are treated as HP RGS Receiver configuration files. When opened, the Receiver is automatically started using the property values specified in the .rgReceiver file.
3. The Windows Receiver has several per-session properties that allow the Receiver to automatically connect to a specified Sender using a specified username and password. PAM authentication is not supported. When connecting to a Linux® Sender the username and password properties are ignored.
4. The Receiver has a new command line option "-config filename", which specifies the name of an HP RGS Receiver configuration file.
5. The default value of the property.
6. RgSender.Network.IsListenOnAllInterfacesEnabled is now 1 (enabled). The default value of RgSender.Network.Interface.0.IsEnabled is now 0. In addition to listening on all interfaces by default, the Sender will listen on interfaces that are added or changed after the Sender has started.
7. The Sender and Receiver include a lossless

CODEC=JPEG-LS. The codec is selected with the property RgSender.ImageCodec.Preferred=JPEG-LS.

8. The Sender GUI for Linux® Senders now appears in the system tray instead of on the desktop.
9. Single Sign-On does not require enabling Ctrl-Alt-Del to login.
10. The Linux® Receiver installer includes support for audio without manually building optional libraries.
11. The Linux® Sender installer disables the Composite extension as part of the X server configuration.
12. The Windows Sender installer adds firewall exceptions for the Sender.
13. The Windows Sender/Receiver support relative mouse moves for applications that manage the pointer location explicitly. The feature is toggled by the “g” hotkey on the Receiver.

Defect fixes:

1. The Comparitron display model now correctly displays cursors on a secure desktop and does not display cursors that are hidden.
2. Resolves a Linux® Sender abort upon login triggered by the “KillInitClients” behavior of desktop managers.
3. Japanese keyboard layouts on Linux® Receivers will now process the Yen symbol.
4. The Windows rgSender service now respects the Service Control Manager recovery settings on Windows XP.
5. The Sender clipboard now supports the same formats on Vista as it does on Windows XP.

What’s new in Release 5.3.3

HP RGS Release 5.3.3 is a release of the Windows Sender for HP SkyRoom. This is a defect fix only release.

Defect fix:

1. Resolves a rare case where the Sender could prevent system shutdown or reboot. This behavior has been seen only on Korean localizations of Vista and Windows 7 in combination with the Korean version of Office 2007.

What’s new in Release 5.3.2

HP RGS Release 5.3.2 is a release of the Windows Receiver. This is a defect fix only release.

Defect fix:

1. Resolves an incorrect key generated by the shift-\ key sequence when using a Japanese keyboard.

What’s new in Release 5.3.1

HP RGS Release 5.3.1 is a release for Windows Sender and Receiver with installer changes for HP SkyRoom. Functionality is the same as 5.3.0.

What’s new in Release 5.3.0

HP RGS Release 5.3.0 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The HP RGS Sender is supported on Windows Vista Business and Enterprise platforms.
2. Linux® Sender supports bi-directional Cut and Paste operations. This support is for text only.
3. Support of Swedish keyboard localization.
4. Simplification of HP RGS licensing. There are now two types of licenses for HP RGS: HP RGS_VDI which supports VMware and HP RGS_General which supports all other systems (including non-HP hardware running Windows).

Defect fixes:

1. Windows Sender supports large cursors (greater than 64x64).
2. Linux® Receivers on a system that does not support the X server MIT-SHM extension will correctly display setup mode, networking connection warnings and remote cursor tracking.
3. Exiting the Linux® Sender will not leave the rgSender process in the zombie state.
4. Resolves intermittent failure when starting the Windows Sender GUI.
5. Resolves intermittent problems when transitioning between RDP and HP RGS.
6. Resolves an authorization problem when connecting.
7. Windows Receiver correctly displays masked color cursors and monochrom cursors of sizes not divisible by 4.

What’s new in Release 5.2.7

HP RGS Release 5.2.7 is a release of the Windows Sender. The following list describes the new defect fix.

Defect fix:

1. Resolves an inability to run the Sender after a reboot when connected to a Windows domain.

What’s new in Release 5.2.6

HP RGS Release 5.2.6 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The behavior of the image codec can be changed to lower network bandwidth and CPU utilization at the expense of image quality. The behavior is controlled by the “Boost” checkbox in the Remote Display Window Toolbar and the property RgReceiver.ImageCodec.IsBoostEnabled.
2. The Receiver Display View Window can be iconified with the “n” hotkey and disconnected with the “c” hotkey.
3. Windows Receiver now supports auto-remoting of specific USB devices. Auto remoted devices are used locally on the Receiver and automatically remoted to the Sender when an HP RGS connection is established.

Defect fixes:

1. Resolves a bluescreen on the Sender when connecting from Receiver with USB devices attached prior to connecting.
2. Resolves an inability to establish an HP RGS connection after connecting to the same Sender with RDP and allowing the screensaver to start.
3. Logoff from a Linux® Sender disconnects the Receiver correctly instead of waiting for expiration of the network timeout.
4. Resolves a Windows Sender hang with simultaneous access of composite or multiple USB devices.
5. Windows rgSender and Receiver executables are now signed for compatibility with strict anti-virus programs.
6. Resolves a green cast when using a Linux® Sender configured with a 16 bpp TrueColor visual.

What’s new in Release 5.2.5

HP RGS Release 5.2.5 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The port used for communication between the Sender and Receiver can be changed with the Sender property RgSender.Network.Port.
2. Windows cursor position snap operations are now detected and reflected on the HP RGS Receiver. This behavior is controlled by the property RgReceiver.IsMouseSyncEnabled.
3. The hostname of the Receiver system for each connection is now logged in the HP Remote event log of the Sender system.
4. The default Sender maximum update rate is now 30 updates per second instead of unlimited to reduce network bandwidth and CPU utilization. To reinstate previous behavior, set RgSender.MaxImageUpdate=0.

Defect fixes:

1. The HP RGS Sender respects Windows commands to hide the cursor. This eliminates a double cursor seen in several applications.
2. Resolves intermittent startup of the Sender GUI on Linux® systems.
3. Resolves a Sender hang on RHEL4 Linux® systems.
4. Improved Support for DirectDraw applications on non-primary displays.
5. The HP RGS Receiver now shuts down cleanly if a connection client terminates unexpectedly.
6. Resolves an authentication problem when using Easy Login.

What's new in Release 5.2.4

HP RGS Release 5.2.4 is a release of the Windows Receiver and Sender. The following list describes the fix.

Defect fix:

1. HP RGS Sender running on a Blade PC would incorrectly attempt to acquire a Blade Workstation license. The fix corrects rgSender so that it requests a Blade PC license when running on Blade PC hardware.

What's new in Release 5.2.3

HP RGS Release 5.2.3 is an early access release of the Windows Sender.

What's new in Release 5.2.2

HP RGS Release 5.2.2 is a release of the Windows Receiver.

New feature:

1. Add support for the LLC504 Penpower HID device.

Defect fixes:

1. Receiver USB hub filter driver signed for Vista 64.
2. Thin Client no longer re-enumerates USB bus on subsequent reboots once HP RGS Receiver is uninstalled.

What's new in Release 5.2.1

HP RGS Release 5.2.1 is an early access release of the Windows Sender and Receiver for use only with the HP SkyRoom product.

What's new in Release 5.2.0

HP RGS Release 5.2.0 is a release for all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The Sender uses FlexLM to enable license validation. For information regarding HP RGS use of FlexLM, please refer to the "HP Remote Graphics Software Licensing. Guide" by visiting hp.com/support/RGS_manuals.
2. HP RGS supports USB audio devices and USB video devices. For more information regarding all of the new devices that are now supported, please refer to the "HP Remote Graphics Software 5.2 User Guide" by visiting hp.com/support/RGS_manuals.
3. The Linux® Sender supports Norwegian keyboards.
4. The Windows Sender supports Traditional Chinese, Korean, and Russian keyboards.
5. The Linux® Sender supports remote audio for devices that support audio capture. See the documentation for details.
6. HP RGS supports Sender-to-Sender cut & paste. Cut & paste is supported between Windows Senders only. There is no cut & paste support for any Linux® Sender. The Linux® Sender supports match Receiver resolution.
7. The Receiver supports Windows Vista.

Defect fixes:

1. Developers using the HP RGS SDK may have experienced a crash when calling "Stop" using the COM automation interface. This has been fixed.
2. Developers using the HP RGS SDK may have experienced an intermittent hang when running under COM automation. This has been fixed.

3. Developers using the HP RGS SDK may have experienced a crash in the Receiver when the user has an expired password in COM automation mode.
4. Resolved a hang when the second display on the Sender is set as the primary display.

What's new in Release 5.1.6

HP RGS Release 5.1.6 is a release of the Linux® Sender and Windows and Linux® Receivers. This is a defect fix only release.

Defect fixes:

1. With Linux® Senders, screen resolution changes initiated by applications executing on the Sender system are now handled correctly.
2. Enablement for Linux® Senders on the xw2x220c blade. Older versions of the Sender will cause this blade to hang or reboot.
3. In a SAM environment, resolves a Receiver crash that could occur when the connection client stops the Receiver application.
4. In a SAM environment, resolves an issue that causes the Receiver to exit after displaying a dialog box. This issue can be encountered when connecting to a system as a user whose password is expired. The symptom is that the change password dialog is never displayed.
5. Resolves a defect with borderless window placement in RHEL5.

What's new in Release 5.1.5

HP RGS Release 5.1.5 is a release of all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The Receiver will now be able to connect to a Sender that resides behind a router that uses Network Address Translation.
2. Support was added for the Swiss French, Czech Qwerty and Czech Qwertz keyboards.
3. The IP address of the Receiver system for each connection is now logged in the HP Remote event log of the Sender system.
4. Support has been added for Red Hat Enterprise Linux® Version 5.2 on 64-bit x86 architectures, with the Receiver also being supported on 32-bit x86 architectures.

Defect fix:

1. Numerous screen-blanking defects have been fixed: 1) Multi-monitor Senders now blank all screens, 2) monitors are more

reliably unblanked when HP RGS disconnects, 3) Blanking is now supported on Windows XP 64.

What's new in Release 5.1.4

HP RGS Release 5.1.4 is a release of the Windows Sender only. This release resolves a defect with the Windows Sender.

Defect fix:

1. Resolved an intermittent crash in the Windows Sender that could occur after a Receiver disconnect.

What's new in Release 5.1.3

HP RGS Release 5.1.3 is a release of all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The Sender is no longer supported on Novell SUSE Linux® Enterprise Server 9.
2. The Receiver is now supported on Red Hat Enterprise Linux® Version 4 for 32-bit x86 platforms in addition to 64-bit x86 platforms.
3. HP RGS Performance has been improved in a high latency environment.
4. A Remote Microphone is now supported in HP RGS.
5. Cut and paste has been added that will allow copying between the Receiver and Sender clipboard on Windows platforms.
6. Command line options have been added to the installers for the Windows Receiver and Sender that enable easier automated installs.
7. Dynamic USB Session switching has been enabled. In previous versions of HP RGS, you must select the Sender to use with remote USB before establishing any connections. Now you may change the Sender for USB while connections are active.
8. The HP RGS installers have been enhanced to create an installer log file when the HP RGS Sender and HP RGS Receiver are installed. The install is logged to the files C:\TEMP\rgSenderInstaller.log and C:\TEMP\rgReceiverInstaller.log for the Sender and Receiver, respectively.
9. Smart cards are now supported via the HP System Allocation Manager (SAM).
10. Support for resolution matching on systems with multiple displays has been added.

Defect fixes:

1. An issue with the Linux® Sender failing to listen for connections on InfiniBand and other non-ethernet devices has been resolved. NIC Binding on a Linux® Sender will now behave more similar to NIC Binding on a Windows Sender.
2. The Easy Login feature now works more reliably in a Novell Netware Environment.
3. An issue with the Sender sometimes failing to start on Windows XP after a system reboot has been resolved.
4. An issue where certain custom trader keypads could cause the Receiver to hang has been resolved.

What's new in Release 5.1.2

Release 5.1.2 is a release of the HP RGS Receiver on all supported platforms. The following list describes the new defect fix.

Defect fix:

1. Performance when using a multi-monitor setup has been improved.

What's new in Release 5.1.1

HP RGS Release 5.1.1 is a release of all supported products and platforms. The following list describes the new features.

New features:

1. The HP RGS Sender now supports remote audio and remote USB on Windows XP 64.
2. The HP RGS Receiver now supports remote USB on Windows XP 64.
3. The HP RGS Sender for Windows now has better support for multi-monitor configurations.
4. The HP RGS Sender may now be installed from within a Microsoft Remote Desktop Connection.

What's new in Release 5.1.0

HP RGS Release 5.1.0 is a release of all supported products and platforms. The following list describes the new features and defect fixes.

New features:

1. The HP RGS Sender supports the ability to specify which network interfaces are used to accept connections from HP RGS Receivers (this is called NIC Binding). The default behavior is to listen on the "first" network interface reported by the operating system.

2. The Receiver and Sender are now supported on Red Hat Enterprise Linux® Version 4 for 64-bit x86 platforms.
3. Support for changing expired passwords on a windows Sender has been added. In previous versions of HP RGS, once a user's password expired, the Receiver would display an Authentication Failed dialog. Now, the user is allowed to change their password and complete the connection to the Sender.
4. A new product, HP RGS PC, is available. It is targeted at the commercial desktop PC usage model. The original HP RGS Workstation version is targeted at the high performance workstation usage model.

Defect fixes:

1. An issue with HP RGS/RDP interoperability has been resolved that would sometimes not allow future HP RGS connections after a Remote Desktop connection.
2. An issue with the biometric device on Bloomberg keyboards has been resolved.
3. Disconnects that could occur when multiple remote USB storage devices are simultaneously connected and copying large amounts of data has been resolved.

What's new in Release 5.0.0

HP RGS Release 5.0.0 is a major release. The following list describes the new features and defect fixes.

New features:

1. Remote USB support for a wide variety of new USB devices has been added. The list of supported USB devices in HP RGS is available at the following URL: hp.com/go/RGS.
2. Remote USB support has been added to the HP RGS Receiver for Windows. Remote USB continues to be supported on a HP Blade Workstation Client and HP RGS Sender for Windows.
3. USB Access Control List (ACL) has been added to the HP RGS Sender for Windows.
4. USB device connects, disconnects, and denied devices are logged by the HP RGS Sender for Windows in the Windows Event Log.
5. Performance of the graphics image processing algorithms have been improved by up to 2X.
6. Console blanking blacks out the screen of a monitor attached to the Sender if a monitor is connected and the primary user is connected. Note, this is only supported for specific graphics adapters and hardware

- platforms. See the User's Guide for more details. If it is not possible to blank the monitor, a warning dialog will be displayed on the desktop to inform the user of the possibility of eavesdropping. In previous releases if a monitor was attached to the system running the HP RGS Sender, the monitor was not blanked. The HP RGS Sender property "RgSender.IsBlankScreenAndBlockInputEnabled" is provided to disable blanking.
7. The HP RGS Receiver can be used to automatically adjust the display resolution of the Sender system to match the display resolution of the Receiver system if possible.
 8. Support for the following keyboards has been added when using the HP RGS Sender for Windows in combination with any new HP RGS Receiver.
 - a. Brazilian Portuguese
 - b. Portuguese
 - c. French Belgian—Français (Belgique)
 - d. Simplified Chinese
 - e. Dutch Nederlands
 - f. Turkish-Q
 - g. Latin American Spanish
 - h. Japanese
 9. Support for Novell SUSE Linux® Enterprise Server 9 on AMD64 and Intel64 processor platforms has been added for the HP RGS Sender for Linux® on HP Blade Workstations only. The HP RGS Sender for Linux® on x86 processor platforms has been delayed until a future release. The HP RGS Sender for Linux® is not supported on non-HP platforms.
 10. Support for the HP RGS Sender for Linux® on all versions of Red Hat Linux® has been delayed until a future release. Previously, the HP RGS Sender for Linux® was supported on Red Hat Enterprise Linux® WS3 32-bit & 64-bit.
 11. Support for Linux® Receivers has been delayed until a future release.
 12. The Linux® Sender installers have been improved to automatically configure the PAM configuration files, XF86Config and xorg.conf files.
 13. The HP RGS connection will not be disconnected until after log off has been fully completed when using the HP RGS Sender for Windows when either Easy Login (ELO) or Single Sign-On (SSO) is enabled if the Sender property RgSender.IsDisconnectOnLogoutEnabled=1 is set to the default value. In previous releases the disconnect may occur early and not allow the user to close applications or the Windows log off sound may be prematurely cut-off.
 14. Users with Administrator privileges can now connect to a HP RGS Sender for Windows when the desktop is locked. Then they can log off the logged in user and then login as a different user. In previous releases it was not possible for a different user to connect to another users locked desktop.
 15. If a user is connected as User A and the property IsDisconnectOnLogoutEnabled=0 and the user logs off, the connection will not be disconnected. When another user logs in using the same HP RGS connection, for example as User B, the connection will be allowed to persist if Single Sign-On or easy login is active and easy login is supported by default or force enabled. Previously, the connection would be disconnected.
 16. The rgadmin utility has been enhanced to allow the HP RGS Sender GINA module (hprgina.dll) to be chained with other third party GINA modules.
 17. All Receiver properties now have an "IsMutable" suffix specifier which allows the corresponding user-interface controls to be deactivated when disabled.
 18. The HP RGS Sender for Windows is now supported on the HP BladeSystem bc2000 and bc2500.
 19. HP RGS for HP-UX has been discontinued.

Defect fixes:

1. A defect where the screen could become corrupt if the display properties have been configured to enable "Microsoft Windows Dual Screen" on a Sender running on a Windows system has been resolved.
2. If Single Sign-On (SSO) is active and the same user connects using another Receiver while their previous connection is open, the previous connection will be disconnected without locking the desktop. Previously, the desktop would always be locked and the user would be required to enter their credentials again to unlock the desktop.
3. The rgdiag utility has been extended to detect Windows Firewall Group Policies in addition to firewall policies set through the Windows Firewall Control Panel Applet.
4. The default key repeat behavior has been modified in the HP RGS Receiver for Linux® from issuing ((down, up), (down, up), ...) key sequences to issuing (down, down, down, ...) key sequences. This may allow applications such as the Pinball application on Windows to work correctly.

5. Non-US characters in a user name, password or domain dialog/field now work. In previous releases non-US characters may have failed.

Known issues and limitations

- The Aero desktop is supported on Windows Vista and Windows 7 Senders only with NVIDIA® graphics cards that have native DX10 support. Windows Vista systems require driver version 182.61 and later. Windows 7 systems require driver version 191.56 and later.
- Vista and Windows 7 will perform session operations that are outside the control of HP RGS. When HP RGS displaces an existing RDC connection, the desktop may enter into a temporary logged in and unlocked state due to these operations. The user should exercise caution in situations where even a temporarily unlocked desktop is a security concern. This issue can be avoided by logging out of the RDC connection before establishing an HP RGS connection.
- The HP RGS Sender does not support video overlay planes. Some media players that use video overlay planes will not be displayed properly. This can often be resolved by disabling the use of video overlay planes in the media player.
- When a password is not set on a Windows Sender you will not be able to authenticate. To resolve this you must set a password.
- If gamma correction is being applied on the Sender, it will not be applied in the Receiver.
- Full-screen crosshair cursors on Linux® Sender are not visible. Please refer to the User's Guide under Troubleshooting Known Issues and Limitations for additional information and workarounds.
- Starting the X Server manually using "startx" is not supported with HP Remote Graphics using a Linux® Sender because startx does not support Pluggable Authentication Module (PAM) session management.
- The HP RGS Sender for Linux® does not support the experimental Xgl server.
- The HP RGS Sender for Linux® does not support AIGLX.
- Full-screen Windows applications, such as DOS prompts and games, are not supported. If you attempt to open a full-screen DOS window, the window will be reset to the normal size.
- The Linux® Sender does not correctly remote applications using ARGB visuals presented by the Composite extension. As of 5.4, the customization step of the install process disables the extension. These visuals can

be hidden from an application by setting the environment variable `XLIB_SKIP_ARGB_VISUALS=`The visuals can be completely removed by disabling the Composite extension.

- The Linux® Gnome Desktop Manager interferes with Linux® match Receiver resolution. The GDM login screen does not repaint as expected when the screen is resized due to match Receiver resolution. GDM can store screen resolution preferences on a per-user basis. The resolution can be changed by GDM upon user login.
- Windows Sender screen blanking can fail silently on devices that report success of the `SetDeviceGammaRamp` call but do not actually succeed. Setting brightness or gamma with device control panel applications can make blanked displays viewable.
- The input method editor has been disabled in the password field of the HP RGS authentication dialogs. To enable

the IME, see the property `RgReceiver.IsInputMethodForPasswordFieldEnabled`.

- A Receiver log file may not be generated for a user if their username contains a non-ascii character. A log file location with only ascii characters may be specified in the 'Logging' tab of the HP RGS Receiver GUI.
- When an HP RGS sessions ends, it is possible that the Sender monitor will remain blanked. The problem can be resolved by connecting again with HP RGS and then disconnecting normally.
- When using NVIDIA® graphics with 10-bit monitors, older drivers can cause the image to have color problems. This issue can be resolved by setting a property. Some recent NVIDIA® drivers solve this problem.
- On Windows touch devices, increasing the Sender display resolution while connected can cause problems with tapping the confirm resolution dialog box. Use the virtual mouse to click the button.

Security issues

- If User A connects to a system and then logs in as another user then User A will be disconnected, but the system will now be logged in. Currently, on a login event, all users that do not match the user logging into the system are disconnected by design.

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