



# **Connection Broker**

**Where Virtual Desktops Meet Real Business**

## **Release Notes**

Version 7.0, 6.x  
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## Connection Broker 7.0.104 – Release Notes

Connection Broker 7.0.104 is an update to Connection Broker version 7.0.97. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker. Follow the instructions in [Updating Connection Broker Clusters](#) when updating a cluster of Connection Brokers.

### Component Updates

The following updates for Leostream Connect and the Leostream Agent are available in the Connection Broker > **Status** > **Downloads** page. These are updates to the minor versions previously available only on the Leostream Web site. See [Leostream Client and Leostream Agent Update](#) for a list of features in these versions.

- **Leostream Connect 2.7.135** – Supports Connection Broker option to log out user from the client when user closes their last resource connection.
- **Leostream Agent 5.0.142** – New installation command line parameters to specify the Leostream Agent port.
- **Leostream Connect 2.1.245** – New `lc.conf` parameter to specify that client should automatically exit after the user closes their last resource connection.

### Feature

- New option on the > **System** > **Settings** page allows you to specify that the Windows version of Leostream Connect should automatically log out the user after they close (disconnect or log out) of their last resource connection.

### Resolved Issues

The following list contains a sample of the issues resolved in this update. For information regarding these, or other, issues, please contact [support@leostream.com](mailto:support@leostream.com).

- Fixed duplicate detection issues for desktops with stale IP addresses.
- Changes to the setting for the **Adjust time zone to match client** option in policies now correctly save when you save the policy.
- The **Authentication Server** permission in Connection Broker Roles now correctly supports selecting **Full** for the **Load Users** option.
- Resolved issues with adding and removing local users from the Windows Remote Desktop Users group.
- No longer receive database errors when deleting a group of users that are currently assigned to desktops.
- Resolved issues related to pools created using the **is equal to** conditional.

## Connection Broker 7.0.97 – Release Notes

Connection Broker 7.0.97 is an update to Connection Broker version 7.0.96. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker. Follow the instructions in [Updating Connection Broker Clusters](#) when updating a cluster of Connection Brokers.

## Resolved Issue

This update resolves a critical issue when provisioning new desktops in VMware using a Guest OS customization specification file that does not have the `GuiRunOnce` command. If you receive an error similar to the following when provisioning new VMs from your Connection Broker, please update to version 7.0.97.0.

```
CloneVM returned "Can't call method "serialize" on unblessed reference at
/usr/lib/perl5/site_perl/5.8.8/VMware/VISTub.pm line 337.
```

## Connection Broker 7.0.96 – Release Notes

Connection Broker 7.0.96 is an update to Connection Broker version 7.0.84. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker. Follow the instructions in [Updating Connection Broker Clusters](#) when updating a cluster of Connection Brokers.

### Component Updates

The following updates for Leostream Connect and the Leostream Agent are available in the Connection Broker > **Status** > **Downloads** page. These are updates to the minor versions previously available only on the Leostream Web site. See [Leostream Client and Leostream Agent Update](#) for a list of features in these versions.

- **Leostream Connect 2.7.129** – Windows version: Bug fixes related to XyLoc integration
- **Leostream Agent 5.0.139** – Windows version: Logging improvements and minor fixes
- **Leostream Connect 2.1.237** – Java version: Improvements to auto-discovering methods used to find the Connection Broker address.
- **Leostream Agent 1.3.201** – Java version: Start-up scripts now support `JAVA_BIN` path

### Resolved Issues

The following list contains a sample of the issues resolved in this update. For information regarding these, or other, issues, please contact [support@leostream.com](mailto:support@leostream.com)

- When using Wake-on-LAN to power on physical desktops, the Connection Broker now sends Wake-on-LAN packets to multiple broadcast addresses in an attempt to reach every possible subnet, including all subnets on the Connection Broker address, the Connection Broker gateway address, and the desktop IP address.
- Guest OS customization specification files that contain special characters, such as the letter c with a cedilla below it, can now be used when provisioning new desktops in a Leostream pool.
- Webhooks entered in the **URL to call** fields are now consistently called for policy and hard-assigned desktops connected to from Wyse client devices.
- Properly register new client devices, to avoid creating duplicate client entries.
- When creating pools using a criteria of **is equal to** and using an internal Connection Broker database, the search string is no longer case sensitive. Therefore, pools created using the **is equal to** criteria now have the same content if you are using a Microsoft® SQL Server® 2005 or 2008 database or an internal Connection Broker database.
- The `REMAPPED_IP` dynamic tag now correctly remaps IP addresses for desktops that have a DNS name in the **Hostname or IP address** field.
- The Connection Broker now queries the status of newly provisioned virtual machines to ensure that the network is connected before taking a snapshot of the VM.

## Points of Interest

- The formatting for the **Wyse Configuration** section of the **Protocol Plans** has changed, as follows.
  - Ensure that each parameter name and value pair is on a single line
  - Begin the line with the hash or pound (#) symbol to insert a comment
  - Use the Leostream dynamic tags to set session specific variables

In addition, the Connection Broker now automatically adds any required quotation marks around the values for the `application`, `username`, and `password` WTOS variables.

- If a power down or reboot is requested for a VMware virtual machine that does not have a running version of VMware Tools, the Connection Broker now attempts to power control that VM using the Leostream Agent, if an agent is present. Before this release, a VMware VM that did not have a running version of VMware Tools could not be rebooted.
- Authentication server names are no longer case sensitive. If an authentication server in the Connection Broker is named `Leostream`, a user can enter `leostream`, `Leostream`, or `LEOSTREAM` to be authenticated against that domain. Before this release, the user was required to enter `Leostream` to match the case of the authentication server.
- The **Test Login** results now indicate if a user's role prevents them from power controlling desktops assigned from a pool of restartable desktops..

## Database Changes

Version 7.0.96 adds fields to the following tables in the Connection Broker databases.

- `general_config`

In addition, to avoid SQL Server indexing errors when fields exceed 900 characters, any database field that allowed more than 900 characters are now limited to 900 characters.

# Connection Broker 7.0.84 – Release Notes

Connection Broker 7.0.84 contains critical updates for the following components.

- **Leostream Connect 2.7.120** – Windows version: Updated OpenSSL components to version 1.0d
- **Leostream Agent 5.0.129** – Windows version: Updated OpenSSL components to version 1.0d

# Connection Broker 7.0.83 – Release Notes

Connection Broker 7.0.83 is an update to Connection Broker version 7.0.53. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker. Follow the instructions in [Updating Connection Broker Clusters](#) when updating a cluster of Connection Brokers.

## Features

- **Component Updates:** The following updates for Leostream Connect and the Leostream Agent are available in the Connection Broker > **Status** > **Downloads** page. These are updates to the minor versions previously available only on the Leostream Web site. See [Leostream Client and Leostream Agent Update](#) for a list of features in these versions.
  - **Leostream Connect 2.7.117** – Windows version: New integration with Ensure Technologies XyLoc proximity products.
  - **Leostream Agent 5.0.127** – Windows version: Improved handling of Connection Broker registrations.
  - **Leostream Connect 2.1.222** – Java version: Improvements for HP RGS connections.
  - **Leostream Agent 1.3.200** – Java version: Improved handling of HP RGS sessions, including logging out rogue users.
- **Red Hat Enterprise Virtualization for Desktops (beta):**
  - New Red Hat Enterprise Virtualization Manager centers allow the Connection Broker to natively inventory, power control, and assign virtual machines hosted in RHEV-H
  - Protocol plans now allow SPICE connections to virtual machines hosted in RHEV-H
- **Citrix XenDesktop Support (beta):**
  - The Connection Broker can now deliver resources offered to a user by a Citrix XenApp Services Site.
  - New Citrix XenDesktop centers allow the Connection Broker to push desktop assignments to a Citrix Desktop Delivery Controller to provide HDX connections to resources offered by Leostream.
- **Microsoft RemoteFX Support:** Protocol plans are now configured, by default, to use RemoteFX technologies, when supported by the client and remote desktop.
- **Failover Desktops and Plans:**
  - The **Edit Desktop** page allows individual desktops to be assigned a failover desktop to launch in the event the user's primary desktop becomes unavailable at connect time.
  - Failover plans can be configured to notify the user when their primary desktop fails over to the desktop's specified failover desktop.
- **Backup Pools:**
  - The primary desktop's availability at offer time can now be determined based on a remote viewer port check or as a Leostream Agent port check.
  - The Connection Broker now offers desktops from the backup pool to all client types. Previously, only the Leostream Web client utilized the backup pools.
  - Desktops that are marked as **Unreachable** are now offered to users; **Unreachable** desktops

are automatically reset to **Available** upon user login.

- **Authentication:**
  - The Connection Broker now performs an anonymous bind to LDAP servers if the user name and password fields are blank in the **Create Authentication Server** and **Edit Authentication Server** forms.
  - The **Match login name against this field** option on the **Create Authentication Server** and **Edit Authentication Server** forms is now an edit field, allowing you to specify any valid user property for user login and authentication.
  - The **Connection Settings** section of the **Create Authentication Server** and **Edit Authentication Server** forms has changed to improve usability.
  - The Connection Broker can now authenticate using an NIS server.
- **Performance:** The **> System > Settings** page contains a new option to limit the number of simultaneous server requests
- **Leostream Connect Startup Message:** The optional startup message for Leostream Connect now has a user-configurable dialog title.
- **Uncategorized Desktops Center:** A new refresh interval is available for checking the power status of desktops registered in the Uncategorized Desktops center.
- **Web Hook Support:** Release plans contain new **URL to call** fields that allow you to execute a WebHook after the user logs out or disconnects from their desktop.
- **Leostream Web Client:** The Leostream Web client now provides an option to display offered resources in a list, in addition to a grid of large icons.
- **Multi-User Linux:** You can now use the Remote Desktop Services center type to manage Linux NoMachine NX servers used by multiple users.
- **Locations:** Client locations can now be created based on the number of attached displays.
- **Desktop power state:** The new **Confirm desktop power state** option instructs the Connection Broker to check the power state of the remote desktop before trying to connect the user to that desktop.
- **Dynamic Tags:** The `{CLIENT:UUID}` dynamic tag has been added.
- **Logs:**
  - Entries in the **> System > Log** page now display the client device associated with the log entry, where applicable.
  - Logs now contain details pertaining to the protocol selection for a resource connection.
  - Improved log messages now indicate what user session information is returned by Leostream Connect and the Leostream Agent.
- **Leostream Client COM API:** A Leostream Client COM API is now available. You can use this API to develop Microsoft® Windows PowerShell™ scripts that simulate user logins. For more information, please contact [sales@leostream.com](mailto:sales@leostream.com)
- **Usability:**
  - Desktops published by a Citrix XenApp center are now presented to end users in the list of desktops, instead of with applications, in the Leostream Connect and Leostream Web clients.

- Editable drop-down menus replace standard drop-down menus for large lists, allowing you to search for items that begin with a specified string.

## Resolved Issues

The following list contains a sample of the issues resolved in this update. For information regarding these, or other, issues, please contact [support@leostream.com](mailto:support@leostream.com)

- Web query commands no longer result in errors.
- The Connection Broker can now locate newly provisioned machines based on MAC address, which improves performance in environments with slower vCenter Server environments.
- Local users that are automatically added to Linux desktops by the Connection Broker are no longer case sensitive.
- The work queue job `hda_scan` has been separated into three simultaneous work queue jobs to speed up Leostream Agent status and duplicate machine detection.
- The Connection Broker now correctly replaces the dynamic tag `{CLIENT:MAC}` with the MAC address of the user's client, for clients that return their MAC addresses.
- The Web Hook entered in the policy **URL to call at start of session** field now accepts `{CLIENT:XXX}` dynamic tags.
- Bulk uploading users on the **> System > Maintenance** page no longer blocks the upload after the license limit is met.
- The **When Connection is Closed** section of a release plan is now correctly handled for HP RGS connections.
- Portuguese characters are now correctly displayed in the **> Users > Assignments** page.
- The **Attribute** field in the Assignments table associated with an Authentication Server now supports matching against a user's `leostream_dn` property.

## Points of Interest

- The `LEO_FULLSCREEN` dynamic tag for Wyse protocol plans has been deprecated. Hard-code any instances of the `LEO_FULLSCREEN` dynamic in protocol plans with the value `yes` or `no`, depending on if the remote session should span multiple monitors.
- The default **Configuration file** for Juniper SSL VPN connections in a Protocol Plan has changed to use the Juniper dynamic tags for username and password. Using Juniper dynamic tags allows you to hide the username and password in the URL that launches the remote desktop connection.

To change existing protocol plans, please replace the following dynamic tags:

Replace `{USER}` with `<USER>`

Replace `{PLAIN_PASSWORD}` with `<PASSWORD>`

- Many options on the **Edit Policy** page have changed from checkboxes to drop-down menus.
- The following pages have been renamed in the Connection Broker Administrator Guide
  - The **> System > General Configuration** is now **> System > Settings**
  - The **> System > Network Configuration** is now **> System > Network**
  - The **> System > Remote Backup** is now **> System > Backup**

## Database Changes

Version 7.0.83 adds fields to the following tables in the Connection Broker databases.


- `client`
- `log`
- `plan_protocol`
- `plan_release`
- `policy`

## Leostream Client and Leostream Agent Update

The following new versions of the Leostream Connect clients and Leostream Agent components are now available. These versions are currently available as downloads from the Leostream Web site. Minor updates to these versions will be included in future updates to the Connection Broker.

## Leostream Connect for Microsoft® Windows® Operating Systems – Version 2.7.95

### Features

- **USB drivers:** Leostream Connect 2.7 includes a new version of the USB drivers used for USB device redirection. These new drivers are compatible with the USB drivers in version 5.0 of the Leostream Agent for Windows desktops and version 1.3 of the Leostream Agent for Linux desktops, enabling USB device redirection from Windows clients to Linux remote desktops.  
 These new drivers are not backwards compatible. You must upgrade the Leostream Agents on all remote desktops, if you are using Leostream USB redirection.
- **USB port:** The default port for USB redirection has changed from 32032 to 20020.
- **Install options:**
  - New option to indicate if the Microsoft Visual C++ run-time libraries should be installed. Uncheck this option only if the desktop already has an installed Microsoft VC++ runtime environment.
  - The **About** tab on the **Options** dialog now indicates which tasks were selected during installation.
- **Command line installation:**
  - New options to specify the Connection Broker address and port. See the [Leostream Installation Guide](#) for more information.
- **Command line execution:**
  - New `shell` command line parameter to start Leostream Connect in shell mode.
- **VNC:** Added support for TightVNC version 2.0

- **Smartcard support:**
  - Added 64-bit support to PKCS smartcard provider detection
  - Leostream Connect now refreshes the user's offered desktops when the user reinserts their smartcard.
- **Environment variables:** Support for environment variables in **Command line parameter** fields set in Connection Broker protocol plans.

## Leostream Connect for Linux® – Version 2.1.154

### Features

- **USB redirection:** Leostream Connect 2.1 provides complete support for USB redirection to Windows remote desktops with an installed Leostream Agent 5.0 and Linux remote desktops with an installed Leostream Agent 1.3.
- **Sidebar menu:** The sidebar menu, when enabled, can now be opened along any edge of the display. Previously, the sidebar menu only appears on the left edge of the display.
- **Resource dialog:** The resource selection dialog can now be resized, and the initial size can be set using the `resource_dlg_size` configuration file parameter.
- **Log viewer:** The graphical log viewer has been redesigned and is now always accessible. The `log_viewer_visibility` configuration file parameter has been deprecated.
- **Shell environment variable support:** The following environment variables can now be used for command line parameters in the user's protocol plan. Leostream Connect replaces these variables, as follows.

`$LOGNAME`, `$USER`, and `$UID` are mapped to the user's login name  
`$HOME` is mapped to the user's Home directory  
`$TZ` is mapped to the user's time zone

- **lc.conf file:**
  - The `trace_levels` parameter for the `lc.conf` file has been renamed to `TraceLevel`.
  - The `lc.conf` file is now modifiable by all users, by default.
- **Hotkey sequence:** When running Leostream Connect as an administrator, the hotkey sequence `CTRL+SHIFT+X` opens a confirmation prompt to exit Leostream Connect.
- **Sun Ray support:**
  - The installer now allows you to select the windows manager used on the Sun Ray server
  - Added `-DkillSession=$SUNRAY_SESSION_TOKEN` command line option to kill a particular Sun Ray session
  - Modified Sunray startup script to execute Leostream Connect with `killSession` option when `utaction` is called on disconnect
- **Installation:**
  - When installing as `root` and not installing on a Sun Ray server, the permission for `lc.conf`, `LeostreamConnect.jar` and `LeostreamInstaller.jar` now allow access for all users.

- When installing as root, the `leostreamconnect.release` file is now copied into the `/etc` directory.

## Leostream Agent for Windows – Version 5.0.99

### Features

- **USB drivers:** Leostream Agent 5.0 includes a new version of the USB drivers used for USB device redirection. These new drivers are compatible with the USB drivers included in version 2.7 of the Leostream Connect for Windows clients and version 2.1 of Leostream Connect for Linux clients, enabling USB device redirection from Linux clients to Windows remote desktops.



These new drivers are not backwards compatible. You must upgrade Leostream Connect on all client devices, if you are using Leostream USB redirection.

- **USB port:** The default port for USB redirection has changed from 32032 to 20020
- **Installation:**
  - New command line options to specify the Connection Broker address and port (see the [Leostream Installation Guide](#) for more information)
  - The Leostream Agent no longer automatically starts if the installation requires a restart to complete, but the desktop was not restarted.
- **Desktop attributes:** The Leostream Agent can now report to the Connection Broker the desktop's computer model, serial number, and maximum CPU speed
- **Options dialog:** The **About** tab in the Leostream Agent Control Panel dialog now indicates which tasks were run during installation

### Resolve issues

- The Leostream Agent can now distinguish between 64-bit Windows XP and Windows 2003 operating systems.

## Leostream Agent for Linux Operating Systems – Version 1.3.122

### Features

- **USB drivers:** Leostream Agent 1.3 provides complete support for USB redirection from Windows clients with an installed Leostream Connect 2.7 and Linux clients with an installed Leostream Connect 2.1.
- **Local users:** The Leostream Agent can now automatically add local users to Linux desktops, including adding these users to the NoMachine NX database
- **Service configuration file:** The new `/etc/leostreamagentd.conf` service configuration file defines the location controls service parameters such as the location of the Java bin directory.
- **leostreamagent.conf parameters:** The parameter `TraceLevels` has changed to `TraceLevel`.

# Connection Broker 7.0.53 – Release Notes

## Connection Broker 7.0.53

Connection Broker 7.0.53 is a minor update to Connection Broker version 7.0.49. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker.

### Features

- **Component Updates:** The following minor updates are available for Leostream Clients and Agents
  - **Leostream Connect 2.6.135** – Windows version: Support for new versions of TightVNC
  - **Leostream Agent 4.6.114** – Windows version: Update for hardware-based PCoIP support
  - **Leostream Connect 2.0.78** – Java version: Resolved issues with **Disconnect** sidebar menu
  - **Leostream Agent 1.2.18** – Java version: Improvements for Red Hat installation
- **Provisioning:** You can now remove rows from the **Destination Datastore** section in the **Edit/Create Pool** page, allowing you to specify an arbitrary number of datastores for distributing provisioned virtual machines.
- **Citrix XenApp:** Protocol Plans for the Citrix online plug-in now accept the `{SCRAMBLED_PASSWORD}` dynamic tag for the `Password` ICA-file parameter. Previously, only the `{PASSWORD}` dynamic tag was supported for the `ClearPassword` parameter. New protocol plans default to using the `{SCRAMBLED_PASSWORD}` dynamic tag. Manually edit any existing protocol plans to switch to scrambled passwords.
- **Leostream Management API (beta):** A beta version of the Leostream Management API is now available. This API allows you to create script to manage desktops, users, and assignments. For more information, please contact [sales@leostream.com](mailto:sales@leostream.com).

### Resolved Issues

- **Citrix XenApp:** You can now successfully launch Citrix XenApp applications and desktops that have blank spaces in their display names. After upgrading to Connection Broker 7.0.52, refresh all your Citrix XenApp centers to correct any XenApp display names in the Connection Broker.
- **VMware View:** VMware View sessions are no longer offered to any clients except those writing to the Leostream client API, such as Leostream Connect.


### Points of Interest

- **Connection Broker Clusters:** Occasionally, when a new Connection Broker is added to the cluster, the **> System > Cluster Management** page does not display information for all Connection Brokers. If you suspect that the **> System > Cluster Management** page is missing a Connection Broker that is in the cluster, reboot that Connection Broker. After the reboot completes, the **> System > Cluster Management** page should display the Connection Broker.

# Connection Broker 7.0.49 – Release Notes

## Connection Broker 7.0.49

Connection Broker 7.0.49 is a minor update to Connection Broker version 7.0.42. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker.

 Due to database changes, you must follow the instructions in [Updating Connection Broker Clusters](#) when updating a cluster of Connection Brokers.

### Features

- **Leostream Agent:** The Windows version has been updated to version 4.6.110
- **Desktops:** The **Edit Desktop** page now allows you to define a **Display name** for each desktop
- **Policies:**
  - The **Pool filters** and **Policy filters** section can now use the `{AD:CLIENT:attribute}` and `{AD:USER:attribute}` dynamic tags when defining filters based on text values
  - The **Display to user as** drop-down menu contains new options to use the new desktop **Display name**
- **Dynamic Tags:** The new `{AD:MACHINE:attribute}` dynamic tag can now be used in registry plans to set registry keys based on values stored in the remote desktop's Active Directory Computer object.
- **Usability:** The Connection Broker now disables the **Save** button after it has been clicked, to prohibit multiple form submissions

### Database Changes

Version 7.0.49 adds a field to the `role` tables in the Connection Broker databases.

# Connection Broker 7.0.42 – Release Notes

## Connection Broker 7.0.42

Connection Broker 7.0.42 is available as an update to any Connection Broker version 6.x. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker.

### Features

Connection Broker 7.0 contains minor updates for all Leostream Connect and Leostream Agent versions, as follows.

- **Leostream Connect 2.6.130** – Windows version
- **Leostream Agent 4.6.106** – Windows version
- **Leostream Connect 2.0.72** – Java version
- **Leostream Agent 1.2.16** – Java version

With the exception of the Windows version of the Leostream Agent, the client and agent updates are minor

defect resolution releases. For features available in the Windows version of the Leostream Agent, see the Leostream Agent section in the release notes.



Connection Broker 7.0 no longer provides support for managing VMs in VirtualCenter 1.x.

The following features were added to Connection Broker 7.0. See the referenced section in the [Connection Broker Administrator's Guide](#) for more information.

- **VMware View Support:** The Connection Broker now allows users to access their VMware View desktops when logging in through the Windows version of Leostream Connect, supporting software-based PC-over-IP connections and allowing mixed environments of VMware View and other technologies (see **Configuring VMware View Policy Options**)
- **Mobile Device Support:** The iTap RDP and iTap VNC clients for iPads and iPhones now provide a Leostream component, allowing users to log in to the Leostream Connection Broker and access their Windows and Linux desktops from Apple mobile devices (see **Apple iPad and iPhone Configuration**)
- **Provisioning Enhancements:** New features expand the existing capabilities for provisioning virtual machines in a VMware environment (see **Chapter 8: Provisioning New Desktops**), allowing you to perform the following action:
  - Specify if the virtual disk should be thick, thin, or same as template
  - Indicate the maximum number of desktops in a pool
  - Select the destination folder in the VMware inventory for new VMs
  - Specify multiple datastores to spread provisioned machines across, and indicate the algorithm used to determine which datastore to use for each VM.
  - Take a snapshot of the newly provisioned VM
- **Automatic VM Deletion:** Virtual Machines can now be marked as *deletable*, allowing the Connection Broker to delete VMs based on the user's release plan (see **Release Plan Example: Deleting Virtual Machines After Use**)
- **Backup Pools:** For policies that offer a single desktop, the Connection Broker can now check if the desktop is reachable and, if not, optionally offer a desktop from a backup pool (see **Specifying Backup Pools**)
- **NoMachine NX for Web Browsers:** The Leostream Web client now supports connecting to remote desktops using the NoMachine NX protocol
- **Authentication:**
  - When multiple authentication server addresses are provided for a particular domain, you can now specify the algorithm used for choosing the address to query when authenticating a given user login (see **Algorithm for selecting from multiple addresses**)
  - Improved usability when defining an authentication server based on an OpenLDAP server, including the ability to authenticate users based on the value of their UID property (see **Adding OpenLDAP Authentication Servers**)
- **Assigning Roles and Policies:** The **Assigning User Role and Policy** section of the **Edit Authentication Server** form has moved to the new **> Users > Assignments** page, providing easier access and more granular separation-of-tasks via Connection Broker roles (see **Chapter 14: Assigning User Roles and Policies**)
- **Roles:**
  - New Connection Broker Administrator Web interface permission to define the level of access to the new **Assignments** page

- The **Load Users** privilege for the **Authentication Servers** permission has been moved to a sub-menu (see **Customizing Access to the Authentication Servers Page**)
- **Centers:**
  - The test results for centers created from VMware vCenter Server now contains additional information about the permissions associated with the user account specified for this center, and the location of desktops that will be registered with the Connection Broker (see **Testing vCenter Server Centers**)
  - New option to indicate that desktops should no longer be offered from a particular center (see **Creating Centers**)
- **Pools:**
  - You can now specify the algorithm for spreading out desktop assignment across the centers associated with a pool (see **Defining Pools Using Centers**)
  - You can now build pools based on the desktops model, process speed, or BIOS serial number (see **Defining Pools Using Desktop Attributes**)
- **Cluster Management:** New > **System** > **Cluster Configuration** page provides options for viewing and configuring time zone and network settings for all Connection Brokers in a cluster, as well as removing obsolete Connection Brokers from the cluster (see **Managing Connection Broker Clusters**)
- **Policies:** New policy options provide finer control over which desktops are offered to a user from each pool in their policy (see **When User Logs into Connection Broker**)
- **Protocol Plans:** Protocol plans can now be specified on a per-user basis, allowing protocol plan override for particular users (see **Which Protocol Plans Applies?**)
- **Reports:** New report on the > **Status** > **Reports** page shows user logins over time and provide enhancements to the Connection Broker audit level logging capabilities (see **User Login History Reports**)
- **Search:** The > **System** > **Logs** page can now be searched using options on the global > **Search** page (see **Searching for Connection Broker Objects**)
- **Leostream Agent:** You can now set a default port for communications with the Leostream Agent (see **Configuring Communications with the Leostream Agent**)
- **Networking:** The **Network Configuration** page now contains an option to set the gateway on the `eth1` network adaptor (see **Setting Network Configuration and Connection Broker VIP**)

## Point of Interest

The **Test Login** workflow has changed. The Connection Broker no longer performs a test at the moment you click a **Test Login** link associated with a user on the > **Users** > **Users** page. Instead, the Connection Broker now allows you to select the client and domain for the test. After selecting appropriate test values, click the **Run Test** button to perform the test.

## Database Changes

Version 7.0.42 adds fields to the following tables in the Connection Broker databases.

- `broker`
- `log`
- `plan_protocol`

- plan\_release
- policy\_assignment
- pool
- remote\_authentication
- server
- user
- vc\_datastore
- vm (fields have also been removed from this table)

In addition, the table `policy_vmware_view_servers` has been added.

## Leostream Agent 4.6.106 – Microsoft Windows Version

Version 4.6 is the current version of Leostream Agent for Windows operating systems. This release contains the following enhancements.

- The Leostream Agent can now return information about computer model, processor speed, and BIOS serial number, for display in the Connection Broker > **Resources** > **Desktops** page
- The Leostream Agent Installer now has an option to indicate if the Microsoft Visual C++ Runtime Libraries should be installed (see the [Leostream Installation Guide](#) for more information)

# Connection Broker 6.5.71 – Release Notes

Connection Broker 6.5.71 is available as an update to any Connection Broker version 6.x. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker.

## Features

Connection Broker 6.5.71 was released as an update to version 6.5 after the initial release of Connection Broker 7.0. The following 7.0 features are now available in this minor update for 6.5.

Connection Broker 6.5.71 also contains minor updates for all Leostream Connect and Leostream Agent versions, as follows.

- **Leostream Connect 2.6.130** – Windows version
- **Leostream Agent 4.6.110** – Windows version
- **Leostream Connect 2.0.72** – Java version
- **Leostream Agent 1.2.16** – Java version
  
- **Policies:**
  - New policy options provide finer control over which desktops are offered to a user from each pool in their policy
  - For policies that offer a single desktop, the Connection Broker can now check if the desktop is reachable and, if not, optionally offer a desktop from a backup pool
  
- **Pools:**
  - You can now specify the algorithm for spreading out desktop assignment across the centers associated with a pool
  - You can now build pools based on the desktops model, process speed, or BIOS serial number (requires a special Leostream Agent build; contact support@leostream.com for more information)
  
- **Centers:** New option to indicate that desktops should no longer be offered from a particular center
  
- **Test Login:** The **Test Login** workflow has changed. The Connection Broker no longer performs a test at the moment you click a **Test Login** link associated with a user on the **> Users > Users** page. Instead, the Connection Broker now allows you to select the client and domain for the test. After selecting appropriate test values, click the **Run Test** button to perform the test.
  
- **Dynamic Tags:** The new `{AD:MACHINE:attribute}` dynamic tag can now be used in registry plans to set registry keys based on values stored in the remote desktop's Active Directory Computer object.

## Resolved Issues

- HTML strings (for example, `&amp`) entered into text fields are no longer interpreted and, therefore, no longer appear as their interpreted text (for example, `&`) when the form is subsequently edited
  
- Unmatched braces, such as `{`, in edit fields no longer generate warnings about incorrectly formatted dynamic tags.

## Database Changes

This release adds columns to the following tables.

- `policy_assignment`
- `pool`
- `server`
- `vm`
- `vm_registration`

## Connection Broker 6.5.61 – Release Notes

Connection Broker 6.5.61 is available as an update to any Connection Broker version 6.x. See the [Connection Broker Administrator's Guide](#) for instructions on updating your Connection Broker.

### Connection Broker 6.5.61

#### Features

- **Leostream Component:** The Connection Broker includes updated versions of the point releases for the following Leostream components:
  - Leostream Connect 2.6.126 – Windows version: Minor updates for Leostream Connect running in shell-mode and for USB redirection
  - Leostream Connect 2.0.62 – Java version: Minor updates in support of latest version of Oracle Secure Global Desktop.
  - Leostream Agent 4.6.95 – Windows version: Minor bug fix update for Leostream Agents that are registered with multiple Connection Brokers
- **Default Leostream Agent Port:** A new field on the > **System > General Configuration** page allows you to set the default port for Leostream Agent communications.
- **Uncategorized Desktops:** The Connection Broker now stores all desktops that are reported when a Leostream Agent registers the desktop, even if no **Uncategorized Desktop** center exists. Even those these desktops are stored, the Connection Broker does not display these registered desktops on the > **Resources > Desktops** page or offer them to users until an **Uncategorized Desktop** center is created.
- **Sun Ray:** New support for Sun Ray environments when virtual machines are not in VMware vCenter Server clusters.
- **Test Login:** **Test Login** now indicates if the user is being forwarded to another Connection Broker.
- **Performance:** Improved performance for deleting and scanning centers with a large number of desktops.

#### Resolved Issues

- **Web page performance:** Improved load times for Web pages in large deployments. Also addresses load time issues if the Connection Broker does not have network access.
- **Release:** The **Release** option is now only shown for desktops that are already assigned to the user.
- **VPN Login:** Users that are forwarded to another Connection Broker can now successfully log in through a VPN.

- **Centers:** Deleting a center now cancels any running refresh job for that center.
- **Desktop reboot jobs:** All pending desktop reboot jobs resulting from a power control plan are now cancelled when that desktop is reassigned to a user.

## Database Changes

This release adds a `vm_registration` table to the database.

## Working with Sun Secure Global Desktop

The latest version of Sun Secure Global Desktop (SGD) requires the following changes when used with Leostream Connect.

1. If you upgraded from a previous Connection Broker version, ensure that you remove the – `windowskey` parameter from the **Command line parameter** in the **Sun Secure Global Desktop** session of the Protocol Plan.
2. When configuring the Connection Broker for use with SGD, ensure that you select the **Exit client after connection to resource is established** option on the Connection Broker > **System** > **General Configuration** page.
3. If a user encounters an error when launching a desktop using SGD, simply click through the error to launch the remote session to the desktop.

# Connection Broker 6.5.35 – Release Notes

Connection Broker 6.5.35 is available as an update to any Connection Broker version 6.x.

## Connection Broker 6.5.35

### Features

- **Leostream Components:** The Connection Broker includes updated versions of the point releases for the following Leostream components:
  - Leostream Connect 2.6.118 – Microsoft Windows version: Improvements for USB device redirection and run-as-shell mode.
  - Leostream Connect 2.0.52 – Java version: The **Test** button now displays “Connection Broker unreachable” if an invalid Connection Broker address is entered in the **Options** dialog.
  - Leostream Agent 4.6.89 – Microsoft Windows version: Minor update, including improvements to the location-based printing feature.
  - Leostream Agent 1.2.12 – Java version: Minor update to resolve an issue when running with JDK 1.5.
- **Loading Users:** The **Load Users** feature for authentication servers has been expanded to include options for refining the search for users to load.
- **HP Blade Location:** The display for HP Blade locations has been simplified on the > **Resources** > **Desktops** page. Blade locations no longer require the administrator to hover over the desktop row to see the entire blade location. See the [Connection Broker Administrator's Guide](#) for a description of the new blade location format.

- **Web Page Performance:** A number of performance improvements have been added to the Administrator Web interface, to speed up page rendering when the Connection Broker is managing a large number of users and the **Login name unique across domains** option is not selected on the **> System > Maintenance** page.
- **Work Queue Performance:** New work queue performance enhancements improve job prioritization during login storms, to improve the user experience during logins.

## Resolved Issues

- When an end user logs into Leostream Connect or the Leostream Web client, the **Release** option no longer appears for desktops that are not currently assigned to that user. z
- Location-based override of the Protocol Plans are now correctly applied. The **> System > Logs** page now includes a log message when the protocol plan is overwritten based on the client location.
- The `REMAPPED_IP` dynamic tag is now correctly parsed and replaced.

# Connection Broker 6.5.27 – Release Notes

Connection Broker 6.5.27 is available as an update to any Connection Broker version 6.x.

## Connection Broker 6.5.27

### Features

The following features were added to Connection Broker 6.5. See the referenced section in the [Connection Broker Administrator's Guide](#) for more information.

- **Enhanced Web Client**
  - The look-and-feel of the Leostream Web client has been enhanced to improve the end-user experience and usability (see **Chapter 15: Accessing Resources via the Web Client**).
  - The Web client now honors settings for registry plans, printer plans, and user role settings for adding Local users and adding users to the Remote Desktop Users group.
- **Monitor Layouts/Display Plans:** When updating from a previous Connection Broker version, monitor layouts on the **> Clients > Monitor Layouts** page have moved to the **> Plans > Display** page.
  - You can now create display plans that automatically match the layout and resolution of the client displays, within the limits of the display protocol used to connect to the desktop (see **Display Plans to Match Client Displays**).
  - A **Default** display layout now applies to all clients that are not assigned a specific display layout (see **The Default Display Plan**).
- **Connection Broker Updates:** The workflow for updating the Connection Broker has changed. The Connection Broker now automatically indicates when an update file is available (see **Updating the Connection Broker**).
- **Citrix XenApp Support:** The Web client can now use the Citrix Client for Java when launching XenApp applications and desktops (see **Citrix XenApp ICA**).

- **Client Locations:** Client locations can now be defined using subnet maps specifying a network mask length and a target range for the source and destination (see **Using Subnet Masks to Create Locations**).
- **Active Directory Centers:**
  - New support the **Continuously apply auto-tags** option (see **Active Directory Centers**).
  - The **Monitor desktop power state** option has been replaced with the **Power state refresh interval** option. The new refresh interval allows you to specify how often the Connection Broker polls the remote viewer and Leostream Agent ports on the remote desktop to determine each desktop's power state (see **Active Directory Centers**).
- **Pools:**
  - Pools can now be created based on vCenter Server clusters (see **Defining Pools Using VMware vCenter Server Clusters**).
  - Additional information about the power status of the desktop and Leostream Agent is now shown on the **> Resources > Pools** page (see **Displaying Pools**).
- **Policy Filters:**
  - Per-pool and policy-wide desktop filters in a policy can now be created using the custom attributes defined in VMware vCenter Server. Up to four custom attributes can be used (see **Specifying VMware vCenter Server Clusters for Desktop Filters and Policy Filters**).
  - Dynamic tags can now be used when defining policy filters, including special dynamic tags that allow you to build filters based on user and client attributes (see **Using Dynamic Tags in Policy Filters**).
- **WebHook Support:** You can now specify custom WebHooks to call when the user logs into the Connection Broker, allowing you to perform custom actions for every user login (see **Using WebHooks in Policies**).
- **Authentication:**
  - A new setting on the **> System > General Configuration** page allows you to explicitly specify if the **Domain** field is a drop-down menu or edit field on the **Login** pages for Leostream Connect and the Leostream Web client (see **Enabling Authentication Server Features**).
  - You can now specify a default authentication server to display the first time Leostream Connect or the Leostream Web client runs on a particular client device (see **Populating the Domain Drop-Down and Setting Default Domain**). Previously, the client always displayed either **<Any>** or **<None>** depending on the setting for the **Login name unique across domains** field. Now, the default domain is displayed.
  - When the **Login name unique across domains** field is turned off on the **> System > General Configuration** page, user names are now listed with their domain, allowing you to distinguish different users when hard-assigning desktops or viewing users assigned to desktops on the **> Resources > Desktops** page.
- **Local User Support:**
  - The Connection Broker can now automatically add local users to remote Windows desktops, supporting, simplifying deployments for non-domain users (see **Session Permissions**).
  - The Connection Broker can now add users to the Remote Desktop Users group as either a domain or local user. Previously, the Connection Broker always added the user as a domain user (see **Session Permissions**).

- **Search**
  - The new **Search** page allows you to quickly locate particular objects in the Connection Broker (see **Global Search**).
  - Table-level searches for desktops, users, and clients allow you to quickly find an object in these pages (see **Per-Page Search**).
- **Roles:** A new **Load User** authentication server permission gives read-only access to the authentication servers while allowing a user with this role to load users from this authentication server (see **Setting Permission Levels**).
- **Power Monitoring:**
  - When manually importing desktops, if the Connection Broker cannot determine the desktop's power state, the state is now displayed as **Unavailable**. Previous Connection Broker versions reported these desktops as **Stopped**.
  - The Connection Broker now monitors the power state of physical desktops in an Active Directory center by running the `poll_power_state` job, separate from the regular center refresh job. When polling for the power state, the Connection Broker now checks the remote viewer ports and Leostream Agent port, to determine if the desktop is running. If no ports are open, the Connection Broker marks the desktop as `Stopped` (see **Determining Power State for Physical Desktops**).
- **Cisco VPN Client Support:** Leostream Connect can now automatically establish a VPN tunnel using a Cisco Systems VPN client (see **Using the Cisco VPN GUI with Leostream Connect**).
- **Logging and Auditing**
  - The **Log Settings** page no longer provides options to turn off logging for certain object types (see **Customizing Log Levels**).
  - New **Events** column on the **> System > Log** page allows logs to be sorted and searched for particular activity, such as user login, desktop assignment, and more (see **Available Log Characteristics**).
  - The Connection Broker now logs all changes made to the Connection Broker Administrator Web interface (see **Using Logs to Track Connection Broker Configuration Changes**).
  - Custom filters can now be created for the **> System > Log** page, allowing you to create customized reports (see **Filtering the Log List**).
- **Job Queue**
  - Pending work queue jobs can now be rescheduled to ensure that less critical jobs are not run during login storms (see **Rescheduling Pending Jobs**).
  - Work queue jobs associated with Connection Brokers that were removed from cluster can now be deleted from the job queue (see **Purging Pending and Running Jobs**).
- **Connection Broker Metrics:** Each Connection Broker now has an associated `heartbeat` job, which is used to determine if Connection Broker Metrics should be displayed for that Connection Broker. Connection Brokers that skip two heartbeats can be hidden in the Metrics report (see **Reporting Connection Broker Metrics**).
- **Bulk upload:** The new **Upload** column for users and clients allows you to distinguish users and clients that were bulk uploaded from the **> System > Maintenance** page (see **Uploading Users**).

## Resolved Issues

- The Connection Broker now consistently syncs the networking information stored in the database and used by the Linux virtual appliance.
- When downloading the Leostream technical support logs, the postgres files are no longer included.
- A `system_check` job now exists for each Connection Broker in a cluster. This allows clustered Connection Broker to more efficiently clean out stale user-session state files, resulting in faster reboot times.

## Database Changes

Version 6.5.27 adds fields to the following tables in the Connection Broker databases.

- `broker`
- `client`
- `display_layout`
- `log`
- `plan_protocol`
- `pool`
- `user`
- `vm`

## Leostream Connect 2.6.109 – Microsoft Windows Version


Version 2.6 is the current version of Leostream Connect for Windows operating systems. This point release includes the following enhancements.

- Leostream Connect now provides the Connection Broker with information about the number and resolution of displays attached to the client, in support of the new Connection Broker display plan that automatically matches the remote desktop to the displays connected to the clients.
- New installations of Leostream Connect honor the default domain specified in Connection Broker 6.5.
- Performance enhancements for USB device management.
- Leostream Connect can now automatically establish a VPN tunnel when using a Cisco Systems VPN client.
- New `-login` and `-logout` command line parameters allow you to forcefully log out or switch users.
- Leostream Connect shell-mode enhancements:
  - New quick-key combination for opening the **Options** dialog, allowing you to modify the Connection Broker address and access USB options when working in shell mode.
  - New quick-key combination for exiting shell mode.
  - Leostream Connect shell mode now provides a popup menu that provides access to options previously available only in the Leostream Connect system tray menu.
  - When running in shell mode, Leostream Connect now waits for the network to be available before opening the **Login** dialog.
- Client-side credential passthrough is now available for Windows Vista and Windows 7 clients using the Leostream Credential Provide.

- Leostream Connect now stores logs in one of the following locations, in order:
  - The location specified in the **Log** tab on the **Options** dialog
  - The Leostream Connect installation directory
  - A directory named `temp` inside of the Leostream Connect installation directory
  - The `temp` directory inside the user folder for the currently logged in user
  - The system `root` directory
- The **About** window is now included in the **Options** dialog.

## Leostream Connect 2.0.51 – Java Version

Version 2.0 is the current version of Leostream Connect for Linux operating systems.

 Version 2.0 obsoletes the tabbed dialog version of Leostream Connect. Existing installations that use the tabbed dialog will automatically switch to the standard dialog format. See the [Leostream Connect Administrator's Guide and End User's Manual](#) for complete information on these features.

This release includes the following enhancements.

- Leostream Connect no longer includes documentation in the `index.html` file. All documentation is included in this Administrator's guide.
- Enhanced **Options** dialog includes options to set the Connection Broker address, specify logging configuration, and enter paths to remote viewers.
- Support for installing on client devices running Apple Mac OS X.
- New installations of Leostream Connect honor the default domain specified in Connection Broker 6.5.
- Support for the **Allow unauthenticated logins (hides password field)** option on the Connection Broker > **System > General Configuration** page. By enabling this feature, end-users can authenticate using fingerprint logins on their remote desktops.
- Leostream Connect can now be automatically upgraded using the options on the Connection Broker > **System > General Configuration** page.
- The **Options** dialog can now be accessed from the **Login** dialog by pressing `Ctrl+Shift+O`.
- New option to display a warning if the `Caps Lock` key is on and the user is focused on the **Password** field in the **Login** dialog.
- New Leostream Connect sidebar for connecting and disconnecting from resources, as well as attaching USB devices to desktops launched using HP RGS.
- When specifying the path to a remote viewer on the **Options** dialog, pressing `Ctrl+O` opens a **Browse** dialog for the viewer with the cursor's focus.
- New option to include a customized link on the **Login** dialog.
- New graphical log viewer available for accessing logs in environments where command line access is not available.

## Leostream Agent 4.6.76 – Microsoft Windows Version

Version 4.6 is the current version of Leostream Agent for Windows operating systems. This point release contains the following enhancements.

- The **Enable single sign-on for PCoIP and VNC** task now enables single sign-on for desktops running a Microsoft Vista and Windows 7 operating system when connecting using VNC or Teradici PC-over-IP protocols.
- The Leostream Agent can now create local user accounts on the remote desktop, and add these users to the Local Users group and Remote Desktop Users group.
- The Leostream Agent now stores logs in one of the following locations, in order:
  - The location specified in the Leostream Agent **Log Settings** dialog
  - The Leostream Agent installation directory
  - A directory named `temp` inside of the Leostream Agent installation directory
  - The `temp` directory inside the user folder for the currently logged in user
  - The system `root` directory

## Leostream Agent 1.2.11 – Java Version

Version 1.2 is the current version of Leostream Agent for Linux. This point release contains the following enhancements.

- Support for installation on Novell SUSE Linux Enterprise remote desktops.
- The **Upgrade** option on the > **Resources** > **Desktops** page can now be used to upgrade the Leostream Agent on Linux desktops.
- The Sun Ray components are no longer included in the Leostream Agent installation package. Sun Ray components are now part of the Leostream Connect installation package (see the [Leostream Installation Guide](#) for more information).

# Connection Broker 6.4.58 – Release Notes

Connection Broker 6.4.58 is a minor update to version 6.4.21.

## Connection Broker 6.4.58

### Features

- **Leostream Components:** The Connection Broker includes updated versions of the point releases for the following Leostream components:
  - Leostream Connect 2.5.67 – Microsoft Windows version
  - Leostream Connect 1.5.116 – Java version
  - Leostream Agent 4.5.43 – Microsoft Windows version
  - Leostream Agent 1.1.47 – Java version
- **Authentication:**
  - A new setting on the > **System > General Configuration** page allows you to explicitly specify if the **Domain** field is a drop-down menu or edit field on the **Login** pages for Leostream Connect and the Leostream Web client (see **Enabling Authentication Server Features**).
  - You can now specify a default authentication server to display the first time Leostream Connect or the Leostream Web client runs on a particular client device (see **Populating the Domain Drop-Down and Setting Default Domain**). Previously, the client always displayed either <Any> or <None> depending on the setting for the **Login name unique across domains** field. Now, the default domain is displayed.
  - When the **Login name unique across domains** field is turned off on the > **System > General Configuration** page, user names are now listed with their domain, allowing you to distinguish different users when hard-assigning desktops or viewing users assigned to desktops on the > **Resources > Desktops** page.
- **Local User Support:**
  - The Connection Broker can now automatically add local users to remote Windows desktops, supporting, simplifying deployments for non-domain users (see **Session Permissions**).
  - The Connection Broker can now add users to the Remote Desktop Users group as either a domain or local user. Previously, the Connection Broker always added the user as a domain user (see **Session Permissions**).
- **Loading Users:** The **Load Users** feature for authentication servers has been expanded to include options for refining the search for users to load.
- **Roles:** A new **Load User** authentication server permission gives read-only access to the authentication servers while allowing a user with this role to load users from this authentication server (see **Setting Permission Levels**).
- **HP Blade Location:** The display for HP Blade locations has been simplified on the > **Resources > Desktops** page. Blade locations no longer require the administrator to hover over the desktop row to see the entire blade location. See the [Connection Broker Administrator's Guide](#) for a description of the new blade location format.

- **Web Page Performance:** A number of performance improvements have been added to the Administrator Web interface, to speed up page rendering when the Connection Broker is managing a large number of users and the **Login name unique across domains** option is not selected on the **> System > Maintenance** page.
- **Work Queue Performance:** New work queue performance enhancements improve job prioritization during login storms, to improve the user experience during logins.

## Resolved Issues

- **Critical:** Resolves issues stemming from changes in the Connection Broker database.
- When an end user logs into Leostream Connect or the Leostream Web client, the **Release** option no longer appears for desktops that are not currently assigned to that user.
- Location-based override of the Protocol Plans are now correctly applied. The **> System > Logs** page now includes a log message when the protocol plan is overwritten based on the client location.
- The `REMAPPED_IP` dynamic tag is now correctly parsed and replaced.
- The Leostream Web client now waits for a stopped or suspended desktop to power up before attempting to establish a connection.

## Database Changes

The `ad_attribute` table now stores each attribute in a separate row, instead of combining all attributes into a multi-valued attribute in one field. This change improves the performance of policy filters that use the **is equal to** option.

# Connection Broker 6.4.21 – Release Notes

Connection Broker 6.4.21 is a minor update to version 6.4.17.

## Connection Broker 6.4.21

### Features

- **Leostream Components:** The Connection Broker includes updated versions of the point releases for the following Leostream components:
  - Leostream Connect 1.5.116 – Java version: See [Leostream Connect 1.5.116 – Java Version](#)
  - Leostream Agent 1.1.47 – Java version: All files are properly formatted for Linux operating systems; `^m` no longer appears in any files.
  - Leostream Agent 4.5.43 – Windows version: Addresses an issue with the firewall dependency on Windows operating systems.
- **Release Plans:** New option to indicate how the Connection Broker should handle a disconnect action when the Leostream Agent is not present or reachable on the remote desktop to verify the user's state. Previously, unverified disconnect actions were always treated as a logout. Release plans now allow you to indicate if an unverified disconnect should be treated as a logout or disconnect.
- **USB Devices and HP RGS:** When using the Java version of Leostream Connect, a new dynamic tag

allows you to select which remote desktop has access to USB devices attached to the client device (see “USB Passthrough with HP RGS” in the [Leostream Connect Administrator’s Guide and End User’s Manual](#)).

## Resolved Issues

- In Sun Ray environments, the Connection Broker correctly switches to the appropriate Sun Ray Server when a list of hosts is provided in the **Sun Ray Details** section of the VMware vCenter Server center. See the [Leostream Thin Clients Guide](#) for more information on configuring the Connection Broker for use in Sun Ray environments.
- In cases where the default **All Printers** printer plan is empty, i.e., no Printer Repository center is defined, the Connection Broker no longer removes the network printers that were manually added to the remote desktops.
- When using 1E WakeUp to power up physical desktops, the Connection Broker no longer performs a NetBIOS name lookup. To obtain the NetBIOS name, the Connection Broker queries the Active Directory center that registers this desktop. If the desktop’s Active Directory record does not contain an accurate NetBIOS name, the wake-up command will fail.
- In cases where the Connection Broker does not accurately know the power state of a physical desktop, for example, if the physical desktop does not have a running Leostream Agent, the Connection Broker now always sends a call to the 1E WakeUp server to power up the machine when the user is assigned to that desktop.

## Database Changes

Version 6.4.21 adds a field to the `plan_release` table in the Connection Broker database. In addition, version 6.4.21 makes a type change to a field in the `skin` table.

## Leostream Connect 1.5.116 – Java Version

- New `lc.conf` file parameter `read_username_from_smartcard` allows Leostream Connect to automatically populate the **User name** field on the login dialog with the username on a Sun Ray DTU Java smartcard.
- The Leostream Connect sidebar now contains options for attaching all USB devices to the remote session when connecting to remote desktops using HP RGS (see “USB Passthrough with HP RGS” in the [Leostream Connect Administrator’s Guide and End User’s Manual](#))

## Connection Broker 6.4.17 – Release Notes

Connection Broker 6.4.17 is a point release update to version 6.3.61. For information on features in earlier releases, please contact [sales@leostream.com](mailto:sales@leostream.com).

## Connection Broker 6.4.17 – General Availability

### Features

- **Leostream Components:** The Connection Broker includes updated versions of the point releases for the following Leostream components. In addition, the Connection Broker contains a new point release of the Windows version of the Leostream Agent (see [Leostream Agent 4.5.42 – Microsoft Windows Version](#))

- Leostream Connect 2.5.67 – Windows version: This update release contains improvements that prevent duplicate clients from appearing in the Connection Broker > **Clients** > **Clients** page.
- Leostream Connect 1.5.107 – Java version: This update release provides enhancements for HP RGS connections and the new Leostream Connect sidebar for launching and disconnecting from remote sessions. See the [Leostream Connect Administrator's Guide and End User's Manual](#) for complete details.
- Leostream Agent 1.1.44 – Java version: This update release includes minor bug fixes.
- **Microsoft SQL Server 2008 Support:** The Connection Broker now fully supports external databases stored in a Microsoft SQL Server 2008 database
- **Web Browser Look-and-Feel:**
  - Connection Broker skins provide additional controls to specify the colors used on Connection Broker forms, including setting the color used for all text and links (see [Creating Color Schemes \(Skins\)](#))
  - You can now specify a custom logo and favicon on the Leostream Web Client and Administrator Web interface (see [Displaying a Custom Logo and Favicon](#))
- **Policies:** Desktop **Filters** can now be applied on a pool-by-pool basis, in addition to across all pools in a policy
- **Authentication:**
  - For authentication servers created without the **Query for group information** option selected, you can assign roles and policies using LDAP filter expressions (see [Assigning Roles and Policies Based on Multiple Attributes](#))
  - You can now toggle the value for the **Query for group information** option after the authentication server is created, allowing you to turn off the group query to improve performance after configuring your authentication server
- **Logging Events:** The following new logging events allow you to use SNMP traps and syslog to track pool thresholds and Connection Broker metrics:
  - Log information, warnings, or errors when any of the metrics on the **Connection Broker Metrics** report exceed a lower or upper threshold
  - Log information, warnings, or errors when desktop pool levels reach a lower bound
- **Performance:** Work queue enhancements significantly improve performance for large-scale deployments
- **HP Blade Location:** The Connection Broker can now display rack, enclosure, and location information for HP ProLiant blades in an HP BladeSystem enclosure equipped with HP Onboard Administrator, simplifying the process of locating blades in need of maintenance
- **SSL Communications:** The **Use SSL** drop-down menus have been removed from the **Edit Desktops** and **Edit Centers** pages; when communicating with the Leostream Agent, the Connection Broker defers to the SSL setting in the Leostream Agent Control Panel dialog

## Resolved Issues

- The Connection Broker now updates stale IP addresses for desktops that were shutdown or suspended when their DHCP lease expired. Requires Leostream Agent 4.5 be running on the remote desktop.

## Database Changes

Version 6.4.17 adds fields to the following tables in the Connection Broker database.

- client
- skin
- general\_config
- vm
- health\_attribute
- policy\_assignment
- pool

In addition, version 6.4.17 makes a type change to a field in the `remote_authentication_assign` table.

## Points of Interest When Updating from Connection Broker 6.2 to 6.4 or Higher

- **SSL:** The Connection Broker no longer contains any **Use SSL** drop-down menus for desktops and centers. When upgrading existing Connection Brokers, the Connection Broker tries the last known setting for SSL communications. For example, if a particular desktop had the **Use SSL** drop-down menu set to **Yes**, the Connection Broker first tries to communicate with the Leostream Agent using SSL. If SSL fails, the Connection Broker switches to non-SSL, and continues to use non-SSL until the Leostream Agent is reconfigured to require SSL. Alternatively, if a desktop had the **Use SSL** drop-down menu set to **No**, the Connection Broker first tries non-SSL communications with the Leostream Agent and, if this Leostream Agent is configured to require SSL, switches to SSL.
- **Roles:** When upgrading your Connection Broker, the new session permissions **Allow user to manually release desktops** and **Allow user to power desktops on and off** will be turned on and off based on the setting of the **Desktops and Applications** drop-down menu in your existing role, as follows.
  - If the previous role was set to **Power control only access**, the new role has the **Allow user to power desktops on and off** option checked.
  - If the previous role was set to **Release control only access**, the new role has the **Allow user to manually release desktops** option checked.
  - If the previous role was set to **Power and release control access**, the new role has the **Allow user to power desktops on and off** and **Allow user to manually release desktops** options checked.



If a user that logs in using Leostream Connect is assigned a policy that allows them to restart their desktops, that user must now have a role that provides the restart permission. If the user's updated role does not have the **Allow user to power desktops on and off** option selected, the user no longer sees the **Restart** menu in the Leostream Connect System Tray.

- **Roles:** Connection Broker 6.2 always displayed the **> Status > Downloads** page when the end-user logged into the Connection Broker Web interface. In 6.4, the Leostream Web client *never* displays this page. If an end-user requires access to the **> Status > Downloads** page, you must modify the user's role to provide access to the Administrator Web interface, and select the **Full** permission for the **> Status > Downloads** page.
- **Roles:** In Connection Broker 6.2, roles that provided **Full** access to the **> Users > Users** or **> Users > Roles** page allowed the user to edit the Administrator user or role, respectively. In 6.4, **Full** access *does not* allow the user to edit the Administrator user or role. If the user requires access to the Administrator user or role, modify their role permission to provide **Administrator** access for the **> Users > Users** or **> Users > Roles** page, as necessary.
- **Bulk Upload:** If you use the **Upload users** option on the **> System > Maintenance** page to load users into your Connection Broker, the default value for the `authentication_method` column has changed. Previously, if you did not specify a value for the `authentication_method` column, the

Connection Broker configured the user as authenticated locally by the Connection Broker. In 6.4, if the `authentication_method` column is blank, the Connection Broker assumes the user is authenticated remotely.

When you load a user without specifying the authentication method, the **Authentication Server** column on the > **Users > Users** page displays (**Uploaded User**) for these users. The first time this user logs into the Connection Broker, the **Authentication Server** column updates with the name of the remote authentication server used to authenticate the user and assign a policy.

- **Sun Ray:** Leostream Connect 1.5 and Leostream Agent 1.1 are configured to work together on Sun Ray servers. Older versions of Leostream Connect are not compatible with Leostream Agent 1.1 when used in a Sun Ray session. If you must use an older version of Leostream Connect, contact [support@leostream.com](mailto:support@leostream.com) for the previous version of the Leostream Sun Ray Session scripts.

If you upgrade an existing SRSS to use Leostream Connect 1.5, you do not need to replace your Leostream Sun Ray Session scripts with the Leostream Agent. Leostream Connect 1.5 first tries to communicate with the Leostream Agent. If version 1.1 of the Leostream Agent is not installed, Leostream Connect uses the deprecated Leostream Sun Ray Session scripts.

- **Leostream Agent:** The end-user experience and single sign-on installation tasks can now be run when installing Leostream Agent 4.5 on a desktop with other single sign-on solutions already installed, such as those from Novell or HP.

## Leostream Agent 4.5.42 – Microsoft Windows Version

Version 4.5 is the current version of Leostream Agent for Windows operating systems. The point release contains the following enhancements.

- Provides the Connection Broker with location information for HP blades
- WoW64 support added to the multi-display feature, allowing the Leostream Agent installed on a 64-bit platform to correctly position windows associated with a 32-bit application
- Additional improvements to multi-display support for cases where the Windows taskbar is minimized
- Now report IP address changes to the Connection Broker, to resolve issues with stale IP addresses for virtual machines that were suspended or off and subsequently had their DHCP lease expire
- Resolved issues around installing new versions of Leostream Agent over existing Leostream Agents
- Resolved issues pertaining to Microsoft Hyper-V installations

# Updating Connection Broker Clusters

If you have multiple Connection Brokers clustered around a common Microsoft SQL Server 2005 or 2008 database, you must individually update all Connection Brokers in the cluster.



Before updating your production environment, test the new Connection Broker version in a proof-of-concept environment.

Use the following procedure to update a cluster of Connection Brokers. See the [Connection Broker Administrator's Guide](#) for detailed instructions on switching databases and updating Connection Brokers.

1. Determine a maintenance window when user activity will be low to update your Connection Brokers
2. Snapshot all Connection Brokers in the cluster
3. Backup the SQL Server database used for the cluster
4. **Switch all but one Connection Broker back to using an internal database**
5. If replication is turned on for the SQL Server database, turn replication off.



Do not proceed with the upgrade if replication is turned on for the Connection Broker database.

6. **Update the Connection Broker that is attached to the external database**

The update process modifies the database scheme to support the new Connection Broker version.

7. **Update the remaining Connection Brokers, while they are still attached to their internal databases**
8. Only after all Connection Brokers are updated, switch the Connection Brokers from their internal databases back to the SQL Server database.




When switching each Connection Broker back to the SQL Server database, ensure that you assign each Connection Broker to the **same Site ID** it had before you removed it from the cluster.

Any Connection Brokers that you do not switch back to an internal database before beginning the upgrade are placed into *maintenance mode* after the first Connection Broker is upgraded. In some cases, you cannot log in to the Administrator Web interface of a maintenance mode Connection Broker to perform an upgrade. If you encounter this problem, use the Connection Broker virtual appliance console to switch the maintenance mode Connection Brokers back to an internal database. Then, follow step 7 and 8 in the previous procedure to update the Connection Broker.

# Upgrading your Connection Broker

## Upgrading from Versions 6.4.x and 6.5.x to Version 7.0.x

You can directly upgrade Connection Broker 6.4.x and 6.5.x to version 7.0.x using the update methods available on the Connection Broker > **System** > **Maintenance** page.


 Changes made to the **Authentication Servers** permission in roles may cause your selected privilege for this permission to reset during the upgrade. If you have **Authentication Servers** permissions set to **Full** or **View only** access, the roles are incorrectly upgraded to provide **No** access. Please, edit any roles that provide **Full** or **View only** access to reapply these permissions.

## Upgrading from Version 5.3.x to Version 7.0

To upgrade to Connection Broker 7.0 from version 5.3 you must, first, update your 5.3 Connection Brokers to the latest patch version. See “Updating the Connection Broker” in the [Connection Broker Administrator’s Guide](#) for detailed instructions on upgrading the 5.3 Connection Broker.


**Note:** Connection Broker 7 requires a new license key. Please, contact [sales@leostream.com](mailto:sales@leostream.com) to convert your existing key to the new format.

Connection Broker 7.0 updates the version 5.x Web interface design. For best results when upgrading from version 5.3, close any existing Connection Broker Web interfaces, and clear your Web browser’s cache before you launch the new Connection Broker Web interface. If your Connection Broker Web interface does not render correctly, press **CTRL-Refresh** to reload the page.

 If you have a Connection Broker older than version 5.3, you must first update to version 5.3. See [Upgrading from Version 5.2.x to Version 5.3.x](#) for instructions.

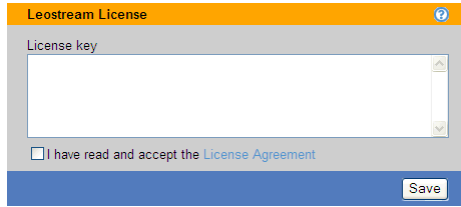
## Upgrade Instructions when Using an Internal Database


If your 5.3.x Connection Broker runs with an internal database, upgrade to the 7.0 Connection Broker, as follows.

 If you have a cluster of Connection Broker, follow the upgrade instructions in [Upgrade Instructions when Using a Microsoft SQL Server Database](#).

1. Change the **Refresh Interval** of all your centers to **Manual**.
2. Use the **Check for updates** option on the > **System** > **Maintenance** page to update the Connection Brokers to the latest 5.3.x patch.
3. Back up your existing 5.3.x Connection Broker database, as follows:
  - a. Go to the > **System** > **Maintenance** page.
  - b. Select the **Download** option.
  - c. Click **Next**.
  - d. Follow the instructions to save the 5.3 Connection Broker configuration.
4. Shut down your 5.3.x Connection Broker virtual appliance.

5. Back up your 5.3 Connection Broker virtual appliance.
6. Install a new 7.0 Connection Broker virtual appliance
7. When you sign into the new Connection Broker, the **Leostream license** page, shown in the following figure, appears. Enter your new 7.0 license key.



 Connection Broker 7.0 will not accept previous versions of the Leostream license. If you are upgrading from Connection Broker 5.3, you must obtain a new license from Leostream.

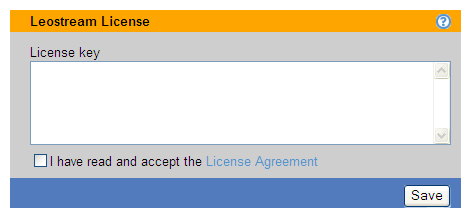
8. Select the **I have read and accept the License Agreement** option.
9. Click **Save**.
10. In the new Connection Broker, go to the > **System > Maintenance** page.
11. Select the **Restore** option.
12. Browse to the file you saved from your previous Connection Broker, and restore the database.

Your version 7.0 Connection Broker now contains all the information from your 5.3 version. Please, scan through the Web interface to ensure no information was lost. If you encounter problems, and have a current support contract or evaluation agreement, contact the support team at [www.leostream.com/support](http://www.leostream.com/support).

## Upgrade Instructions when Using a Microsoft SQL Server Database

If your 5.3.x Connection Broker runs with an external Microsoft SQL Server® 2005 database, upgrade to the 7.0 Connection Broker, as follows

1. Change the **Refresh Interval** of all your centers to **Manual**.
2. Shut down all 5.3.x Connection Brokers that point to your SQL Server database.
3. Back up your existing 5.3.x Connection Broker database.
4. Install a new 7.0 Connection Broker virtual appliance.
5. When you sign into the new Connection Broker, the **Leostream license** page, shown in the following figure, appears. Enter your new 7.0 license key.



**Note:** Connection Broker 7.0 will not accept a Connection Broker 5.x license key.

6. Select the **I have read and accept the License Agreement** option.

7. Click **Save**.
8. Again, in the > **System > Maintenance** page, select **Switch to another database** option.
9. Click **Next**.
10. Select the **Use a remote Microsoft SQL Server 2005/2008 database** option.
11. Enter the information for your existing 5.3.x Connection Broker data base. A warning appears, indicating that the 5.3.x database will be upgraded to the 7.0 format.
12. Accept the warning to upgrade the database. The upgrade is not reversible.

**Note:** Once the database is upgraded, it cannot be connected back to a 5.3.x Connection Broker.

Your version 7.0 Connection Broker now contains all the information from your 5.3 version. Scan through the Web interface to ensure no information was lost. If you encounter problems, and have a current support contract or evaluation agreement, contact the support team at [www.leostream.com/support](http://www.leostream.com/support).

## Upgrading from Version 5.2.x to Version 5.3.x

The upgrade to Connection Broker 5.3 from version 5.2 or earlier requires a reinstall of the Connection Broker virtual appliance. The following Web site contains the Connection Broker 5.3 virtual appliances.

[www.leostream.com/cb/index53sp3.php](http://www.leostream.com/cb/index53sp3.php)

To upgrade a version 5.1.x or 5.2.x Connection Broker to version 5.3, you must, first, update your 5.1 or 5.2 Connection Brokers to the latest 5.2.10 version.

### Upgrade Instructions when Using an Internal Database

If your 5.2.x Connection Broker runs with an internal database, upgrade to the 5.3.x Connection Broker, as follows.

1. Use the **Check for updates** option on the > **System > Maintenance** page to update the Connection Brokers to the latest 5.2 patch.
2. After you have updated your Connection Brokers to the latest 5.2.x patch, go to the > **System > Maintenance** page.
3. Select the **Download** option.
4. Click **Next**.
5. Save the Connection Broker configuration.
6. Shut down and back up your 5.2.x Connection Broker.
7. Download the Connection Broker 5.3 virtual appliance.
8. Install the 5.3 Connection Broker.
9. In the new Connection Broker, go to the > **System > Maintenance** page.
10. Select the **Upload** option.
11. Browse to the file you saved from your previous Connection Broker.

Your version 5.3 Connection Broker now contains all the information from your 5.2 version. Please, scan through the Web interface to ensure no information was lost. If you encounter problems, and have a current

support contract or evaluation agreement, contact the support team at [www.leostream.com/support](http://www.leostream.com/support).

## Upgrade Instructions when Using a Microsoft SQL Server Database

If your 5.2.x Connection Broker runs with an external Microsoft SQL Server® 2005 database, upgrade to the 5.3.x Connection Broker, as follows

1. Back up your existing 5.2.x Connection Broker database.
2. Shut down all 5.2.x Connection Brokers that point to this database.
3. Download the Connection Broker 5.3 virtual appliance.
4. Install the 5.3 Connection Broker.
5. In the new Connection Broker, go back to the > **System** > **Maintenance** page.
6. Select **Switch database**.
7. Select the **External database** option.
8. Enter the information for your 5.2.x Connection Broker data base. A warning appears, indicating that the 5.2.x database will be upgraded to the 5.3.x format.
9. Accept the warning to upgrade the database. The upgrade is not reversible.

**Note:** Once the database is upgrade, it cannot be connected to a 5.2.x Connection Broker.

Your version 5.3 Connection Broker now contains all the information from your 5.2 version. Please, scan through the Web interface to ensure no information was lost. If you encounter problems, and have a current support contract or evaluation agreement, contact the support team at [www.leostream.com/support](http://www.leostream.com/support).