

REMOTE ACCESS FOR ALL

User connections to anything – anytime, anywhere, from any device.



Leostream Release Notes

Manage user connections to anything – anytime, anywhere, from any device

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Connection Broker 9.0.38.3

Connection broker 9.0.38.3 is an update release to Connection Broker 9.0. This update is available for the latest point release of CentOS 7 and Red Hat Enterprise Linux 7.

 The Connection Broker does not install on CentOS or Red Hat Enterprise Linux version 8. Please contact support@leostream.com if you require support for one of these platforms.

Important note

Connection Broker 9.0.38 no longer supports the Connection Management Interface for PCoIP Remote Workstation Cards. You must use the PCoIP Broker Protocol to manage Remote Workstation Cards. To retain all Leostream features and functionality, you must also enable the Administrator Web Interface on all PCoIP Zero Clients and Remote Workstation Cards. Please contact support@leostream.com for more information prior to upgrading your Leostream environment.

Features

- **Component Upgrades:**
 - Leostream Agent for Windows – 7.3.3 adds support for launching and monitoring NICE DCV sessions
 - Leostream Agent for Linux – 5.1.4 adds support for launching and monitoring NICE DCV sessions along with improvements for monitoring NoMachine sessions on macOS
 - Leostream Connect for Windows 4.2.9 adds support for connecting to NICE DCV sessions
 - Leostream Connect for macOS and Linux 3.7.3 adds support for connecting to NICE DCV sessions and resolves issues launching HP Remote Boost connections through the Leostream Gateway
- **NoMachine support:** Leostream Protocol Plans can now be configured to send NoMachine connections through the Leostream Gateway
- **DCV support:** Leostream Protocol Plans now support the latest version of NICE DCV that is included with AWS EC2 instances
- **PCoIP support:**
 - Leostream logins are now supported when the identify on the PIV cards is linked to an Active Directory user via the `altSecurityIdentities` attribute

- The **Installed Protocols** column on the **> Desktops** page now distinguishes between desktops that use the PCoIP Remote Workstation Card and the PCoIP Cloud Access Software
- **Alerts:** The **> System > Alerts** page includes a new option to send an alert email when a Leostream Gateway goes offline
- **Locations:** Client locations can now be created using the Device and Client Software parameters
- The **Bulk Edit** feature for desktops now allows new **Notes** to be simultaneously added to multiple desktops.

Resolved Issues

- Follow-me mode now works for PCoIP connections to Remote Workstation Cards established through the Leostream Gateway
- The power state for Azure instances is more accurately reported when users power on machines using the Leostream Web client, resulting in fewer failed desktop connections
- Saving and testing RADIUS MFA now only validates the specified hostname and port, to avoid cases where the Connection Broker could not connect to the RADIUS server to validate the shared secret
- The Connection Broker now resends the command to join a desktop to a domain in the event the Leostream Agent is unreachable when the desktop first starts
- The `/admin` URL now correctly logs the user into the Connection Broker Administrator Web interface, if their role allows access
- Desktops marked as Unavailable or Duplicates no longer consume Leostream Desktop licenses.
- Resolves issues related to assigning policies when users are members of nested Active Directory groups
- UTF-8 characters can now be used for the message displayed using the **Additional text for right side of sign-in form** option on the **> System > Settings** page
- Users logging into Leostream with a username formatted as a `userPrincipalName` can now connect to their desktops using the Leostream HTML5 viewer.
- Center scans no longer fail if a desktop is deleted in the middle of the scan
- When defining pools based on LDAP attributes, the selected LDAP attributes are no longer duplicated when you edit the pool

- Properly block logins from a SAML Identify Provider with the **Assignments** table sets the **Default Policy** to **<None – prevent user login>**
- No longer log spurious warning messages about unknown PCoIP Host Cards for desktops with two PCoIP Remote Workstation Cards
- Session information is now transferred between Connection Brokers in a cluster over port 443 instead of port 80, resolving session expiration errors when port 80 is blocked
- Distinguish PCoIP software clients from zero clients to stop attempts to contact the Administrator Web Interface for PCoIP software clients
- No longer update desktop records when its list of IP addresses is reordered but otherwise identical to the list already in the Connection Broker, to avoid superfluous log messages
- Resolved poorly formatted error messages that could result if the policy was set to open the HTML5 connection in a new tab and the user's policy blocked the connection

Leostream Gateway 2.0.0.5

Version 2.0.0.5 addresses issues introduced in the updated Guacamole HTML5 viewer related to launching HTML5-based VNC sessions to macOS desktops.

Leostream Gateway 2.0.0.4

Version 2.0.0.4 of the Leostream Gateway addresses recent security concerns related to the HTML5 viewer. All Leostream customers are encouraged to upgrade to this version of the Leostream Gateway.

Resolved Issues and Enhancements

- The Apache Guacamole HTML5 viewer has been upgraded to version 1.2, to address the recently announced reverse RDP vulnerabilities
- New CLI options are available to enable and disable the Guacamole service, for environments that do not require the HTML5 Viewer
- Logging out of an HTML5 viewer session now redirects the user back to the Connection Broker login page or closes the browser tab, based on the user's policy setting

Connection Broker 9.0.36.5

Connection broker 9.0.36.5 is a patch release to Connection Broker 9.0.36.0. This update is available for the latest point release of CentOS 7 and Red Hat Enterprise Linux 7.

Important notes:

- Connection Broker 9.0.36 is the last version of the Leostream Connection Broker that will support the Teradici Connection Management Interface (CMI) used by older firmware versions.

Please plan to upgrade your PCoIP Zero client and Remote Workstation Card firmware to version 20.x.x before upgrading to future Leostream releases.

- Connection Broker 9.0.36 is not available for Ubuntu or SUSE operating systems. For more information on the Leostream roadmap to support those operating systems, please contact info@leostream.com.


Issue Resolutions and Minor Features


- **Leostream Agent for Windows - version 7.2.12** – Updates OpenSSL to version 1.1.1g and improves detection of changes to the Connection Broker address in the DNS SRV record
- **Leostream Agent for Linux and macOS – version 5.0.15** - Resolves issues detecting MAC addresses for machines using Infiniband cards and allows simultaneous communication with Connection Brokers discovered using the DNS SRV record and all Connection Brokers manually entered into the `leostreamagent.conf` file
- **PCoIP support**
 - Resolves issues related to using Leostream with the 20.x.x versions of Teradici firmware, and higher
 - The Leostream Connect client can now launch the Teradici PCoIP Software client to connect to Remote Workstation Cards through the Leostream Gateway
- **Verge.io support** – Added the Refresh interval and other standard options to Verge centers
- **Google Cloud Platform** – Provisioning and deleting instances in Google Cloud Platform is now fully supported
- **Leostream Gateway support**
 - Addresses specified on the > **Setup** > **Gateways** page now support an `IP:port` syntax

- Additional logging is now available when HTML5 connections are established through the Leostream Gateway
- You can now specify the VNC port to use for HTML5 VNC sessions through the Leostream Gateway
- **Leostream Web client**
 - Desktop icons now reflect the desktop's power state
 - Resolves an issue where the Web client would crash if a pool did not have an available resource to offer to the user and the user's policy was set to inform the user about empty pools
- Resolved issues when using UTF-8 (double-byte) characters for > **System > Settings**
- No longer release long-standing assignments if reconnecting to a disconnected session fails

Connection Broker 9.0.36.0


Connection Broker 9.0.36.0 is an update release for Connection Broker 9.0. This update is available for the latest point release of CentOS 7 and Red Hat Enterprise Linux 7.

 The Connection Broker does not install on CentOS or Red Hat Enterprise Linux version 8. Please contact support@leostream.com if you require support for one of these platforms.

 Leostream updated the Connection Broker RAM recommendations from 2GB to 4GB. Connection Brokers running on a machine with 2GB or RAM may be updated to version 9.0.36, however Leostream recommends scheduling an upgrade to the available RAM in advanced of features scheduled for upcoming Leostream releases.

This release includes the following enhancements and issue resolutions when compared to Connection Broker version 9.0.34.25.

Important Notes

 Support for Excel Web queries and for the PCoIP Connection Management Interface have been removed in Connection Broker 9.0.36. If you require support for either of these features, please contact support@leostream.com.

This release contains a beta version of the initial RESTful API for Connection Broker configuration. Please contact support@leostream.com if you are interested in testing this functionality.

Connection Broker Features

- **Leostream Platform Components**
 - **Leostream Gateway 2.0.0.1** – see [Leostream Gateway 2.0.0.1](#) Features
 - **Leostream Connect 4.2.7 for Windows operating systems** – Supports new two-step MFA login for RADIUS servers and resolves the following issues:
 - The `-clearuser` flag now completely clears out the Username field
 - The **Options** menu now appears when installing in German
 - **Leostream Connect 3.6.2 for Linux and macOS:**
 - Supports new two-step MFA login for RADIUS servers
 - Adds support for installing and running in read-only directories

- **Leostream Agent 7.2.7 for Windows operating systems:**
 - Improved support for provisioning from sysprepped images
 - No longer require a restart to register with new Connection Brokers after the DNS SRV record is updated to point to a new broker
- **Leostream Agent 5.0.12 for Linux and macOS** – Resolved issues related to using Connection Broker DNS SRV records, such as requiring a restart to register with new Connection Brokers after the DNS SRV record is updated
- **Leostream Gateway Features**
 - Protocol plans for Leostream Connect now support sending rdesktop client connections through the Leostream Gateway
 - Protocol plans for the HTML5 viewer added additional keyboard layouts
 - Protocol plans for Teradici Zero clients now allow PCoIP connections to PCoIP Remote Workstation Cards to be port forwarded through the Leostream Gateway
- **PCoIP**
 - PCoIP Zero Client logins now support authentication using PIV/CAC smart cards (requires the latest Teradici firmware version on the Zero Client)
 - The Leostream 8.2 feature to manage another user’s desktop is now supported for the latest version of the PCoIP Zero client firmware
 - Disconnect PCoIP connections using the Remote Workstation Cards, in the event the PCoIP Zero client isn’t reachable by the Connection Broker
 - Send Wake-on-LAN packets to PCoIP Remote Workstation Cards, to power on physical workstations
- **Mechdyne TGX:**
 - The TGX encryption tool for user credentials now supports TGX 2.0
 - The {CREDENTIALS_MECHDYNE} dynamic tag now supports additional qualifiers to indicate if Leostream should force lower case or domain logins
- **HP RGS / Remote Boost:** Protocol plans for Leostream Connect now support specifying a generic password to use for the RGS connection, in addition to a user name
- **Multi-factor authentication** (see the Leostream guide for [Using RADIUS Servers for MFA with Leostream](#))

- RADIUS servers are now configured on the > **Setup** > **MFA Providers** page
- MFA requirements using RADIUS can now be assigned to groups of users on the > **Configuration** > **Assignments** page, instead of applying globally to all users
- **Scale Computing HC3** (See the [Quick Start Guide for Scale Computing HC3](#))
 - Leostream now fails over between all nodes in the Scale Computing HC3 cluster associated with a Center
 - Scale Computing centers now allow you to specify a custom HC3 tag for your master virtual machines
 - Scale Computing tags assigned to the master virtual machine in HC3 are now applied to any new virtual machine provisioned from that instance
- **Verge:** Added support for creating centers for Verge virtualization software (see “Verge Centers” in Chapter 6 of the [Connection Broker Administrator’s Guide](#))
- **Cloud Support:** Additional regions have been added to AWS and Azure centers
- **Provisioning:** Pool logic includes general enhancements for provisioning large numbers of virtual machines
- **Email Alerts and SMTP**
 - SMTP servers are now configured on the > **Setup** > **SMTP** page, instead of on the > **System** > **Alerts** page
 - Administrators can now allow end users to send email invitations to users who receive collaboration requests
- **Roles:** Roles include a new option to set a session expiration for logins to the Connection Broker Administrator Web interface
- **SSO:** The policy **Enable single sign-on to desktop console** option now applies to Windows NoMachine and VNC sessions
- **Sign in Page Customizations:** You can now use the custom.css file to add persistent customizations to your Leostream Sign In Web page
- **Release Plans:** Add 14 days as an option for releasing the desktop after initial assignment
- **Test Login:** Now includes an option to test the user’s RADIUS-based MFA
- **Licensing:** Licensed Leostream features can now be displayed using the “click here for complete license information” link on the > **System** > **Maintenance** page

Leostream Gateway 2.0.0.1

- Supports port forwarding connections from PCoIP Zero clients to PCoIP Remote Workstation Cards
- Resolved issues related to using the touch screen on iOS 13 and later
- Explicitly drop UDP ports that were erroneously left open in previous gateway versions
- Loosen checks on enabling Connection Broker forwarding, to avoid errors about and invalid Connection Broker address or SSL not being enabled in cases where the Connection Broker is not currently able to communicate with its authentication servers or database

Resolved Issues

- Resolve duplicate desktop records using all known MAC addresses instead of just the primary MAC address, to resolve issues identifying Leostream Agent registrations from nodes on an HPE Moonshot cartridge
- Usability improvements to remove additional scroll bars from long Resources tables
- No longer send the desktop hostname as the domain when logging local users into a Linux RGS session
- No longer allow virtual machines that are marked for replication to be used as templates for provisioning in Scale Computing HC3
- The Leostream Agent Status column on the > **Resources** > **Desktops** page is no longer blank when the Power Status column is hidden on the page
- Close forwarded ports on the Leostream Gateway when users log out of hard-assigned desktops
- Add the **Query for LDAP group information** option to the **Edit Authentication Server** page, to provide an option to turn off slow group queries for extremely large Active Directory trees
- Uploading a new favicon.ico file no longer removes the existing custom logo file

Leostream Gateway 1.0.0.32 Update

Resolves issues with missing dependencies for the HTML5 RDP viewer when installing on certain releases of CentOS or Red Hat Enterprise Linux 7. This update also resolves issues where forwarded UDP ports were not being closed when desktop assignments were released.



The Connection Broker and Connection Broker do not install on CentOS or Red Hat Enterprise Linux version 8, or on Ubuntu 18.04. Please contact support@leostream.com if you require support for one of these platforms.

Connection Broker 9.0.34.25 Update

Connection broker 9.0.34.25 is a patch release to Connection Broker 9.0.34.22. This update is available for the latest point release of CentOS 7 and Red Hat Enterprise Linux 7, as well as for Ubuntu 16.04.



The Connection Broker does not install on CentOS or Red Hat Enterprise Linux version 8, or on Ubuntu 18.04. Please contact support@leostream.com if you require support for one of these platforms.

This release includes the following changes.

- **Leostream Gateway 1.0.0.29** – Upgrades the underlying Apache Guacamole clientless remote access gateway to version 1.1.0, which resolves previous issues when using FreeRDP version 2



The Leostream Gateway installs on CentOS or Red Hat Enterprise Linux version 7, only.

- **PCoIP**
 - Support local and domain user logins when using the policy option to enter alternate credentials for the remote desktop
 - Zero clients now display **Reconnect** if an offered desktop is already assigned to the user
 - The new **Use web browser cookies to prevent session hijacking** option in the Connection Broker Security section of the > **System** > **Settings** page, disables cookies, which can resolve issues with lost sessions when load balancing a Connection Broker cluster through the Teradici PCoIP Connection Manager
- Resolved a regression that caused Release Plan option **Release if user does not log in** to release the machine even after the Leostream Agent notified the Connection Broker that a user had logged in

Connection Broker 9.0.34.22 Update

Connection broker 9.0.34.22 is a patch release to Connection Broker 9.0.34.21. This update is available for the latest point release of CentOS 7 and Red Hat Enterprise Linux 7, as well as for Ubuntu 16.04.

This release includes the following changes.

- The Leostream Agent for Windows operating systems has been updated to version 7.1.15, which includes minor updates related to how the agent registers with the Connection Broker
- Hard-assigned desktops are no longer deleted when the user's policy-assigned desktops have a release plan set to delete the virtual machine
- Release plan options to release the desktop after a specified elapsed time are now honoured even when the user disconnects and reconnects from different client devices
- A desktop's **Connected** state is now properly reverted to **No** if the HP RGS Receiver fails to connect to the selected RGS Sender
- You can no longer select the Human Interface Devices category when selecting devices to support for USB passthrough
- Desktops no longer get cause in an Unavailable state after being joined to a domain
- Pools allow you to provision additional AWS instance sizes, including `inf1.`, `m6g.`, `c5d.12xlarge`, `c5d.24xlarge`

Connection Broker 9.0.34.21 Update

Connection broker 9.0.34.16 is a patch release to Connection Broker 9.0.34.10. This update is available for the latest point release of CentOS 7 and Red Hat Enterprise Linux 7, as well as for Ubuntu 16.04.

This release includes the following changes.

Issue Resolutions and Minor Features

- **Appliance:**
 - Apache has been updated to 2.4.41
 - Addressed issues upgrading a database from an 8.2 installation to 9.0
 - Added ability to use plaintext passwords in `db_info` to connect to a remote database when scripting Connection Broker installations
- **Component Upgrades:**
 - Leostream Agent for Windows – 7.1.14 – Improved detection of disconnect events from PCoIP software clients
 - Leostream Agent for Linux – 5.0.9
 - Monitor disconnect and connect events for PCoIP Cloud Access Software
 - Installing the Leostream Agent using an XML-file of configuration parameters now correctly sets all options

NOTE: You must generate a new XML-file to use for future installations

 - Leostream Connect for macOS and Linux – 3.5.13 – Resolved issues related to launching the **Configure** dialog when allowing users to set display protocol parameter settings
- **Web client:** The web client now provides a **Start** or **Stop** option, along with **Restart**, if the user's role and policy allows them to power control their offered desktops
- **AWS:**
 - Added support for ap-east-1 and me-south-1 regions
 - Added support for new instance types, such as g4dn
- **Azure:**
 - All shutdown and power off options now return Azure VMs to a deallocated state

- Azure centers can now inventory subscriptions with more than 50 images or virtual machines
- **Scale Computing:**
 - Improved error handling during provisioning
 - Leostream Agent registrations from virtual machines tagged as templates are now ignored
- **Policies**
 - You can now block the user's login if the URL to call at the start of a user's session returns an error.
 - You can now specify a custom URL to call at the time a desktop is assigned from a pool
 - You can now specify a custom timeout for URLs called in policies
- **Provisioning:** Virtual machines are no longer removed from the Connection Broker inventory if they fail to delete from their hosting platform after being released from a user
- **Printers:** Do not delete inventoried printers if Connection Broker cannot contact the Active Directory server associated with the Printer center.
- **Power Control:** The Connection Broker now properly cancels scheduled `reboot_after_idle` jobs when the user logs back into their desktop

Connection Broker 9.0.34.10 Update

Connection broker 9.0.34.10 is a patch release to Connection Broker 9.0.34. This release includes the changes indicated in the following sections.

Issue Resolutions and Minor Features

- Upgrades the Apache Web Server to version 2.4.39.
- Adds support for scrambling passwords for VNC servers that support passwords longer than eight characters.
- Resolves issues related to properly matching login events from PCoIP zero clients to existing records on the > **Resources** > **Clients** page.

Connection Broker 9.0.34.7 Update

Connection broker 9.0.34.7 is a patch release to Connection Broker 9.0.34. This release includes the changes indicated in the following sections.

Issue Resolutions and Minor Features

- **Locations:** Client Locations can now be created using CIDR notation.
- **MFA:** The Connection Broker now honors any selection in the **Default MFA Provider** drop-down menu in the **Assignments** tables.
- **Leostream Gateway:** Protocol plans for the HTML5 Viewer now contain a **Disable the viewer menu** option to indicate if the Guacamole sidebar menu should be disabled for this user's connection.
- **Administrator View:** Resolved various issues related to navigating to and between the Administrator Web interface of different Connection Brokers in a cluster.
- **Licensing:** Leostream licenses are now released one month after the last user sign in or desktop connection, instead of after six months.

Leostream Gateway 1.0.0.27

- Upgraded the underlying HTML5 remote access client to Apache Guacamole 1.0.0.
- Supports Connection Broker protocol plan option to disable the Guacamole sidebar menu when establishing the HTML5 connection.
- Incoming HTTP requests are now automatically forwarded to HTTPS.
- Resolved timing issues that could cause Apache to fail to boot when running the Leostream Gateway on slower machines.

Connection Broker 9.0.34.5 Update

Connection broker 9.0.34.5 is a patch release to Connection Broker 9.0.34. This release includes the following issue resolutions

- **PCoIP Remote Workstation Cards:**
 - New Remote Workstation Cards that are uploaded without a name will have their hostname displayed in the **PCoIP Host Device** drop-down menu in the **Edit Desktop** page. Previously, these cards displayed with no name.

- Improved error messaging when CSV file used to upload PCoIP Host Devices contains invalid fields.
- **PCoIP Zero Clients:** Improved detection of existing client records when a zero client login registers with the Connection Broker.
- **VNC:** Do not attempt to start a new VNC session if the user's protocol plan does not use the `{VNC_PORT}` dynamic tag. Instead, assume a VNC session already exists for the hard-coded session number.
- **Updates:** Resolved issues related to restarting Apache after a Connection Broker update on a slow machine.

Connection Broker 9.0.34.4 Update

Connection broker 9.0.34.4 is a patch release to Connection Broker 9.0.34. This release includes the following features and issue resolutions.

- **Leostream Gateway 1.0.0.26** - The Leostream Gateway RPM file now blocks attempts to install the Leostream Gateway on a machine with an installed Leostream Connection Broker.
- **Leostream Connect for Linux and macOS 3.5.9** – Resolves issue where passwords for rdesktop connections could be logged in plain text in the `lc.log` file.
- **AWS Centers** – Added support for ap-northeast-3 (Osaka-Local), eu-west-3 (Paris), eu-north-1 (Stockholm) regions, as well as new m5ad and r5ad instances types.
- **Azure Centers** – You can now specify if the network card for newly provisioned virtual machines is placed in the resource group of the original virtual network or in the resource group specified for the new virtual machines.
- **Active Directory Centers** – Resolved issues related to inventorying computer records from a particular sub-tree.
- **PCoIP**
 - The secondary authentication dialog now applies to PCoIP connections to workstations with an installed PCoIP Remote Workstation Card.
 - Resolved issues communicating with zero clients running firmware version 4.x and using the Connection Management Interface.

Connection Broker 9.0.34.2 Update

Connection broker 9.0.34.2 is a patch release to Connection Broker 9.0.34. This release includes the following features and issue resolutions.

- **Leostream Gateway 1.0.0.25**
 - The leostream-gateway CLI includes a new option to enable Azure API forwarding
 - When adding a Leostream Gateway to the Connection Broker, you can now specify the method to use to forwards traffic through the gateway
- **Leostream Connect 4.1.8** – The client now allows you to configure the Leostream Connect short cut keys.
- **Azure:** Azure API forwarding is now enabled via a checkbox in the Azure center. When enabled, Leostream selects any Leostream Gateway that enables Azure API forwarding, and fails over to a different Leostream Gateway in the event the original gateway is unavailable.
- **Red Hat:** Newly provisioned virtual machines in a Red Hat Virtualization center are now powered on, by default.
- **PCoIP:**
 - The secondary authentication dialog for PCoIP clients now supports launching connections when more than 10 desktops are offered.
 - The PCoIP Devices center is now automatically added when you install a Leostream license key with PCoIP enabled.
- **RADIUS:** Resolves an issue with Radius authentication caused by an update to the underlying Radius library.

Connection Broker 9.0.34 Update

Connection broker 9.0.34 is an update Connection Broker 9.0.10. This update includes the following features and issue resolutions.



The Leostream Software License Agreement has been updated. Please see <https://www.leostream.com/perpetual-software-license-agreement/> for details.

Leostream Component Updates

- Leostream Connect Windows 4.1.5 – The **Refresh offer list before displaying to user** option is now honored every time the **Connect** dialog is opened
- Leostream Agent Windows 7.1.10 – TGX sessions are now properly tracked for remote Windows connections
- Leostream Connect Linux/macOS 3.5.8 – Contains usability enhancements when using on macOS
- Leostream Agent Linux 5.0.4 - Introduces new public key exchange to secure communication with Connection Broker 9.0.

Leostream Agent 5.0 for Linux and macOS is not compatible with Connection Broker 8.2.72 or earlier.

Features

- **Authentication**
 - Multi-factor authentication is now supported for any SAML-based third-party identity providers, such as Ping Identity and Microsoft Active Directory Federated Services (see Using [SAML-Based Identity Providers with Leostream](#))
 - **Multi-factor authentication (MFA) with Duo Security** notifications can now be enabled for groups of Leostream users (See [Duo MFA for Leostream Logins](#))
 - The default local Connection Broker **admin** account can now be disabled (see [Advanced Settings](#) in the guide for [Using the Leostream Connection Broker Console](#))
- **Centers**
 - **Red Hat Virtualization** can now be added as a center in Leostream, with support for inventorying, power control, provisioning, and connecting users to resources

hosted in a Red Hat environment (see **Red Hat Virtualization Centers** in Chapter 6 of the [Connection Broker Administrator's Guide](#))

- The **Scale Computing HC3 virtualization platform** can now be added as a center in Leostream, with full support for VDI environments on this hyperconverged platform, including inventorying, power control, provisioning, and connecting users (see the [Quick Start Guide for Scale Computing HC3](#))
 - **Google Cloud Platform** can now be added as a center in Leostream, with support for inventorying, power control, and connecting users to resources hosted in GPC (see **Google Cloud Platform Centers** in Chapter 6 of the [Connection Broker Administrator's Guide](#) - Note: provisioning will be available in an upcoming release)
 - You can now specify a Region when creating an OpenStack center, to support OpenStack deployments with custom regions (see **OpenStack Centers** in Chapter 6 of the [Connection Broker Administrator's Guide](#))
 - The usability of creating multi-user centers has been improved (see **Remote Desktop Services / Multi-User Centers** in Chapter 6 of the [Connection Broker Administrator's Guide](#))
- **Databases**
 - You can now attach the Connection Broker to an Azure SQL database (see **Connecting to an Azure SQL Database** in Chapter 17 of the [Connection Broker Administrator's Guide](#))
 - The Connection Broker now allows you to specify any secondary database as a failover database, instead of requiring you to configure SQL Server mirroring (see "Database Failover" in the [Leostream Connection Broker Application Guide](#))
 - **Provisioning:** Provisioning limits in pools can now be enforced at certain times and days of the week (see **Provisioning Based on Time-of-Day** in the [Connection Broker Administrator's Guide](#))
 - **Azure:** The Connection Broker now forwards Azure API traffic through the Leostream Gateway when Connection Broker logins are forwarded to the Leostream Gateway (requires Leostream Gateway 1.0.0.24)
 - **PCoIP Remote Workstation Cards**
 - Release plan options based on disconnect events can now be executed for workstations with an installed PCoIP Remote Workstation Cards running firmware version 5.x
 - Client binding is now supported for PCoIP Zero clients running firmware version 5.x and later, providing octal monitor support for Amulet Hotkey zero clients

- You can now force end users to accept a disclaimer as part of the authentication process on a PCoIP client
- Leostream policies can force the user to enter a second set of credentials to use for single sign-on to a PCoIP remote resource
- **Clients:** The > **Clients** page provides a new column to display the installed display protocol clients and their version (see “Available Client Characteristics” in Chapter 13 of the [Connection Broker Administrator’s Guide](#))
- **Backups:** SFTP is now available as a transfer protocol when backing up the Connection Broker internal database (see “Scheduling Connection Broker Backups” in Chapter 17 of the [Connection Broker Administrator’s Guide](#))
- **Security:**
 - The new **Enable Strict-Transport-Security header (HSTS)** option on the > **System > Settings** page allows you to instruct the Connection Broker to enforce strict transport security and sets the expiration time for when the Connection Broker can be accessed using only HTTPS (see “Configuring TLS Version” in Chapter 3 of the [Connection Broker Administrator’s Guide](#))

Leostream Gateway 1.0.0.24 Update

Leostream Gateway 1.0.0.24 is a patch update to version 1.0.0.19. It is compatible with Connection Broker 9.0.34. This version of the Leostream Gateway supports Azure API forwarding.

Resolved Issues

- Wake-on-LAN packets are now sent from every broker in your Leostream cluster, to improve powering on machines across subnets
- Apache has been updated to 2.4.38 and the Apache configuration has been modified to use more restrictive conditions

Leostream Gateway 1.0.0.19 Update

Leostream Gateway 1.0.0.19 is a patch update to version 1.0.0.17. It is compatible with Connection Broker 9.0.10.

This version of the Leostream Gateway resolves issues related to launching HTML5 RDP connections to Windows 10 or Windows Server 2016 operating systems that have Network Level Authentication enabled for RDP.

Connection Broker 9.0.10 Update

Connection broker 9.0.10 is a minor update to the initial release of Leostream 9. This update includes the following features and issue resolutions.

Features

- The new **Control** action for multi-user centers allows you to power cycle the server associated with the center. The individual sessions for a multi-user center no longer offer individual **Control** actions.
- The Role option to log users into the remote desktop as either a local or domain users can now be specified per pool in a policy.
- The default NX configuration file in protocol plans now supports the NoMachine Enterprise Client version 6.2, and the default VMware View client command line parameters now support version 2.3.3 or higher.
- Pools of AWS T3 instances can now be provisioned.
- You can now create protocol plans that do not provide any protocol option for specific client types. This allows you to prohibit users from launch desktop connections from certain clients, such as from the Leostream Web client.
- The Connection Broker can now automatically send email alerts for certain events, such as when centers go offline (see “Sending Email Alerts” in Chapter 16 of the [Connection Broker Administrator’s Guide](#)).

Resolved Issues

- Connection closed events are now interpreted as a disconnect, and the associated Release Plan actions are taken, in cases where the user never logged into their assigned desktop.
- Multi-user sessions assigned to users are now evaluated when a Leostream Agent restart occurs. If an active session is not found for an assigned user, the Connection Broker now releases that session.
- Deallocated Azure instances are now considered as available to power on, to meet the pool’s power management threshold.
- The Connection Broker allows more time for Leostream Agents to respond, to lower the chances of agents being marked as Unreachable in high-latency environments.
- The favicon now correctly appears in the browser tabs after logging into the web client.

- The logs now contain the full JSON response returned by the Azure APIs when an error is returned to the Connection Broker.
- The Connection Broker no longer removes the images inventoried from an Azure center if Azure returns an error or empty list. This ensures that, on a subsequent successful call to Azure, existing pools continue to provision with the previously selected image.
- The **Deploy from image** drop-down menu in pools now defaults to **<Select>** instead of the first image in the list.
- The logs now contain the errors output from the LDAP queries when a user bind fails.
- Resolves rendering issue of drop-down menus on Internet Explorer 11.

Leostream Component Updates

Leostream component upgrades are available to resolve the following issues.

- **Leostream Connect 4.0.6** for Microsoft Windows Operating Systems
 - The installation package can now install Leostream Connect and the Leostream USB drivers on the latest updates of Windows 10 desktops that enable Secure Boot.
 - The Leostream Connect system tray menu contains a new **Login using Windows credentials** option when the client is installed with the client-side single sign-on, allowing users to log back into Leostream after they exit their initial session.
 - Resolves an issue opening the **Configuration** dialog for protocol parameters.
 - Supports launching the latest VMware Horizon client.
- **Leostream Agent 7.0.5** for Microsoft Windows Operating Systems – The installation package can now install the Leostream Agent and Leostream USB drivers on the latest updates of Windows 10 desktops that enable Secure Boot.
- **Leostream Agent 4.3.23** for Linux and macOS
 - Resolves an issue disconnecting RGS 7.4 sessions based on idle time settings.
 - The new `sso_desktop` parameter allows you to specify the window manager used for single sign on.
 - The Leostream Agent now reports the port associated with the user’s VNC session when you click **Status** on the Connection Broker > **Resources** > **Desktops** page.
 - If a user has an open SSH session to a desktop, and establishes an RGS or VNC connection to that desktop using Leostream, forcefully logging the user out of their

RGS or VNC session no longer closes their SSH session.

Connection Broker 9.0 – Initial Release Notes


Connection Broker 9.0 is the next major release of the Leostream Connection Broker. It includes a new user interface and licensing scheme, as well as new Leostream Connect and Leostream Agent components and a new Leostream Gateway.

Connection Broker 9.0 includes all the issue resolutions and features available in the latest 8.2 version. For a full list of recent changes in 8.2, see the Connection broker 8.2 Release Notes.

Important Notes

You cannot upgrade your existing Connection Broker 8.2 virtual appliance to version 9.0. You must build a new Leostream Connection Broker and obtain a new license key from sales@leostream.com.

After building your 9.0 Connection Broker and applying your new license, you can copy over your existing 8.2 configuration, to simplify the upgrade process. You must be running Connection Broker 8.2.37 or higher to copy your existing Connection Broker database to 9.0.

 Leostream Agent 7.0 for Windows operating systems is *not* compatible with Connection Broker 8.2.72 or earlier.

Connection Broker 9.0 supports Mechdyne TGX version 1.10. To use older versions of TGX, please remain on Connection Broker 8.2.

Unsupported Connection Broker 8.2 Functionality

The following Connection Broker 8.2 features are no longer supported in Connection Broker 9.0. Leostream will continue to support version 8.2 for our existing customers. See the Leostream [Product Lifecycle page](#) for information on support dates for previous Connection Broker versions.

- Supported hosted platforms – The following platforms are no longer supported or are in the process of being deprecated.
 - Citrix XenApp and XenDesktop
 - Citrix XenServer
 - Open source Xen
 - Red Hat Enterprise Virtualization 3.x, including the SPICE display protocol
 - Microsoft Hyper-V 2012
- Connection Broker Skins no longer set form colors in the Administrator Web interface. Contact support@leostream.com for information on using customized CSS-files to modify the look-and-feel of the Connection Broke Web interface.
- The Policy Report and User Connection History report are no longer available. Use the

improved User Assignment Report for detailed information about desktop usage per user.

- The Policy option to store assignment and connection information is no longer available for use with Leostream Connect for Linux and macOS.
- Display plans are no longer available. Instead, use the multi-monitor support natively provided by your chosen display protocol.
- Failover plans and failover desktops are no longer available. Use Backup Pools for all desktop failover needs.
- The Java NX client is no longer available in Protocol Plans for NX connections launched from a Web client login.
- Mechdyne TGX version 1.9 or older.

Leostream Component Updates

- Leostream Connect for Microsoft® Windows® Operating Systems – Version 4.0.2
 - Provides support for USB redirection through the Leostream Gateway
 - Resolves issue where user pressing Ctrl-Shift-X wasn't breaking out of Shell mode
- Leostream Agent for Microsoft® Windows® Operating Systems –Version 7.0.4
 - Introduces new public key exchange to secure communication with Connection Broker 9.0.
 - Resolve issues identifying users in sub-domains.



Leostream Agent 7.0 is not compatible with Connection Broker 8.2.72 or older.



The Java versions of Leostream Connect and the Leostream Agent were not upgraded between the Connection Broker 8.2 release and Connection Broker 9.0.

Connection Broker 9.0 Features


- The Connection Broker is packaged for installation on a CentOS, Red Hat Enterprise Linux, Ubuntu, and SUSE Linux Enterprise Server operating system. Manage updates for the underlying operating system independently of your Connection Broker.
- Connection Broker 9.0 introduces a new design for the Administrator and End User Web interfaces. The Administrator menu has been reorganized to improve usability.
- Version 9.0 also introduces a new Leostream licensing scheme. You are issued a Leostream Serial number, which you can use to generate your Leostream license. Your Leostream

license controls the functionality available in the Administrator Web interface.

At any time, you can contact sales@leostream.com to discuss adding functionality to your Leostream license. Additional licensing fees may or may not apply.

- The Connection Broker and Leostream Agent for Windows now use a public/private key exchange to verify communications.
- Connection Broker 9.0 can be immediately attached to an external Microsoft SQL Server or PostgreSQL database after installation, avoiding the need to re-enter your Leostream license in the cluster.
- Protocol plans now provide Leostream Gateway support for RGS and TGX connections launched from Leostream Connect, as well as RDP connections launched from a Dell Wyse ThinOS client.
- Users can now send invitations to collaborate on their existing Mechdyne TGX connections.
- A new > **Resources** > **Images** page lists all images available for provisioning in Leostream pools
- You can now specify a domain when creating an OpenStack centers.
- The provisioning logic in Connection Broker 9.0 now allows many desktops to be simultaneously provisioned, instead of running serially.
- For cloud environments, you can specify additional provisioning parameters, including:
 - OpenStack – Set the security groups and availability zone
 - Azure – Use new image formats and specify security groups
 - AWS – Provision T2 unlimited instances and set an IAM role on the instance
- Role enhancements – separate role for downloading logs and add role for permission to remove users
- NIS authentication now supports SHA 512 for NIS passwords and allows policies to be assigned based on the user's `netgroup` membership.
- The Connection Broker now logs out rogue when an already-assigned user requests a connection to the desktop, not just upon the initial assignment.
- The Connection Broker no longer store Leostream Agent registrations if there is no Uncategorized Desktops center. To register desktops using the Leostream Agent, first create the uncategorized Desktops center and then install or restart your Leostream Agents, ensuring that they are pointing at your Connection Broker.

Leostream Gateway 1.0.0.17

 The Leostream Gateway described in this document is for use with Connection Broker 9.0. You cannot upgrade the Leostream Gateway for Connection Broker 8.2 to the 9.0-compatible version.

- The HTML5 viewer now supports SSH and VNC HTML5 connections, as well as RDP.
- The Leostream Gateway can forward user login traffic to your Connection Broker, allowing you to isolate your Connection Broker in the same network as your desktops.
- The Leostream Gateway includes a new Command Line Interface for configuring certain gateway functionality, such as limiting the ports used by the Leostream Gateway and installing SSL certificates.
- The Leostream Gateway now enables UDP for RDP connections.
- You can use Connection Broker protocol plans to set additional parameters for HTML5 RDP connections.

Appendix A: Version Compatibility

Leostream Agent Compatibility Matrix

The following table indicates the Leostream Agent versions that are compatible with the different Connection Broker versions. Connection Brokers cannot communication with incompatible Leostream Agents, resulting in a loss in Leostream functionality.

Connection Broker	Version	8.1	8.2.71 and earlier	8.2.73	9.0.34.10	9.0.34.21 and later
Leostream Agent for Windows	5.x	Y	Y	N	N	N
	6.x	Y	Y	Y	Y	N
	7.0	N	N	Y	Y	Y
	7.1	N	N	Y	Y	Y
	7.2+	N	N	Y	Y	Y
Leostream Agent for Linux	3.x	Y	Y	N	N	N
	4.x	Y	Y	Y	Y	N
	5.x	N	N	Y	Y	Y

- Leostream Agent versions older than 5.0 for Windows and 3.0 for Linux are not compatible with any supported Connection Broker.

Leostream Connect Compatibility Matrix

The following table indicates the Leostream Connect versions that are compatible with the currently supported Connection Broker versions.

Connection Broker	Version	8.1	8.2	9.0
Leostream Connect for Windows	3.8	Y	Y	Y
	4.0	N	Y	Y
	4.1	N	Y	Y
	4.2+	N	Y	Y
Leostream Connect for Linux	3.3	Y	Y	N
	3.4	Y	Y	Y
	3.5	N	Y	Y
	3.6+	N	Y	Y

- Connection Brokers older than 8.1.44 are compatible only with Leostream Connect 3.6.18 or earlier on Windows operating systems.
- Not all features supported by the latest Leostream Connect version are available when using an older Connection Broker version.