



# **Connection Broker**

**Managing User Connections to Workstations and  
Blades, OpenStack Clouds, VDI, and More**

## **Leostream Gateway Guide**

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Leostream software is protected by U.S. Patent 8,417,796.

# Contents

Contents	3
Overview	3
Installing the Leostream Gateway	3
Integrating with the Connection Broker	5
Creating HTML5 RDP Protocol Plans	6
Using Leostream to Proxy Connections	6
Working with RDP	6
Working with HP RGS	7
Using Load Balancers	8
Using the HTML5 Viewer	9
Copy and Paste	9
File Transfer	9
Local Printing	10

## Overview

The Leostream Gateway provides HP RGS, RDP, and HTML5-based RDP access to desktops managed by the Leostream Connection Broker. When you use the HTML5 RDP capability in the Leostream Gateway for desktop connections, the user's client device does not require any installed software beyond a web browser.

All desktop connections established through the Leostream Gateway do not need an IP address that is accessible from the client device. Desktops can, for example, be encapsulated in a private OpenStack network that only the Leostream Connection Broker and Leostream Gateway can access.

The Leostream Gateway requires the Leostream Connection Broker 8.2, or higher.

This document covers topics related to installing the Leostream Gateway, configuring protocol plans to use the gateway, and using the HTML5 RDP viewer. For complete instructions on configuring the Leostream Connection Broker, consult one of the Quick Start Guides or the Connection Broker Administrator's Guide, available on the [Leostream Documentation](#) page.

## Installing the Leostream Gateway

The Leostream Gateway is packaged as an RPM-file that installs on a 64-bit CentOS 7 or Red Hat Enterprise Linux 7 operating system. The Leostream Gateway can be installed on a virtual or physical system. To download the Leostream Gateway RPM file, go to:

[http://downloads.leostream.com/leostream-gateway-1-11.x86\\_64.rpm](http://downloads.leostream.com/leostream-gateway-1-11.x86_64.rpm)

The following procedure describes how to install the Leostream Gateway. To upgrade an existing Leostream Gateway, skip to step 6.

1. Provision a new 64-bit CentOS 7 or Red Hat Enterprise Linux 7 operating system. For example, if installing in an OpenStack environment, you can use the CentOS 7 image available at the following link:

[http://cloud.centos.org/centos/7/images/CentOS-7-x86\\_64-GenericCloud.qcow2](http://cloud.centos.org/centos/7/images/CentOS-7-x86_64-GenericCloud.qcow2)

2. Ensure that the network on the CentOS 7 machine is configured so that the user's clients can access the Gateway and the Gateway can access the remote desktops. In a cloud environment, this typically requires, a) the virtual machine be provisioned in the private network that contains the desktop and b) the virtual machine be given a floating (or publicly accessible) IP address.
3. Log into the machine as the root user, and install any available upgrades, using the following command:

```
yum -y update
```

4. While logged in as root, install the Extra Packages for Enterprise Linux, which are required by the Leostream Gateway, as follows:

```
yum -y install epel-release
```

The epel-release packages must install successfully before proceeding.

5. Leostream does not currently provide a yum repository for the Leostream Gateway. To install the Gateway, copy or download the RPM file onto your CentOS 7 or RHEL 7 machine.

[http://downloads.leostream.com/leostream-gateway-1-11.x86\\_64.rpm](http://downloads.leostream.com/leostream-gateway-1-11.x86_64.rpm)

6. As root, run the following command to install the Leostream Gateway:

```
yum -y localinstall leostream-gateway-1-11.x86_64.rpm
```

7. Reboot the CentOS machine

The Leostream Gateway generates a default SSL certificate during installation. This self-signed certificate will generate warnings when users establish their HTML5 RDP connections. The final version of the Leostream Gateway will provide a method for uploading custom SSL certificates.

When running the Leostream Gateway on a machine with limited resources, the gateway may take a number of minutes to become fully functional. If initial connections through the Leostream Gateway timeout, wait for ten to fifteen minutes and try the connection again.

The Leostream Gateway logs can be found in `/var/log/tomcat/guacamole.log`.

## Integrating with the Connection Broker

Each Leostream Gateway can be associated with a single Connection Broker, or Connection Broker cluster. The Leostream Gateway requires the Leostream Connection Broker 8.2, or higher. If you are running an older version of the Connection Broker, first apply the 8.2 update file, available at the following link.

<https://www.leostream.com/downloads/Leostream-Connection-Broker-update.tgz>

Apply the upgrade using the **Install Connection Broker update** option on the **> System > Maintenance** page. If the 8.2 update file contains a newer version of OpenSSL than your current Connection Broker, the update can take up to an hour to complete. The update is complete only after the Connection Broker reboots.

After applying the upgrade, you can integrate your Leostream Gateway with your Connection Broker, as follows.

1. Go to the **> Resources > Gateways** page.
2. Click the **Add Gateway** link.
3. In the **Add Gateway** form, enter a name for the Gateway in the **Name** edit field.
4. In the **Address** edit field, enter the publicly accessible IP address or hostname for your Leostream Gateway. This address must be accessible by the end users' client devices.
5. If applicable, select the load balancer that manages this Leostream Gateway from the **Load balancer** drop-down menu (see [Using Load Balancers](#)).
6. Click **Save**.

After saving the form, the Connection Broker registers with the Leostream Gateway and it can now be used to create protocol plans.

If the form displays a warning indicating the Connection Broker cannot contact the Leostream Gateway and the form fails to save, check that port 443 is open on the Leostream Gateway. You can test the Leostream Gateway connection by logging into the Connection Broker virtual machine console and executing one of the following commands at the Linux shell.

```
curl -k https://GATEWAY_ADDRESS/gateway/app/system/ping
```

```
wget --no-check-certificate -q -S -O - https://GATEWAY_ADDRESS/gateway/app/system/ping
```

Where *GATEWAY\_ADDRESS* is the IP address or fully qualified hostname of your Leostream Gateway.

## Creating HTML5 RDP Protocol Plans

Your Leostream Protocol Plans do not use the HTML5 RDP viewer, by default. You can configure a Protocol Plan to use the Leostream Gateway, as follows:

1. Go to the > **Plans > Protocol** page in your Connection Broker.
2. Edit an existing protocol plan, or click the **Create Protocol Plan** link to build a new plan.
3. In the **Web Browser** section of the protocol plan, switch the **Priority** menu of your currently selected protocol from **1** to **Do not use**. By default, RDP is set to a priority of 1.
4. Also in this section, select **1** from the **Priority** drop-down menu associated with the **Leostream HTML5 Viewer**.
5. From the **Gateway** drop-down menu, select the Leostream Gateway to use for connections created from this protocol plan.
6. Select any options for local printing, file transfers, etc.

**Note:** The HTML5 RDP viewer does not support desktop backgrounds, at this time

7. Click **Save**.

Ensure you select this protocol plan in the **Plan** sub-section of the **Desktop Assignment from Pool** section of the user's policy.

## Using Leostream to Proxy Connections

The Leostream Gateway can be used to forward RDP and RGS connections into a network that is not accessible from the user's client device. Using the Leostream Gateway, you can isolate virtual machines on private networks in OpenStack, Amazon Web Services, and Microsoft Azure and provide RDP and RGS connections for users, from anywhere.

To use the Leostream Gateway as a proxy, install the Gateway in a location that has network access to the user's client and the isolated virtual machines, for example by placing the Gateway in the same private network and providing it with a publicly accessible IP address.



The Leostream Gateway forwards traffic on ports 20,000 through 30,000. If you are installing the gateway in OpenStack, AWS, or Azure, ensure that the security group associated with the gateway allows incoming traffic on that port range.

## Working with RDP

After you install your Leostream Gateway, configure a protocol plan to send the RDP traffic through the Gateway, as follows:

1. Go to the > **Plans > Protocol** page in your Connection Broker.
2. Either edit an existing protocol plan, or click the **Create Protocol Plan** link to build a new plan.
3. Go to the **Leostream Connect** or **Web Browser** section of the protocol plan, depending on which client type your users will use to log into Leostream.
4. Modify the **Priority** menu for all protocols so RDP is set to **1** and all other protocols are set to **Do not use**.
5. From the **Gateway** drop-down menu, select the Leostream Gateway to use for connections

## Working with HP RGS



HP RGS connections are currently available only for users who log in using the Leostream Web client. You must use Connection Broker 8.2.25 or later to use the Leostream Gateway for RGS connections.

After you install your Leostream Gateway, configure a protocol plan to send the RGS traffic through the Gateway, as follows:

1. Go to the > **Plans > Protocol** page in your Connection Broker.
2. Either edit an existing protocol plan, or click the **Create Protocol Plan** link to build a new plan.
3. Go to the **Web Browser** section of the protocol plan, depending on which client type your users will use to log into Leostream.
4. Modify the **Priority** menu for all protocols so RGS is set to **1** and all other protocols are set to **Do not use**.
5. From the **Gateway** drop-down menu, select the Leostream Gateway to use for connections



When establishing an RGS connection through the Leostream Gateway, instead of sending the IP address of the remote desktop, the Connection Broker sends the IP address of the Leostream Gateway appended by the port used to forward the traffic. If you do not specifically reset the default RGS Receiver network port, RGS connections that are not established via the Leostream Gateway will fail.

To reset the default RGS Receiver Network port:

- For RGS connections established from a Leostream connection, ensure that the HP RGS Configuration file in the protocol plan includes the following line:

```
Rgreceiver.Network.Port=42966
```

- For RGS connections established directly from the RGS Receiver, edit the default `rgreceiverconfig` file in the RGS Receiver installation directory and uncomment the following line:

```
Rgreceiver.Network.Port=42966
```

## Using Load Balancers

To support a large deployments and provide high availability, you can create a group of Leostream Gateways managed by a commercial load balancer. The load balancer should be configured to distribute load, as well as confirm that the Leostream Gateway is functional.

After configuring your load balancer, you must register it with your Connection Broker, and indicate which Leostream Gateways are associated with that load balancer, as follows.

1. Go to the **> Resources > Gateways** page.
2. Click the **Add Load balancer** link.
3. In the **Add Load balancer** form, enter a display name for your load balancer in the **Name** edit field.
4. Enter the load balancers IP address or resolvable hostname in the **Address** field.
5. Click **Save**.

After registering the load balancer, indicate which Leostream Gateways are behind it, as follows.

1. On the **> Resources > Gateways** page, click the **Edit** link for each of the appropriate gateways.
2. Use the **Load balancer** drop-down to indicate which load balancer manages this gateway.
3. Click **Save**.

To send user connections to the load balancer, ensure that you select the load balancer in the **Gateway** drop-down menus in your Protocol Plan, for example:



# Using the HTML5 Viewer

## Copy and Paste

Use the HTML5 clipboard to copy text to and from your HTML5 RDP connection. To access the clipboard, place the cursor on the desktop background of the HTML5 connection and press Ctrl-Alt-Shift. The sidebar menu that opens provides a clipboard that can be used to transfer text between the local client and remote desktop.

## File Transfer

When file transfer is enabled, the HTML5 RDP session contains a virtual drive that can be used to transfer files between the client and remote desktop. The virtual drive appears in the file browser, for example:



To copy files from the remote desktop to your local client:

1. Copy the file into the shared drive on the remote desktop.
2. Open the sidebar menu by pressing Ctrl-Alt-Shift.
3. In the **Devices** section, click on the **Shared Drive** device.
4. Double-click on the file you want to download to your local client.
5. In the **File Transfer** dialog that opens at the bottom left, shown in the following figure, click the file name to download the file.



To copy files to the remote desktop from your local client:

1. In the HTML5 RDP session, open the sidebar menu by pressing Ctrl-Alt-Shift.
2. In the **Devices** section, click on the **Shared Drive** device.
3. Click the **Upload Files** button.
4. Browse for the file and click **Open**.

The file appears in the shared drive on the remote session.

## Local Printing

If local printing is enabled, you can print files on the remote desktop to the redirected HTML5 printer, which saves the file to a PDF file that is then downloaded to your local client device.

When printing a file, select the Guacamole redirected printer from the **Print** dialog. To download the resulting PDF file, click on the link in the File Transfer dialog that opens at the bottom left of the windows, for example:

