



VMware, Citrix, and Leostream
A Not-Quite Apples-to-
Apples Comparison of Three
Connection Brokers

When it comes down to it, this is not a comparison of VMware to Citrix to Leostream....

The general rationale behind which virtual desktop solution is best for any particular organization is a big bag of "it depends". Both Citrix and VMware claim to be the best at the same high-level (somewhat obvious) things, such as being flexible, trusted, and providing good performance. Leostream can put our own spin on these categories, too, if we want to.

But, [as pointed out by the community](#), much of the choice when building VDI is personal and based on what's best for your particular environment. And, it seems people don't trust what a vendor says when it comes to what's best for them, anyway.

If you want to see VMware and Citrix go after each other, using mostly the same argument, you can read both sides of the story in the following two publications.

- [View the VMware Comparison Datasheet](#)
- [View the Citrix Comparison Datasheet](#)

The thing about Leostream is that our customers don't use Leostream to *build* their hosted desktop environment. They *add* Leostream to it. In the words of BASF, we don't build your hosted desktop environment, we make your hosted desktop environment better, or just plain work.

The key there is that it's a hosted desktop environment, not just VDI.

VMware and Citrix provide a wide range of virtualization solutions. So, to begin, we must narrow any comparison with Leostream down to VMware Horizon and Citrix Virtual Apps and Desktops (previously XenApp and XenDesktop). But, VMware Horizon and Citrix Virtual Apps and Desktops are the full-stack VDI solutions provided by VMware and Citrix. So, even that is too wide a comparison because Leostream is not a full-stack VDI solution.

Leostream provides a connection management platform consisting of the Connection Broker, Leostream Gateway, Leostream Agent, and Leostream Connect client. Leostream manages connections to any hosted desktop environment, including individual virtual desktops, multi-user sessions (i.e., RDS or other servers that support multiple simultaneous user connections), hosted physical workstations/desktops, and hosted applications.

As the piece of the stack that manages user connections, this discussion comes down to a comparison of connection broker functionality, which is a comparison of the Leostream Connection Broker, Citrix Delivery Controller/Studio, and VMware Horizon Connection Server.

How Leostream handles the rest of a VDI stack.

If you are using virtualization, Leostream leverages parts of the virtualization stack provided by other vendors. This may increase complexity when defining your infrastructure, but ultimately provides the flexibility and control you need to design the best environment for all your users' needs. (There's the "flexibility" argument, if you looked at those VMware/Citrix links.)

If you are building VDI, **what are the pieces of the stack that Leostream does not provide?**

- ✓ **A hypervisor** – Leostream does not provide a built-in hosting platform. Instead, Leostream leverages anyone and everyone else's hosting platform, including VMware vSphere, Citrix Hypervisor, Microsoft Hyper-V, AWS EC2, etc.
- ✓ **A display protocol** – Leostream provides HTML5-based RDP, VNC, and SSH connections when using the Leostream Gateway, but Leostream does not provide a client-based high-performance display protocol. To get performance on par with HDX or Blast, you can leverage one of the many third-party high-performance display protocols that Leostream supports, such as Mechdyne TGX, HP RGS, or Teradici Cloud Access Software.
- ✓ **OS streaming or refreshes** – Leostream does not include an equivalent to Citrix Provisioning Services or VMware Horizon Composer. Leostream can model non-persistent desktops, but does so by deleting and rebuilding the VM, to apply updates from a new image. VMware provides that functionality, as well, validating that it's a perfectly reasonable way to model non-persistent desktops.
- ✓ **Storage optimization** - Leostream does not provide any deduplication technology for VM storage. Leostream can provision a linked clone from a snapshot if you integrate Leostream with VMware vSphere and vCenter Server, to lower your required storage. You can also leverage other storage optimization solutions such as NetApp.
- ✓ **User Environment Management** – Leostream partners with Liquidware for application layering and user profile management, but does not provide a built-in equivalent to Citrix App Layering or VMware User Environment Manager.



So, do you need Leostream? It comes down to two things.

Is there a piece of your infrastructure that Horizon or XenDesktop don't support, such as:

- OpenStack Clouds
- Red Hat Virtualization
- KVM (or other open source hypervisors)
- AWS, Azure, or Google Cloud Platform (without building a Horizon or XenDesktop environment in the cloud)
- HPE Moonshot Systems (again, without building a XenDesktop environment)
- NIS authentication servers
- Linux remote desktops (included because VMware and Citrix's support for Linux isn't great)
- Virtual or physical workstations that you want to connect to using:
 - HP Remote Graphics Software display protocol
 - Mechdyne TGX display protocol
- Teradici Cloud Access Software
- NoMachine or FreeNX display protocol
- Workstations with an installed Teradici Remote Workstation Card
- HP Session Allocation Manager client devices

Do you want to leverage your infrastructure in a way that Horizon or XenDesktop can't handle?

This is a comparison of connection broker functionality, only, so is a comparison of the Leostream Connection Broker, Citrix Delivery Controller/Studio, and VMware Horizon Connection Server.

In the Excel spread sheet, you see that the Horizon Connection Server, Desktop Studio, and Leostream compare relatively closely. Leostream provides additional flexibility with our release plans, particularly around idle-time actions, and provides the best location-awareness, meaning being able to change what desktops the user may access based on where they log in from.

The Excel table does not always consider if a feature is available in all editions of Horizon or XenDesktop. In some cases, features that are standard in Leostream are an upsell in Horizon or XenDesktop.

[Click here for a list of features in the different Horizon editions.](#)

[Click Here For a list of features in the different Citrix editions](#)

About Leostream

Leostream provides the critical connection-broker technology required for enterprises to achieve successful large-scale hosted desktop implementations. The Leostream Connection Broker is the industry's most widely deployed vendor-independent connection broker, enabling enterprises to integrate the complex array of clients, back-end systems and protocols required for successful hosted desktop and application deployments. Leostream is based in Waltham, Mass.

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