



Cloud versus direct with VNC Connect

This document discusses strategies for choosing the best connectivity method for your business: establishing direct connections between devices, using RealVNC's cloud-based connection brokering service, or both

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Contents

Introduction	3
Key terminology.....	3
Direct connectivity.....	4
Cloud connectivity.....	5
Summary.....	6
Appendix: VNC Connect subscriptions	6

Introduction

VNC Connect offers full support for both cloud and direct connectivity.

Note: Direct connectivity is only available if you have an Enterprise subscription for VNC Connect that includes [device access](#). If your subscription is Home or Professional, or only includes [instant support](#), there is no choice to make, since cloud is the only connectivity mechanism available.

Some products either treat direct connectivity as an afterthought or don't support it at all. But our support and engineering teams have decades of experience working with direct connections, and we understand that many customers consider direct connectivity to be paramount.

Our cloud service can support both cloud-relayed and cloud-brokered connections. A cloud-brokered connection, which can be established in around 70% of cases, uses the cloud to connect the two devices, then establishes a peer-to-peer session between them. This means session data is never sent through our servers.

At first glance, knowing whether you should connect directly or via the cloud can seem confusing. However, there are clear benefits to each connection method; the trick is knowing how to maximize these benefits.

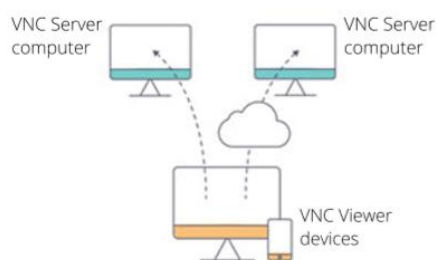
This brief product guide provides an overview of the differences between cloud and direct connectivity, and offers advice on how each method can be used to your greatest advantage.

Key terminology

Throughout this guide, we refer to certain RealVNC-specific terminology.

VNC Connect is comprised of two separate apps: **VNC Server** and **VNC Viewer**. For device access, you must install and license VNC Server on the computer you want to control. This is known as your **VNC Server computer**.

You must then install VNC Viewer on the computer or device you want to take control from, which is known as your **VNC Viewer device**. You do not need to license this device, meaning you or anyone else with permissions can freely connect to your VNC Server computer from as many devices as you wish.



Direct connectivity

RealVNC products traditionally supported only direct connections. Direct connectivity has been available for decades and is still used successfully by thousands of organizations.

To establish a direct connection between VNC Viewer and VNC Server, you must know the VNC Server computer's current IP address or hostname. If there are routers or firewalls in between, they must be configured to allow connections. An experienced system administrator will not usually find this a problem, but this level of technical know-how is outside the comfort zone of most users, who may be frustrated by the process.

In fact, even a system administrator will be unable to establish a remote connection if they cannot access the VNC Server computer's router (e.g. because their colleague is using hotel Wi-Fi).

Despite these drawbacks, a direct connection does offer distinct advantages over a cloud connection. Most importantly, direct connections can be made within a closed network that has no Internet access, such as a LAN. Direct connectivity also provides full control of the route the connection takes, making it ideal for closed networks and security sensitive environments where it is critical to know the exact route of remote access traffic for audit and control purposes.

Since no cloud services are involved in a direct connection, there is no risk of performance degradation due to Internet traffic or service interruptions.

VNC Connect provides the same level of secure AES end-to-end encryption whether you connect directly or via our cloud service. However, it can be argued that in high security environments, direct connections offer a reduced "attack surface" because they involve fewer moving parts, all aspects of which are completely under the control of the network administrator.

From a management perspective, direct connections are established individually and independently of one another. This makes it difficult to create a common dashboard for the administration of available VNC Server computers, VNC Viewer users and their account information. The result is a more manual management process.

Direct connectivity pros:

- Can operate within closed networks without Internet access.
- Offers the greatest possible security and performance.
- Highly configurable for specialized requirements.

Direct connectivity cons:

- Requires significant technical knowledge to configure.
- Impossible to support connections through routers and firewalls owned by third parties.
- More complex management, and greater administrative overhead.

Cloud connectivity

Cloud-based connections are widely used by the remote access software industry and are well established as a reliable and secure method of connectivity.

With VNC Connect, our secure cloud service is used to negotiate a connection between VNC Server and VNC Viewer, resulting in the discovery of a peer-to-peer route between each computer (commonly referred to as a 'cloud-brokered' connection). In the rare instance this is not possible, the remote access session itself is relayed by the cloud service. This fallback is designed to ensure a remote access session can always be established and maintained with the best possible performance.

The greatest advantage of cloud connectivity is how simple it makes the connection process. There is no need to keep track of IP addresses. Simply select the computer you want to access and provide authentication details, and your session is up and running. Cloud connections do not require any firewall or router configuration, meaning you can connect to a colleague whose laptop is behind a router you cannot configure, e.g. if they are using hotel Wi-Fi.

Cloud connections are ideal for environments where there are no special configuration requirements or advanced security considerations, and you simply want to get on with managing your remote computers or applications. Our cloud service also enables VNC Connect to provide an easy-to-use dashboard where you can maintain and manage access to your device estate.

Cloud connectivity pros:

- Quick to configure, with no special technical knowledge required.
- Connect to your computers behind firewalls and routers owned by third parties.
- Device estate can be managed in an easy-to-use dashboard.

Cloud connectivity cons:

- Requires an Internet connection for both endpoints.
- Cannot be configured for special requirements, e.g. if you need to mandate the route your connections take.
- Dependent on a cloud service infrastructure.

Summary

Selecting the most appropriate remote access connection method is not as complicated as it first appears. If you have a conventional network with Internet access and are looking for a simple way to connect to remote computers, cloud connectivity is your best choice. On the other hand, direct connectivity is more appropriate if you are working in a closed network with special configuration or security considerations.

The advantage of VNC Connect is that you're not limited to either method. You can choose which option is best for you and even deploy a hybrid, combined environment. A good example would be to use direct connectivity between distributed members of an internal research team - which could be subject to audit controls for regulatory compliance or strict security guidelines - while simultaneously using cloud connections within the IT team to help employees with their computer support needs, no matter where they are in the world.

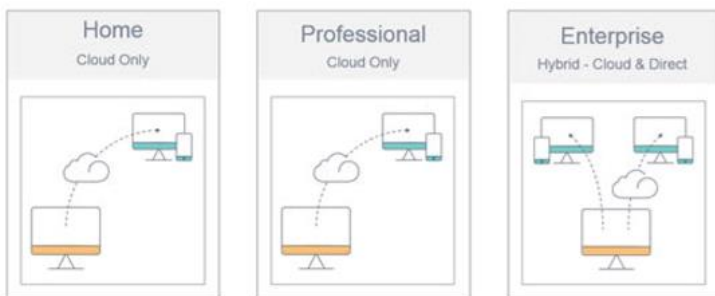
Your choice of connection method is an important consideration. How you connect to your computers defines the fundamental behavior of your remote access environment, and VNC Connect offers the greatest support for cloud, direct or hybrid connections within a single product.

VNC Connect provides the flexibility you need to "Connect & take control".

Appendix: VNC Connect subscriptions

VNC Connect has three subscriptions: Home, Professional and Enterprise. Home and Professional subscriptions are designed for ease-of-use, so provide only cloud connectivity. [Compare our subscriptions.](#)

An Enterprise subscription that includes device access is designed for flexibility and control, so additionally supports direct connections. You can connect using either connectivity method depending on your current needs. Note direct connections are not available for instant support, even with an Enterprise subscription.



If you have any further questions, please contact us at enquiries@realvnc.com, or visit realvnc.com/connect.



RealVNC's remote access and management software is used by hundreds of millions of people worldwide in every sector of industry, government and education. Our software helps organizations cut costs and improve the quality of supporting remote computers and applications. RealVNC is the original developer of VNC remote access software and supports an unrivalled mix of desktop and mobile platforms. Using our software SDKs, third-party technology companies also embed remote access technology direct into their products through OEM agreements.

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