End User Requirements

Virtual Desktop Service

Toby vanRoojen
February 17, 2021

Table of Contents

End User Requirements

Overview

NetApp VDS does not track or recommend different user endpoint devices. We do recommend some basics, but this does not exclude other possible endpoint choices.

Remote Desktop environments can be access from a variety of endpoint devices. Clients are available directly from Microsoft and 3rd party vendors. NetApp VDS offers a custom connection client for Windows devices (*NetApp VDS Client for Windows*) as well as a Web client compatible with HTML 5 browsers.

Azure Virtual Desktop environments can be accessed from a variety of endpoint devices. Unlike RDS, AVD environments can only be accessed by Microsoft native clients. Microsoft has published clients for Windows, MacOS, Android, iOS as well as a web client. Additionally they have partnered with IGEL to offer a Linux-based thin client offering.

End user connection options

Remote Desktop Services

NetApp VDS Client for Windows

The NetApp VDS Client for Windows is the best way for users to connect to their RDS environment. This simple installer allows the users to connect with just their user name and password. No server or gateway configuration is required. Printing and Local drive mapping are automatically enabled and this method has the highest performance.

VDS client url safelisting

In the event that outbound network connections are controller and in order to guarantee that they can continue to use the NetApp VDS Client for Windows for Windows, we recommend adding the following to the safelist:
* api.cloudworkspace.com
* vdsclient.app
* api.vdsclient.app
* bin.vdsclient.app

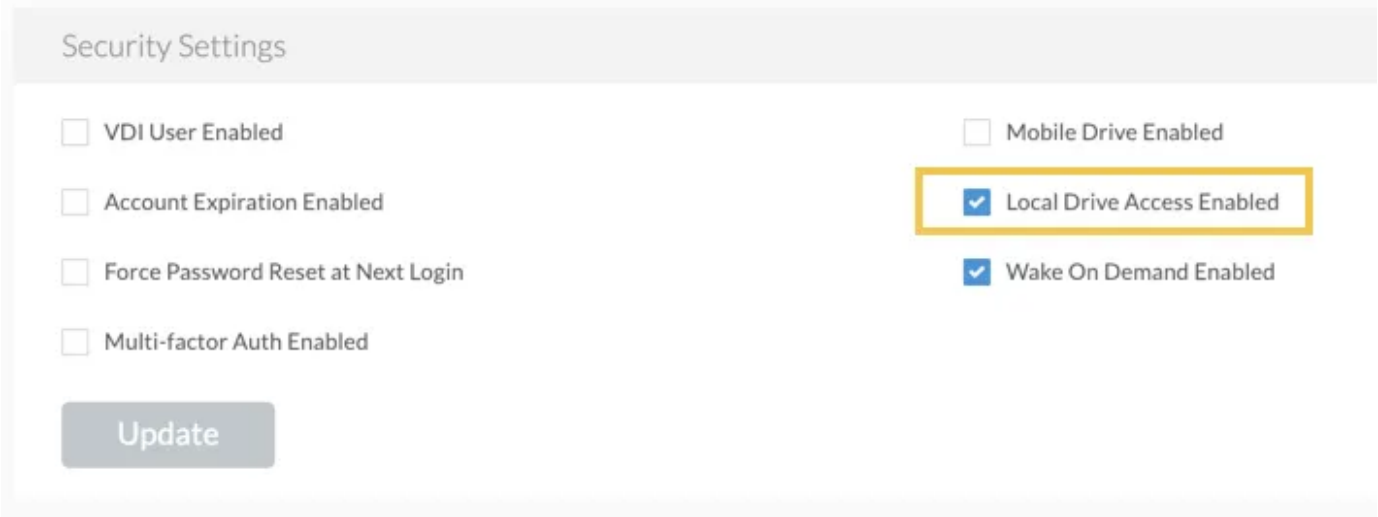
Upon request, a branded version of this application can be created with the Partner's logos and contact information. Please contact support to request this.

The NetApp VDS Client can be downloaded from here: https://cwc.cloudworkspace.com/download/cwc-win-setup.exe

Printing: When connecting with the NetApp VDS Client for Windows, printing is automatically setup using ThinPrint.

Local File Access: By default, the NetApp VDS Client for Windows shares the Local device drives (HDD, USB & Network) with the cloud user session. The user can browse and transfer data back and forth from the "This PC" location in Windows Explorer. This functionality can be disabled by editing the workspace or user in VDS.

VDS > Workspaces > Users & Groups > Security Settings



NetApp VDS web client

The NetApp VDS Web client can be accessed at https://login.cloudworkspace.com/

End users can also access their desktop via a webpage, as long as their browser supports HTML5. Browser compatibility for HTML5 can be checked at https://html5test.com/

A fully branded version of this page can be created for NetApp VDS Partners. The partner is required to provide an SSL cert and there is a small professional services fee to implement. Please contact support to begin the process.

Printing: When connecting via HTML5, printing from the Virtual Desktop generates a PDF that is downloaded in the browser and can then be printed locally.

Local File Access: When connecting via HTML5, the user can upload files to the Cloud Drive. To do this the user will click the floating cloud icon, upload the file and the navigate to the “This PC > Cloud on…” location in Windows Explorer to access that file in the Virtual Desktop user session.

Manually configured RDS client

The second best connection method is to manually configure the Microsoft Remote Desktop application. This is ideal for MacOs, Linux, iOS, Android and ThinClients. The only requirement is that the device/software be able to connect via RDP and to configure an RDS Gateway.

The information needed to manually configure an RDP client is (Links go to where that information can be located):

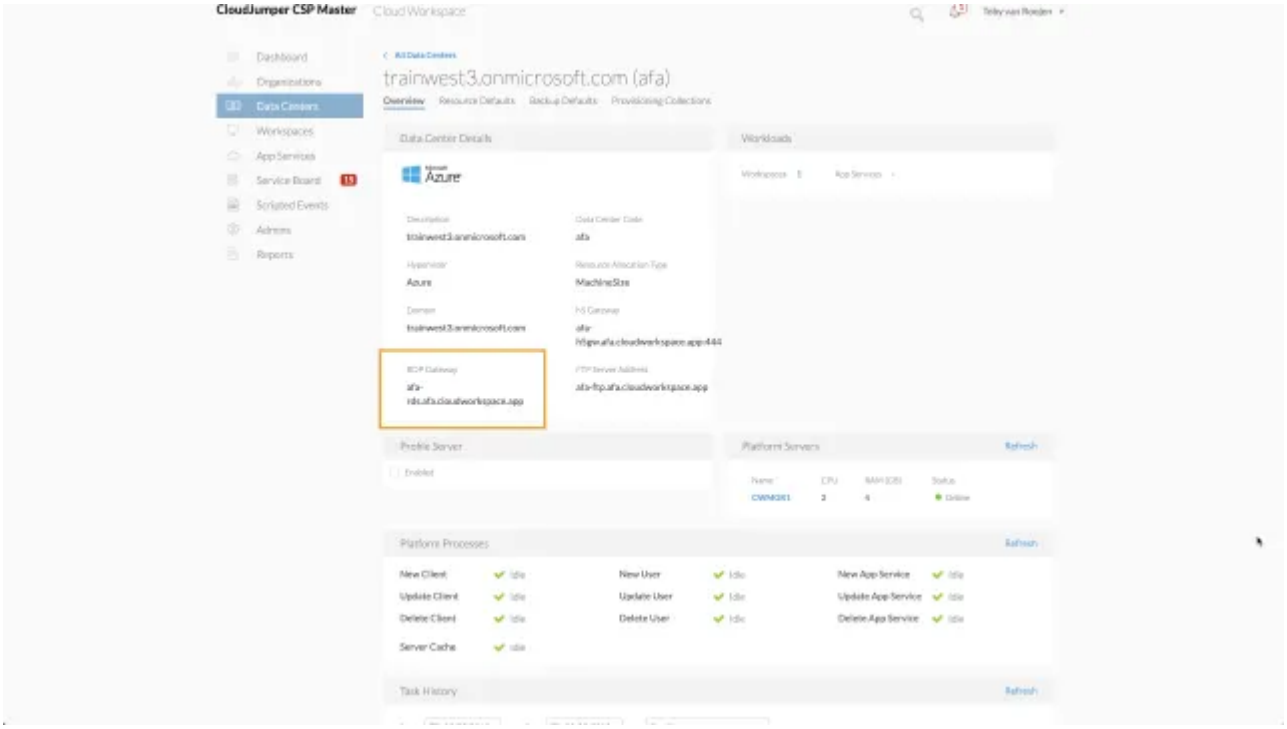
- Username
- Password
- Server Address (a.k.a. PC Name)
- Gateway Address

Printing: When configuring a local RDP client, the user can optionally forward their printer to the cloud environment for printing.

Local File Access: When manually configuring an RDP client, the user can choose to share specific folders with the Virtual Desktop user session.

Locating the RDS gateway address

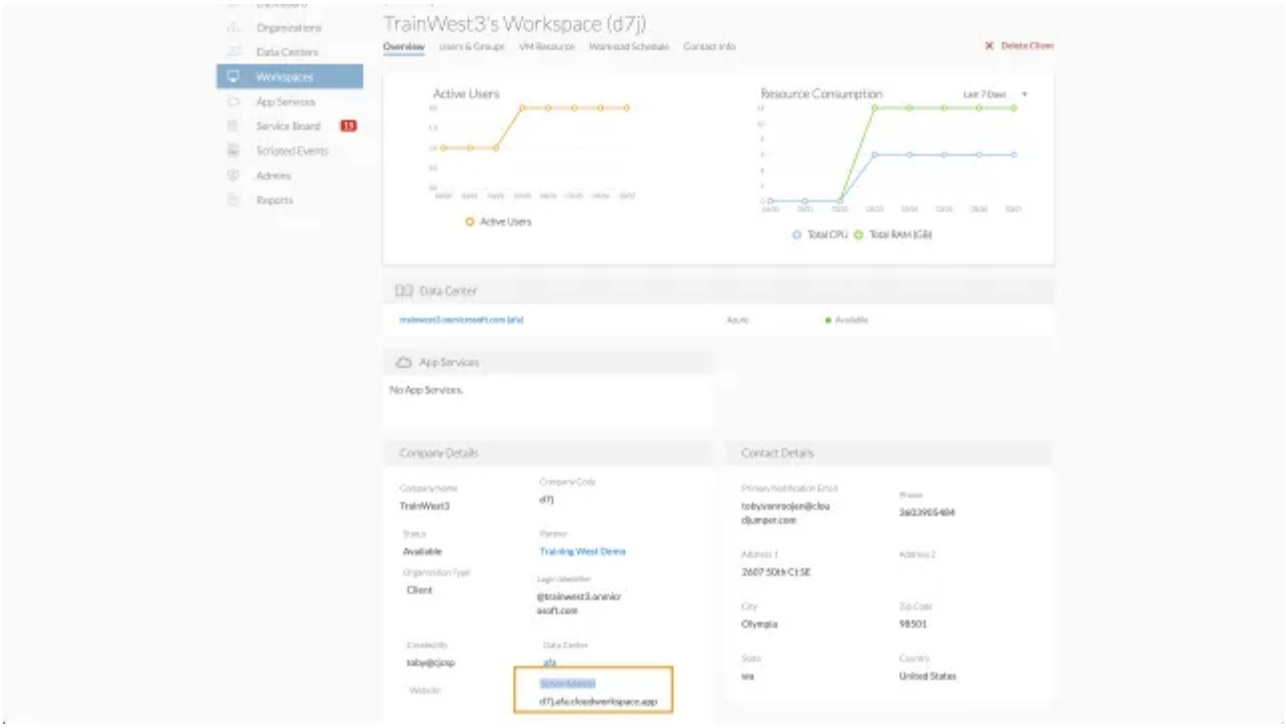
1. Navigate to VDS (https://manage.cloudworkspace.com)
2. Click Deployments
3. Click the name of the deployment
4. Locate RDP Gateway under Deployment Details



Locating the server address for users on a shared session host

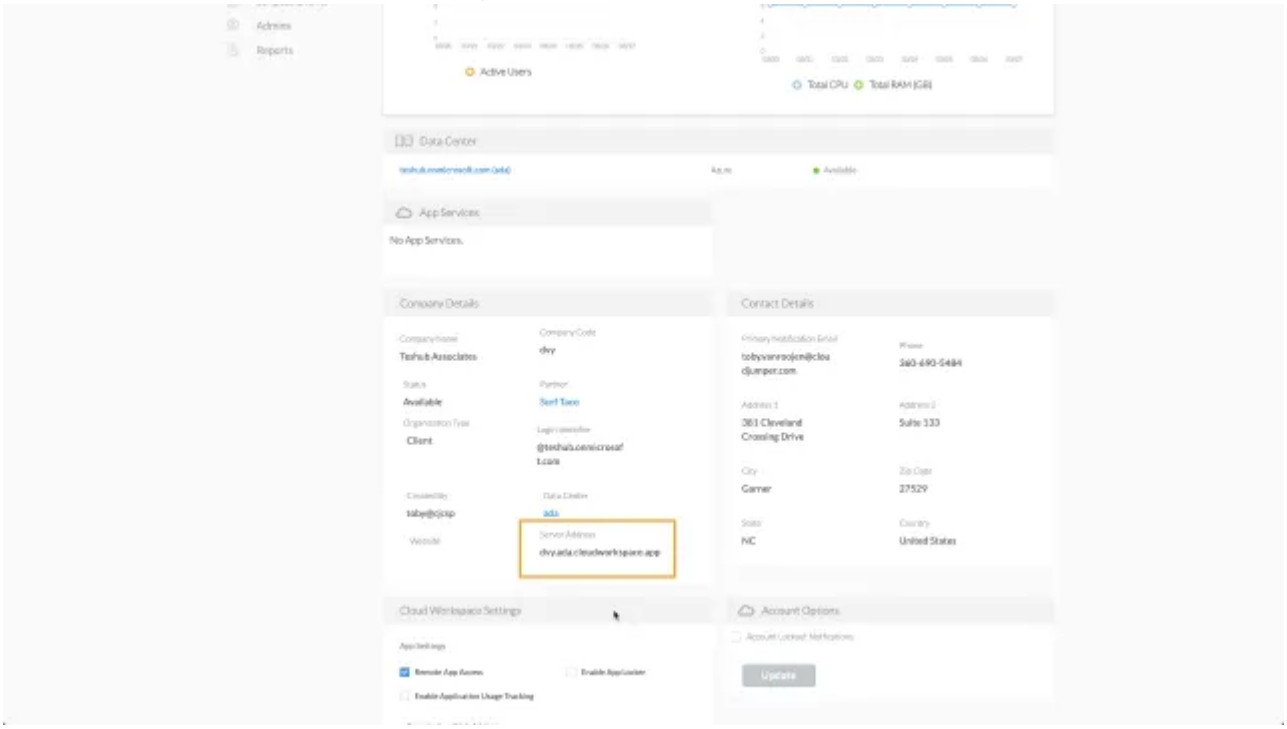
Navigate to VDS (https://manage.cloudworkspace.com)

1. Click Workspaces
2. Click the name of the workspace
3. Locate Server Address under Company Details



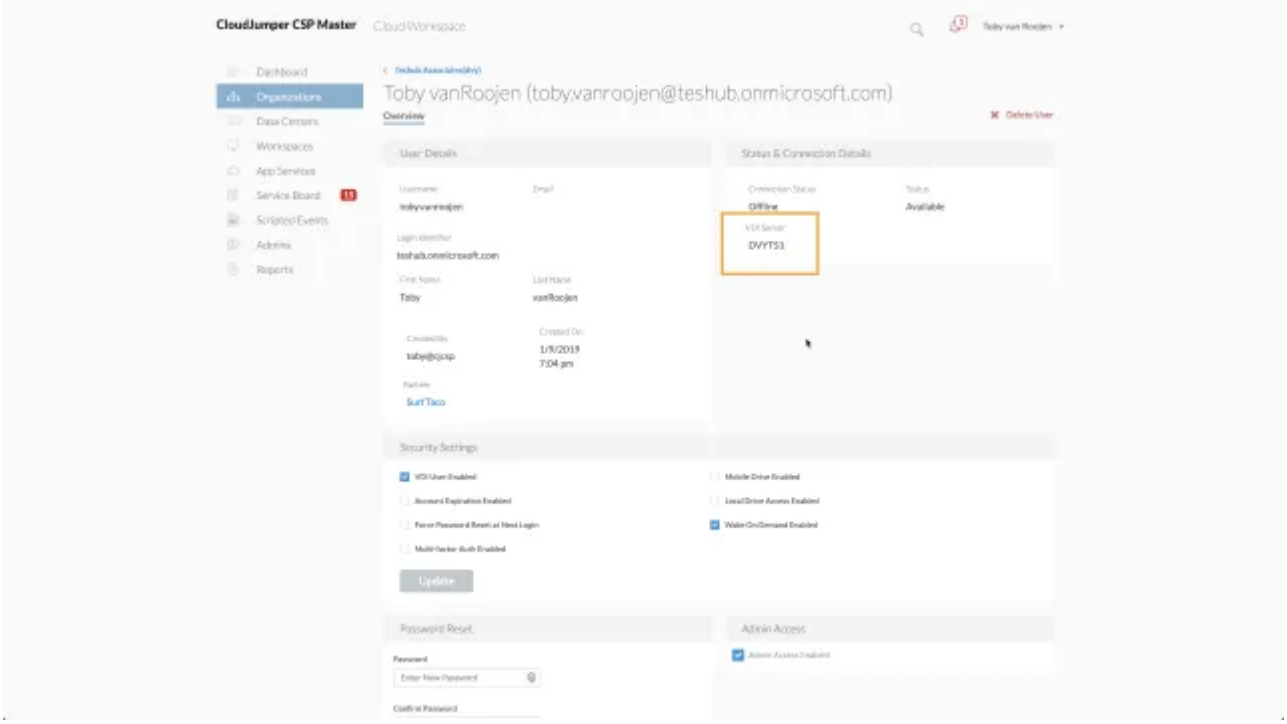
Locating the server address for VDI users

1. Navigate to VDS (https://manage.cloudworkspace.com)
2. Click Workspaces
3. Click the name of the workspace
4. Locate Server Address under Company Details



5. Click on the Users & Groups tab
6. Click on the user name

7. Locate the VDI Server address



8. The server address for this vdi user is the Server address: dvy.ada.cloudworkspace.app but with the company code (e.g. dvy) replaced with the VDI Server value (e.g. DVYTS1)…

```
e.g. DVYTS1.ada.cloudworkspace.app
```

RDS requirements matrix

Type	Operating System	RDS Client Access Method(s)	RDS Web Client
Windows PC	Windows 7 or later with Microsoft RDP 8 App	NetApp VDS Clients Manually Configure Client	https://login.cloudworkspace.com/
MacOS	MacOS 10.10 or later and Microsoft Remote Desktop 8 App	Manually Configure Client	https://login.cloudworkspace.com/
iOS	iOS 8.0 or Later and any Remote Desktop App that supports RD Gateways	Manually Configure Client	https://login.cloudworkspace.com/
Android	Android version capable of running Microsoft Remote Desktop app	Manually Configure Client	https://login.cloudworkspace.com/
Linux	Virtually all versions with any RDS application that supports RD Gateways	Manually Configure Client	https://login.cloudworkspace.com/

Type	Operating System	RDS Client Access Method(s)	RDS Web Client
Thin Client	A wide variety of Thin Clients work, provided they support RD Gateways. Windows-based thin clients are recommended	Manually Configure Client	https://login.cloudworkspace.com/

Comparison matrix

Elements/Features	HTML5 Browser	VDS Client for Windows	MacOS RDP Client	RDP Client on mobile devices	HTML5 Client on mobile devices
Local Drive Access	Click the background, then the cloud icon that appears in the center of the top of the screen	Available in Windows Explorer	Right click edit the RDP. Go to the redirection tab. Then pick a folder that you would like to map. Log into the desktop and it will be displayed as a mapped drive.	N/A	N/A
Display Scaling	Can be resized, and will change based on how large the browser window is.This can never be larger than the resolution of the endpoint (primary, endpoint monitor in the event of multiple monitors	Can be re-scaled, but will always be equal to the screen resolution of the endpoint (primary, endpoint monitor in the event of multiple monitors)	Can be re-scaled, but will always be equal to the screen resolution of the endpoint (primary, endpoint monitor in the event of multiple monitors)	N/A	N/A
Copy/Paste	Enabled through clipboard redirection.	Enabled through clipboard redirection.	Enabled through clipboard redirection. Inside virtual desktop, use control + C or V instead of command + C or V.	Enabled through clipboard redirection.	Enabled through clipboard redirection.

Elements/Features	HTML5 Browser	VDS Client for Windows	MacOS RDP Client	RDP Client on mobile devices	HTML5 Client on mobile devices
Printer Mapping	Printing handled via a PDF print driver that browsers are using to detect local and network printers	All local and network printers mapped via ThinPrint utility	All local and network printers mapped via ThinPrint utility	All local and network printers mapped via ThinPrint utility	Printing handled via a PDF print driver that browsers are using to detect local and network printers
Performance	RemoteFX (enhancement of audio and video) not enabled	RemoteFX enabled via RDP, enhancing audio/video performance	RemoteFX enabled via RDP, enhancing audio/video performance	RemoteFX enabled, enhancing audio/video performance	RemoteFX (enhancement of audio/video) not enabled
Use of mouse on mobile device	N/A	N/A	N/A	Tap the screen to move the mouse, click	Press and hold the screen and drag to move the mouse, tap to click

Peripheral devices

Printing

- The Virtual Desktop Client includes ThinPrint which passes local printers to the cloud desktop seamlessly.
- The HTML5 connection method downloads a PDF in the browser for local printing.
- The Microsoft Remote Desktop 8 App on MacOS allows the user to share printers into the cloud desktop

USB peripherals

Items such as scanners, cameras, card readers, audio devices have mix results. There is nothing unique about a Virtual Desktop deployment that will prevent this but the best choice is to test any devices that are required. Your Sales Rep can help setup test accounts if required.

Bandwidth

- NetApp recommends a minimum of 150kb bandwidth per user. Higher capacity will improve the user experience.
- Internet Latency under 100ms and very low Jitter are just as important. KB Article
- Additional bandwidth needs will be introduced by your company's use of VOIP, video streaming, audio streaming, and general Internet browsing.
- The amount of bandwidth consumed by the Virtual Desktop itself will be one of the smallest components when calculating user bandwidth requirements.

Microsoft bandwidth recommendations

https://docs.microsoft.com/en-us/azure/virtual-desktop/bandwidth-recommendations

App recommendations

Workload	Sample Applications	Recommended Bandwidth
Task worker	Microsoft Word, Outlook, Excel, Adobe Reader	1.5 Mbps
Office worker	Microsoft Word, Outlook, Excel, Adobe Reader, PowerPoint, Photo Viewer	3 Mbps
Knowledge worker	Microsoft Word, Outlook, Excel, Adobe Reader, PowerPoint, Photo Viewer, Java	5 Mbps
Power worker	Microsoft Word, Outlook, Excel, Adobe Reader, PowerPoint, Photo Viewer, Java, CAD/CAM, illustration/publishing	15 Mbps

These recommendations apply regardless of how many users are in the session.

Display resolution recommendations

Typical display resolutions at 30 fps	Recommended Bandwidth
About 1024 × 768 px	1.5 Mbps
About 1280 × 720 px	3 Mbps
About 1920 × 1080 px	5 Mbps
About 3840 × 2160 px (4K)	15 Mbps

Local device system resources

- Local system resources like RAM, CPU, Network Cards and Graphics capabilities will cause variation in the user experience.
- This is MOST true of network and Graphics capability.
- 1 GB of RAM and a low-power processor on an inexpensive Windows device. 2-4 GB RAM is a recommended minimum.

Azure Virtual Desktop

AVD Windows client

Download the Windows 7/10 client from https://docs.microsoft.com/en-us/azure/virtual-desktop/connect-windows-7-10 and log in using the end user username and password. Note that Remote App and Desktop Connections (RADC), Remote Desktop Connection (mstsc), and the NetApp VDS Client for Windows application does not currently support the ability to log in to AVD instances.

AVD web client

In a browser, navigate to the Azure Resource Manager-integrated version of the Azure Virtual Desktop web client at https://rdweb.AVD.microsoft.com/arm/webclient and sign in with your user account.

If you're using Azure Virtual Desktop (classic) without Azure Resource Manager integration, connect to your resources at https://rdweb.AVD.microsoft.com/webclient instead.