D&H
CLOUD SOLUTIONS

Windows Virtual Desktop

Sales Playbook

PURPOSE

Sales value and proposition document for Windows Virtual Desktop

OVERVIEW

What is Windows Virtual Desktop?

Windows Virtual Desktop utlizes existing technology to provide you with a simplfied and affordable virtual desktop and app service capable of hosting multiple tenants at once hosted in the cloud by Microsoft Azure.

Brief history of Remote Desktop Services

Traditionally, Microsoft desktop licensing restrictions have prevented MSPs from providing a hosted desktop environment. To work around these restrictions, many have leveraged the Windows Server OS to deliver a Windows 7/8/10 desktop experience making the server-based desktop look and feel pretty much like the desktop OS by using Remote Desktop Services.

This method required an investment in hardware and licensing due to the multiple roles required of an RDS deployment. The required number of separate servers or VMs to host these roles decreased over the years and with each subsequent version of Windows Server but the complete solution still required the same number of resources and configuration.

Microsoft releases Windows 10 Enterprise multi-session

A few years ago, Microsoft began removing some of the strict licensing barriers previously in place for a hosting Windows desktop. First, Microsoft allowed for the use of Windows 10 Enterprise in multi-tenant hosting environments with a license that could be purchased through the CSP program. Then they started building Windows 10 Enterprise into Microsoft 365 E3/E5 plans. Now, we finally have an entire Windows OS dedicated to desktop hosting – Windows 10 Enterprise multi-session. This new OS has the multi-user benefits of an RD Session Host and the new advantages from Windows 10 Enterprise, hosted purely in Azure. Also important, moving forward, *the only option to run Office 365 Pro Plus virtually will be on Windows 10 – Windows Server 2019 does not support it.*

Multiple Remote Desktop Server roles simplified

Existing Remote Desktop Service infrastructure requirements are extensive employing several server roles to determine which user gets connected to which desktop experience. These roles include: Web Access, Web Gateway, Connection Broker and a Licensing Server. Windows Virtual Desktop combined all of these roles into a hosted service running in Azure. The user will then log into this service and it determines where the user's desktop is and where to host the desktop session. This not only eliminates the complexity of having to manage RDS roles but also removes the need for costly equipment and/or VMs to run them.

Simple licensing

In order to correctly host desktops using RDS, you would need a license for both RDS and the Server OS. This would also require CALs for both the Server OS and RDS. With WVD, the "right" to use the service is included with any Windows 10 Enterprise subscription at no additional cost. These include Microsoft 365 F1/E3/E5 or a standaonline Windows 10 Enterprise E3/E5 subscription. There is no longer a need to purchase a Server OS license or RDS CALs. If the customer already has a subscription to Windows 10 Enterprise, there is nothing more that needs to be added.

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KEY CAPABILITIES

With Windows Virtual Desktop, you can set up a scalable and flexible environment:

- Create a full desktop virtualization environment in your Azure subscription without having to run any additional gateway servers
- Publish as many host pools as you need to accommodate your diverse workloads
- Bring your own image for production workloads or test from the Azure Gallery
- Reduce costs with pooled, multi-session resources. With the new Windows 10 Enterprise multi-session capability exclusive to Windows Virtual Desktop and Remote Desktop Session Host *(RDSH)* role on Windows Server, you can greatly reduce the number of virtual machines and operating system *(OS)* overhead while still providing the same resources to your users
- Provide individual ownership through personal *(persistent)* desktops

You can deploy and manage virtual desktops:

- Use the Windows Virtual Desktop PowerShell and REST interfaces to configure the host pools, create app groups, assign users, and publish resources
- Publish full desktop or individual remote apps from a single host pool, create individual app groups for different sets of users, or even assign users to multiple app groups to reduce the number of images
- As you manage your environment, use built-in delegated access to assign roles and collect diagnostics to understand various configuration or user errors
- Use the new Diagnostics service to troubleshoot errors
- Only manage the image and virtual machines, not the infrastructure. You don't need to personally manage the Remote Desktop roles like you do with Remote Desktop Services, just the virtual machines in your Azure subscription

You can also assign and connect users to your virtual desktops:

- Once assigned, users can launch any Windows Virtual Desktop client to connect users to their published Windows desktops and applications. Connect from any device through either a native application on your device or the Windows Virtual Desktop HTML5 web client
- Securely establish users through reverse connections to the service, so you never have to leave any inbound ports open

Source: https://docs.microsoft.com/en-gb/azure/virtual-desktop/overview

KEY DIFFERENTIATORS

- Simple licensing – Win10 Enterprise license required
- Identity and permissions controlled by Active Directory
- WVD supports several Operating Systems: Windows 10 multi-session, Windows 10 single-session, Windows 7 single-session, Windows Server 2012 R2, and newer operating systems.

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TARGET CUSTOMER

- Clients with existing RDS workloads deployed
- Training or classroom settings *(Education, Online learning)*
- Security and regulation *(Financial Services, Healthcare, Government)*
- Elastic workforce *(Mergers and acquisitions, Short term employees, Contractor and partner access)*
- Specific employees *(BYOD and mobile, Call centers, Branch workers)*
- Specialized workloads *(Design and engineering, Legacy apps, Software dev test)*

PRODUCT ALIGNMENT

- Microsoft 365 E3 & E5
- Office 365 ProPlus
- DaaS deployments
- Alternative to Remote Desktop Services

PARTNER OPPORTUNITY

Worldwide Desktop as a Service market is growing:

- 32.1% annual growth rate *(IDC Worldwide DaaS Software Forecast, 2017-2021, Robert Young, June 2017)*
- DaaS revenue forecasted to grow to in 2021 to $2.99B *(IDC Worldwide DaaS Software Forecast, 2017-2021, Robert Young, June 2017)*
- 50% of new VDI users will be deployed on DaaS platforms by 2019 *(Gartner, Inc., When Midsize Organizations Should Start Desktop as a Service, Nathan Hill, July 19, 2018)*

Opportunities by customer type:

Value-added Service Providers *(ISVs)*

- Extend offering with additional functionalities on top of Windows Virtual Desktop
- License LOB applications to end customers through Azure Marketplace
- Incentive programs:
  - Azure Everywhere
  - ECIF

Desktop as a Service Provider *(MSPs)*

- Provide fully managed virtual desktop *(DaaS)* through Windows Virtual Desktop
- Simple licensing managed through Cloud Solution Provider *(CSP)* program
- Incentive programs:
  - Azure Everywhere
  - Azure Deployment offers
  - ECIF

Overall WVD can increase margins and customer value while lowering costs when you help customers move from on premises virtualization to Windows Virtual Desktop.

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Partner margin and incentive rates

On premises	Cloud
16.5% Windows Server	26% Windows/M365 E3
16.25% RDS CAL	22% Azure Consumption

THE SMB PAIN POINT

According to studies**, 34% of SMB organizations struggle with scaling their infrastructure – both with servers/compute and storage.

- Windows Virtual Desktop addresses this concern with the intrinsic nature of cloud computing. This service takes the hardware requirements of our companies' desktops down to a minimum and allows for scaling of compute and storage capability as the demand grows.

24% have trouble managing complexity, troubleshooting, and keeping everything current

- By migrating workloads to Azure services, the task of keeping those systems current is no longer a concern for the IT admin as these updates can be scheduled automatically. Additionally, any desktop hosted by WVD will always be running the latest version of the Windows desktop OS.

Over 50% of SMBs are operating with less than half of their servers virtualized

** Scale Computing, Inc., State of SMB IT Infrastructure Survey, David Davis, 2015

D&H VALUE PROPOSITION

- **High-Margin Recurring Revenue:** D&H promises a low Total Cost of Ownership on Azure storage deployments. With its multitenant architecture, partners can scale-up quickly to support unlimited business growth.

- **Seamless Experience:** Since this service sits on top of an existing file server and simply synchronizes that data with storage in the cloud, the end user experience is never interrupted. Customers are instead offered remote access to the same data *instantly*.

- **3rd Party Technical Support:** D&H has partnered with 24/7 US-based technical support group, Plumchoice, to provide anonymous, customer-facing support for Office 365, Azure and other cloud products. Learn More.

- **Cloud Clusters:** No longer deal with the confusing complexity of a cloud deployment. Instead, D&H can provide packaged cloud solutions for a single per-capacity price! This can reduce confusion and difficulty to adopt these new technologies. Learn More.

- **Enterprise-level Security:** Data is sent at 256-bit AES encryption while in transit and additional encryption is employed while data is at rest

- **Granular control of file access and ownership:** Identity and authorization is managed by Azure Active Directory and therefore can be implemented using existing Azure AD or ADDS environments

D&H CLOUD SOLUTIONS

D&H offers comprehensive support and additional services to round out a comprehensive solution. End users benefit from secure file access, sharing, and scalability, while D&H partners gain reoccurring revenue sources and multi-tenant management capabilities.

For more information, please reference the D&H knowledgebase article.

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VERTICAL MARKET SALES FRAMEWORK

SCENARIO	OPENING	VALUE PROP
Healthcare organization: hospital, clinic, doctor's office, dentist's office	Lack of HIPPA compliant solution puts doctors and patients at risk, and can lead to substantial fines and penalties	Azure provides best-in-class encryption methods, and is certified as HIPAA-compliant
Mobile worker: sales professional, frequent traveler, or work-from-home	Users need remote access to business applications while working in the field	Expanding on existing remote capabilities and provide 24/7 access to applications and remote environments from anywhere
Finance vertical	Financial organizations need to continuously track and audit files and activity often requiring significant compute performance	Administrators can implement fine-grained access control and generate reports and alerts all while offering access to high-performance remote access
Government and government contractors, education	At this time, Azure Gov is not host to WVD workloads and shouldn't be considered. Future expansion of WVD to secure AzureGov expected	

TECHNICAL SALES FRAMEWORK

SCENARIO	OPENING	VALUE PROP
Customer reducing on premise infrastructure and migrating to cloud	Customer eliminating costly endpoint devices and moving other workloads to IaaS	Azure replicates the on-premise file server and other workloads in the cloud, allowing access from virtual cloud environment
Customer looking to provide remote access to a LOB application	Customer is concerned with cost and practicality of hosting application	WVD will allow customers to containerize LOB applications so they run independently of an OS. This allows for quick and remote access for end users
Customer concerned about ransomware or virus attacks	Customer is designing security solution	Workloads are virtual and hosted within the highly secure Azure platform. If a corruption were to occur, data is backed up in multiple locations and the virtual environment can simply be recreated

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QUALIFYING QUESTIONS

- Do you currently have clients using Remove Desktop Services? How many?
- Do you have any clients who primarily work remotely where security & performance is important?
- What other challenges are you experiencing with selling and managing Remote Desktop solutions?
- What are your general business goals for the year? What are your biggest challenges right now?
- Looking at your customers and growth areas, do you have any projects in the next 60-90 days for FSS? Qty. of customers?

DISCOVERY QUESTIONS

- **Technical Pain**
  - In your client base, how do you manage multiple remote desktop solutions?
  - How many of your clients need their desktop to be accessible from multiple locations?
  - How much time would it save to be able to manage all aspects of an RDS solution from a single pane of glass?
  - How do your techs manage to support multiple solutions?
  - Do you have clients that could benefit from importing accounts and utilizing a single sign on integration with their Windows logon password?
  - How do you deploy resources to maximize profitability?
  - Do you have clients that have a mobile workforce that need to access data and systems from remote servers?
  - Have you ever had a client workstation or server hit with a ransomware or other virus and have to perform a file restoration?

- **Business Pain**
  - What would be the impact to the business be able to control all spend on all bookings?
  - How would a centrally hosted remote desktop solution be beneficial to your techs ability to quickly support your clients?
  - How would the combination of a complete desktop environment and remotely-hosted applications benefit your customer's productivity?

- **Personal Pain**
  - How important is system and application accessibility to you to fix/change?
  - On a scale of 1-10, where 10 is something you need to do now, what would you rank the need to implement Windows Virtual Desktop?

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PRICING EXPLANATION AND EXAMPLES

With the flexibility and scale of Windows Virtual Desktop, you only pay for the virtual machines, and storage consumed when your users are using the service. You have the flexibility to pick any VM and storage options to match your use cases. The examples below detail a few common scenarios to outline your considerations when choosing the right deployments for your environment.

Scenario examples for a 100-user deployment with multi-session in East US region:

SCENARIO	DESCRIPTION	ESTIMATED SESSION HOST VM COST	ESTIMATED STORAGE COST
Light	Ideal for lightweight use cases with such as data entry and call center apps.	3x D8s v3 (8 vCPUs each): **$0.4422 per hour total**	3x E20 Standard SSDs (512 GB each) + 2x DS1 v2: **$144.7066 per month total**
Medium	Ideal for basic Microsoft Office apps such as Word and Excel, as well as database apps.	4x D8s v3 (8 vCPUs each): **$0.5895 per hour total**	3x E20 Standard SSDs (512 GB each) + 2x DS1 v2: **$144.7066 per month total**
Heavy	Ideal for more intensive workloads such as development or engineering.	7x D8s v3 (8 vCPUs each): **$1.0316 per hour total**	3x E20 Standard SSDs (512 GB each) + 2x DS1 v2: **$144.7066 per month total**
Heavy Graphics	Ideal for graphics intensive apps such as 3D CAD and Adobe Photoshop.	7x NV6 (6 vCPUs each): **$3.5397 per hour total**	3x E20 Standard SSDs (512 GB each) + 2x DS1 v2: **$144.7066 per month total**

Based on 3-year Reserved Instance with Azure Hybrid Benefits pricing – contact cloudsolutions@dandh.com for more information

Scenario example for 1 user with a personal desktop:

SCENARIO	DESCRIPTION	ESTIMATED SESSION HOST VM COST	ESTIMATED STORAGE COST
Personal desktop (1 user per VM)	Ideal for a persistent experience for each user.	D2s v3 (2 vCPUs each): **$0.0369 per hour per VM**	2x E10 Standard SSDs (128 GB each) per VM: **$19.20 per month per VM**

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TECHNICAL WALKTHROUGH

Prerequisites

To set up Windows Virtual Desktop, you will need a few resources and to complete a few initial set steps:

- An Azure subscription (contact D&H for more info)

- Download and install the Windows Virtual Desktop cmdlet set for Windows PowerShell

- Make sure your virtual network in Azure is configured in such a way that new VMs have your Domain Controller or Azure ADDS set as the DNS.

  - For guidance on how to configure DNS when using Azure AD DS, see here

  - For guidance on how to use a Domain Controller, see here

- Make sure all Azure resources are placed in the same region

- If you require SSO, you will need AD FS or users will have to authenticate when gaining access to the VM. See here for how to deploy AD FS

- An Active Directory to which you can join you VMs. For this, you have three options:

  - Use Azure AD DS

  - Spin up a DC in your Azure subscription

  - Use on-prem DC by using VPN or ExpressRoute

Initial Setup

Allow the Windows Virtual Desktop service to access Azure AD

1. Navigate to https://rdweb.wvd.microsoft.com

2. Leave Consent Option as "Server App", add your Azure AD tenant ID, also referred to as the Directory ID, and click **Submit**.

   a. You can find your Azure AD tenant ID here

3. Wait a moment for the consent option to refresh, then change the Consent Option to **Client App** and enter the same Azure AD tenant ID. Then click **Submit**.

Assign the "TenantCreator" role to a user account

1. Log in to the Microsoft Azure Portal

2. Navigate to **Azure Active Directory** from the left menu

3. Under **Manage**, click on **Enterprise applications**

4. Search for and select **Windows Virtual Desktop**

5. Under **Manage**, select **Users and groups**

6. Select **Add user**, select **Users and groups** and search for the user to whom you want to grant permissions to perform the Windows Virtual Desktop tenant creation

7. Select that user and click **Select**, followed by **Assign**

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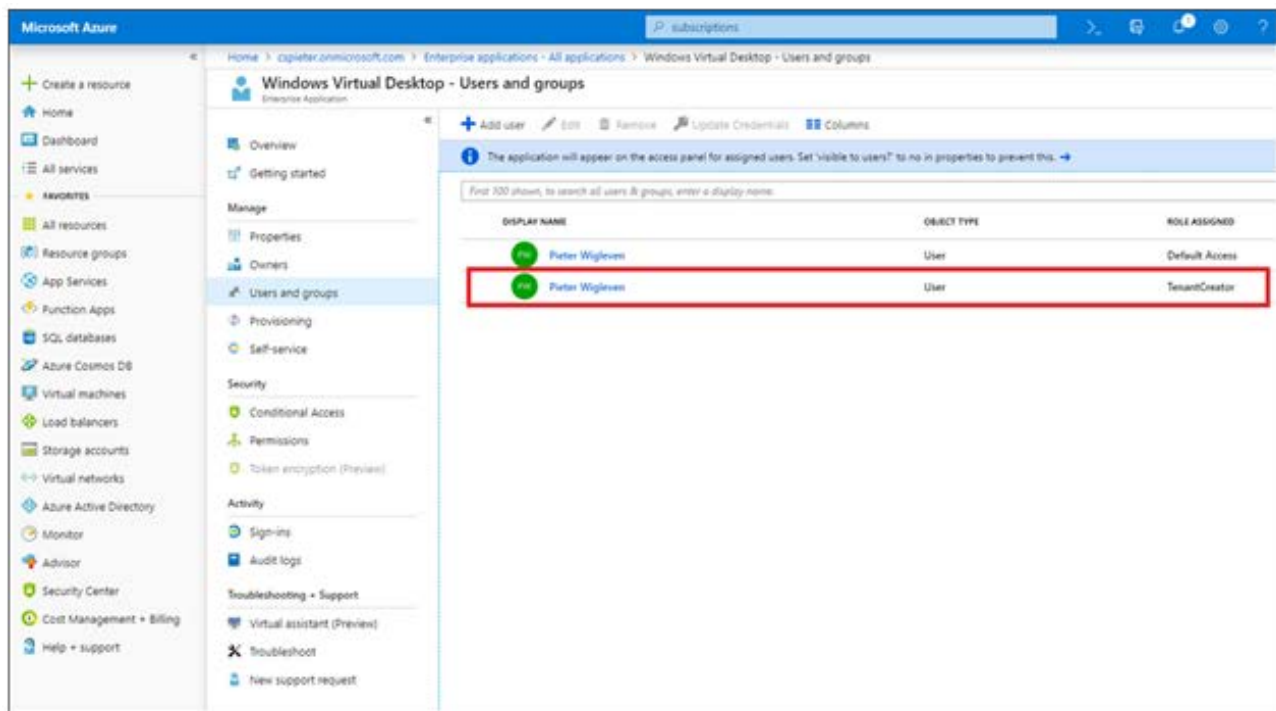
Create a **Windows Virtual Desktop tenant**

Now that you have a user with the right permissions to create a Windows Virtual Desktop tenant, let's go ahead and create it. During this step, you'll need two IDs:

- Your Azure AD tenant ID (again)
- Your Azure subscription ID, which can be found in the D&H Cloud Marketplace
    - Select your customer's Azure subscription and look for OcpSubscriptionID
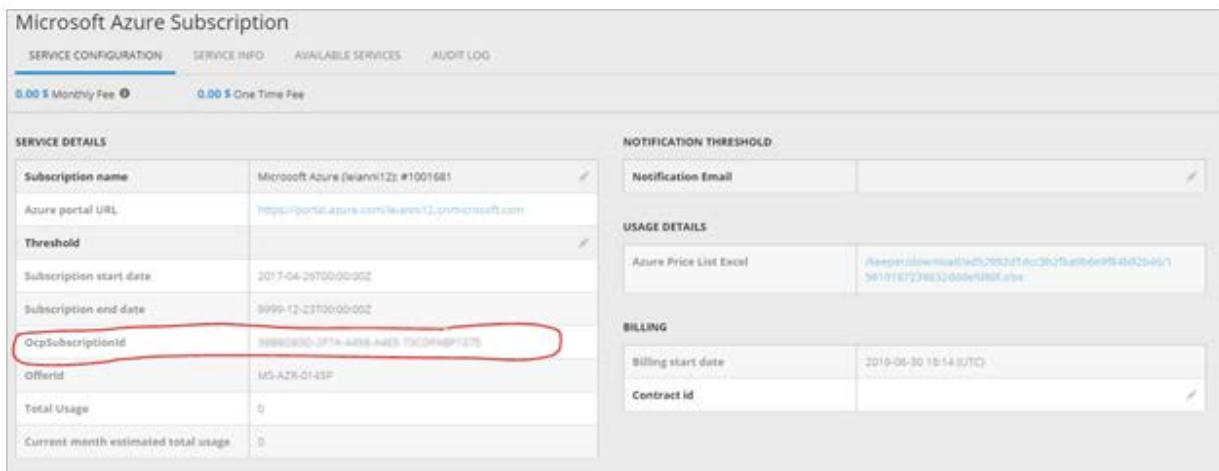
Once you have these two IDs, you can create the Windows Virtual Desktop tenant.

Create a new PowerShell script, modifying the **bold** variables below to reflect your tenant ID and subscription ID, and execute the following commands. When prompted, sign in using the admin account that was assigned to the TenantCreator role.

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```
#Install PowerShell modules
Install-Module -Name Microsoft.RDInfra.RDPowerShell
Import-Module -Name Microsoft.RDInfra.RDPowerShell

# Setting Deployment context
$brokerurl = "https://rdbroker.wvd.microsoft.com"
$aadTenantId = "<value from #1 above>"
$azureSubscriptionId = "<value from #2 above>"
Add-RdsAccount -DeploymentUrl $brokerurl
```

Next, use the following command to create the Windows Virtual Desktop tenant:

```
New-RdsTenant -Name Contoso -AadTenantId $aadTenantId
-AzureSubscriptionId $azureSubscriptionId
```

Deploy your first Windows Virtual Desktop host pool

Step 1: Configure Basic Settings

To get started, visit the Microsoft Azure Portal, select **Create a Resource** and search for
Windows Virtual Desktop.
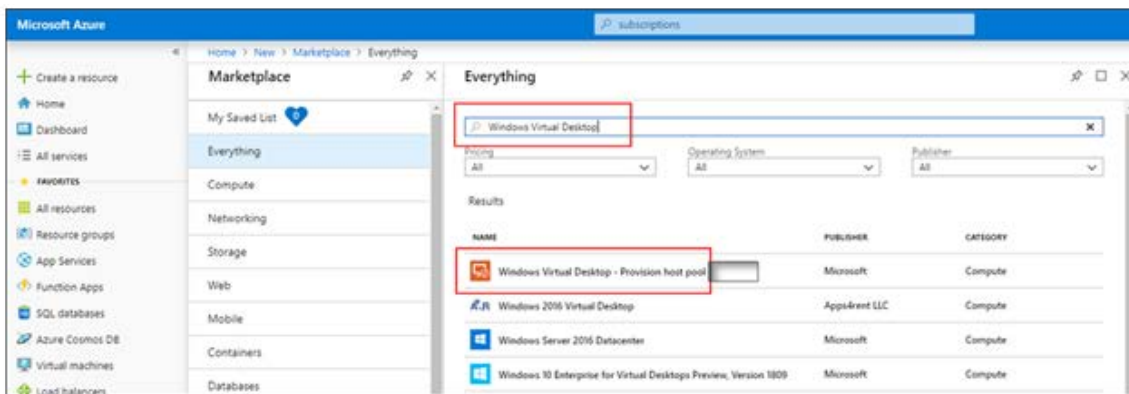
Select **Windows Virtual Desktop – Provision a host pool** and click **Create**. Then enter the following
details:
- **Hostpool name** – Choose something descriptive for the pool of hosts, e.g. "FullDesktop"
- **Desktop type: Pooled or Personal** – Choose Pooled unless you are deploying a virtual desktop
  infrastructure *(VDI)* configuration wherein every user has their own dedicated VM; in that case,
  select Personal.
- **Default desktop users** – Add a comma separated list of users. *(Group support will follow later)* You
  can also use PowerShell to add users to this host at a later point.
- **Subscription** – Select Microsoft Azure.
- **Resource group** – Use an empty Resource Group or enter a name to create a new one
- **Location** – Enter the location where the resources, such as the VMs, will be created.
  This can be any existing Azure region of your choice.

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Step 2: Configure the virtual machines

Next, you'll decide on and select your VM size details:

- Select a **Usage Profile** that matches your environment: **Light, Medium, Heavy,** or **Custom**.

- Enter the number of **Total users** that will be using this host pool

- If desired, change the **Virtual machine size**. For your test environment, which will likely have very few users, you could opt for a smaller size. You can find additional examples and size guidance in the <u>Windows Virtual Desktop pricing guide</u>.

- Finally, add a prefix for the VMs. Note: make sure your prefix is unique; don't reuse your prefixes. Also, don't use underscores.

Step 3: Configure VM settings

To configure the VMs for Azure, you will need to:

- Select a custom image from **Blob storage**, a **Managed image** in Azure, or one from the **Gallery**.

  - Our recommendation would be to test "Windows 10 Enterprise multi-session with Office 365 ProPlus" from the Azure Gallery.

- Select the **Image OS**

- Select the **Disk Type**. SSD is recommended.

- Enter credentials that have permission to join a VM to Active Directory

- *(Optional)* Specify the domain and/or OU

- *(Optional)* Use managed disks

- Configure the virtual network and subnet. Pay close attention to this step as this wizard will spin up virtual machines and join them to AD. This means the virtual machine must be able to locate the Domain Controller. Consequently, we recommend opening a separate tab in your browser and validate that:

  - The DNS server IP address that is assigned to the VM points to the DC or AD DS; this can be configured in multiple locations including on your virtual network.

  - The DC, VM, and network resources are in the same Azure region

Step 4: Enter authentication details

- Once you have configured your VM settings, you will need to enter details about your Windows Virtual Desktop tenant and Azure AD tenant. Unless otherwise directed, leave the **Windows Virtual Desktop tenant group name** as "Default Tenant Group."

- For the Windows Virtual Desktop tenant name, enter the name of the tenant you create earlier in this process.

  - Note: if you are unsure what your Windows Virtual Desktop tenant name is, use the Power-Shell command "Get-RdsTenant" to obtain it.

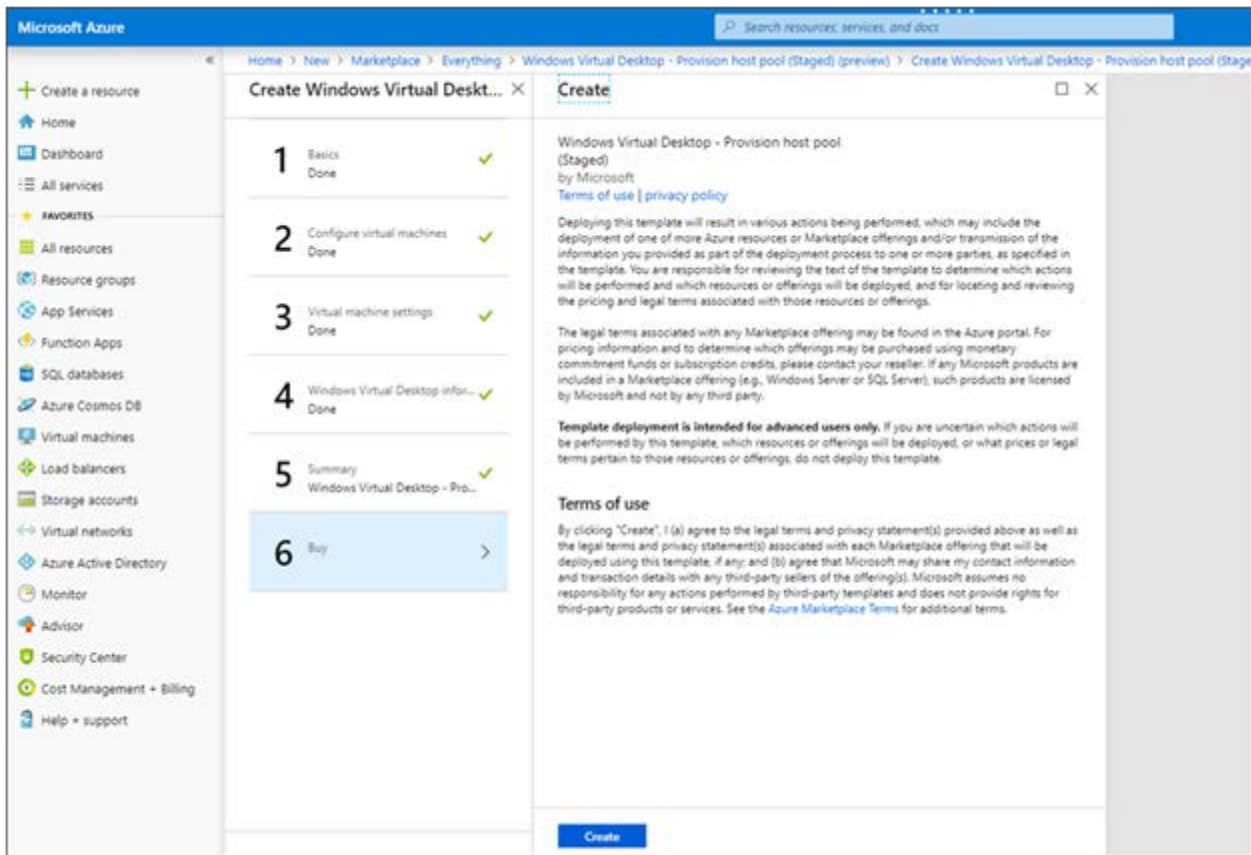- Enter valid credentials for your Azure AD environment

Step 5: Check the summary

- Check the summary window to see your setup pass validation, then click **OK**

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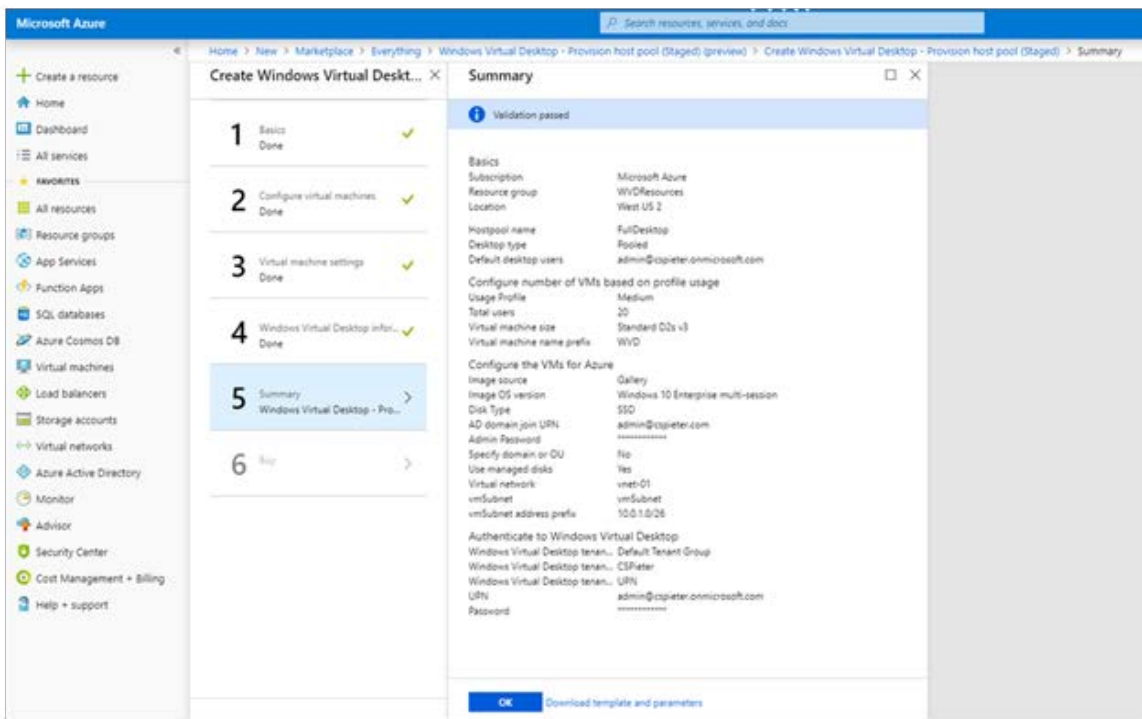
Step 6: Finalize the create of your host pool

Click **Create**, sit back, and relax. Deployment takes roughly 20 minutes to finish.

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Test if a user can access a full desktop

Once you have created a Windows Virtual Desktop host pool, your customers have two options for access; a client app you can install on Android or Windows *(the iOS app is still in Beta but can be tested using TestFlight)*, or use the HTML5 client.

Test with the Windows client application

- Download the latest Windows Remote Desktop client and subscribe to the feed using the following URL: https://rdweb.microsoft.com/ Once subscribed, you will find virtualized apps and desktops in the Start menu. You'll also notice that it's possible to enable conditional access and/or MFA for users when subscribing to a feed.
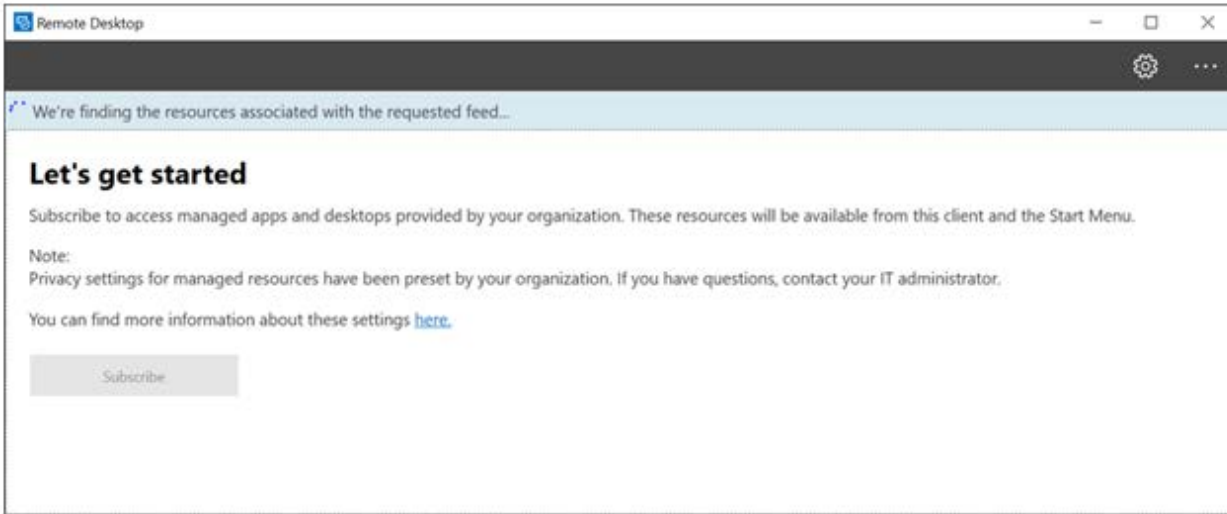
- **Test with the HTML5 client**

- Launch a browser in privacy or incognito mode and visit http:/aka.ms/wvdweb to access the HTML5 client. Authenticate using the login information to which you assigned a full desktop session.
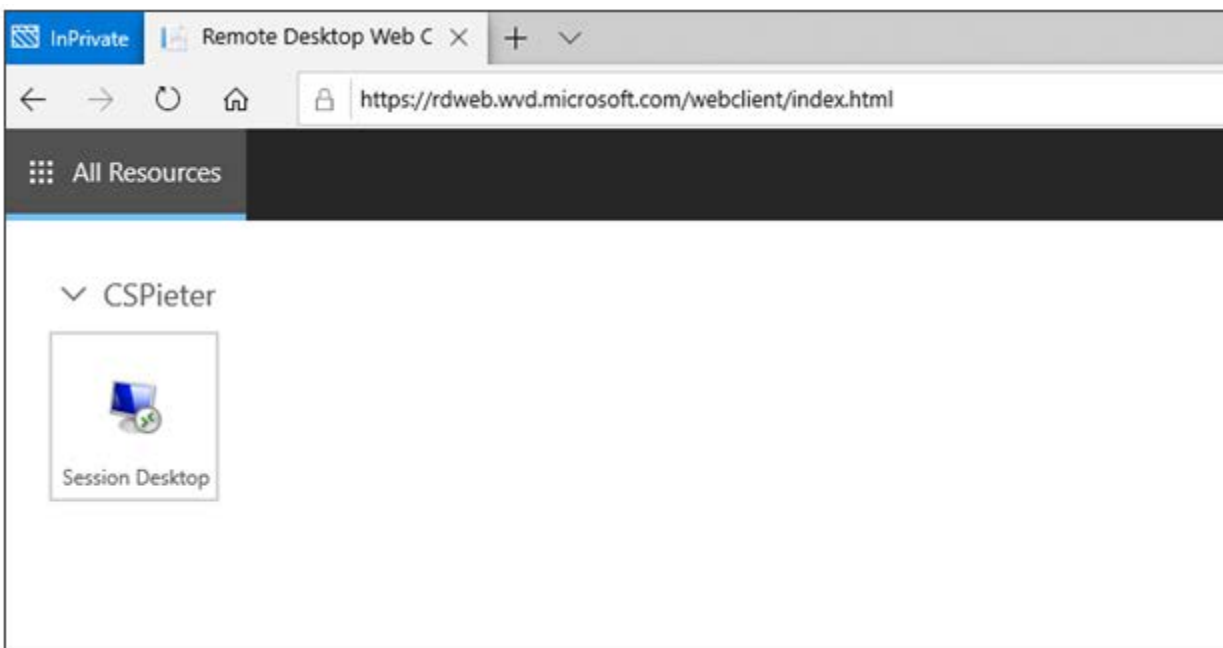
- If you are successful, you should be able to view the desktop:

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What's next?

- Once you have completed your setup of Windows Virtual Desktop, you can assign other users to your host pool using the following PowerShell command, replacing <WVDTENANTNAME> with the name of your tenant, <HOSTPOOLNAME> with the name of your host pool, and leveraging the appropriate user principal name:

```
Add-RdsAppGroupUser <WVDTENANTNAME> <HOSTPOOLNAME> "Desktop Application Group" -UserPrincipalName USER@TENANT.onmicrosoft.com
```

You can also move on to more advanced tasks, such as:

- Setting up a host pool dedicated for RemoteApps instead of full desktops

- Installing **FSLogix profile containers** so that you can benefit from the profile solution that makes Office365 ProPlus work, just like on a local PC and/or laptop. Think, *roaming profiles*.