

S E M A N A
PROFISSÃO **CLOUD**

Implementing WVD
Maio/2021



Material Didático **versão 1.5**

Sumário

Boas Vindas	4
Passeio no Data Center da Nuvem	4
Aula1 - Criando o seu Ambiente de Estudos.....	5
1.1 Criação da nova conta Outlook.com para o Workshop	5
1.2 Solicitando seus créditos	6
1.3 Resgatando o seu crédito	7
1.4 Criando sua Primeira Virtual Machine na Cloud.....	9
1.5 Destrave a sua 1ª medalha	12
1.6 Técnica de Crescimento do LinkedIn	13
Aula 2 – Preparando o Ambiente Corporativo.....	14
2.1 Conhecendo o Projeto	14
2.2 Apagando todos os Grupos de Recursos	19
2.3 Preparando o Ambiente	21
2.4 Implementando o Ambiente.....	21
Aula 3 – Implementando a POC.....	24
3.1 Arquitetando o Projeto	24
3.2 Configuring Azure AD Connect with AD DS	24
3.3 Create Azure AD groups for WVD	37
3.4 Create a master image for WVD (Optional).....	43
Aula 4: Implementando o WVD	60
4.1: Create a host pool for Personal desktops.....	60
4.2: Create a host pool and assign pooled remote apps. (Optional).....	67
4.3: Connect to WVD with the web client	79
Aula 5: Fechamento do Workshop	86
5.1 Apagando todo o cenário	86

Sobre o Autor

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Ministra treinamentos de Cloud Computing para grandes corporações: Itaú, Bradesco, Porto Seguro, Casas Bahia, Petrobras e muito outros.



[Conecte-se comigo no LinkedIn](#)



Esse material é frequentemente alterado para você ficar sempre atualizado! Você tem em mãos a **versão 1.5** dessa Apostila, sempre que passar por aqui verifique se está com a versão mais nova clicando [AQUI nesse link](#). Qualquer dúvida ou sugestão, me envie um email para suporte@zecanunes.com

Boas Vindas

Seja muito Bem Vindo (a) ao Workshop da Semana Profissão Cloud!

Esse é Seu material de apoio para participar do Workshop de Cloud Computing, então aperte os cintos e vamos começar.

Prepare a sua agenda e já marque o nosso compromisso durante essa semana, sempre no Horário de Brasília:

		CLOUDFLIX 9hs	Cloud Workshop 20hs
SEG	24/05	<u>Episódio #1</u>	<u>Aula #1</u>
TER	25/05		<u>Aula #2</u>
QUA	26/05	<u>Episódio #2</u>	<u>Aula #3</u>
QUI	27/05		<u>Aula #4</u>
SEX	28/05	<u>Episódio #3</u>	<u>Aula #5</u>

Passeio no Data Center da Nuvem

Para você conhecer por dentro de Data Center de Nuvem e dar um passeio virtual realístico, igual ao que mostrei na LIVE #1, basta você clicar no Link abaixo:

<https://news.microsoft.com/stories/microsoft-datacenter-tour>

Aula1 - Criando o seu Ambiente de Estudos

A melhor maneira de você aprender e conhecer esse novo mundo é Praticando e nesse momento você terá a oportunidade de levantar o seu ambiente de estudos Cloud Computing, lembre-se que a melhor parte do Workshop é a mão-na-massa e vamos utilizando o Microsoft Azure de verdade, sem enrolação...então vamos lá!

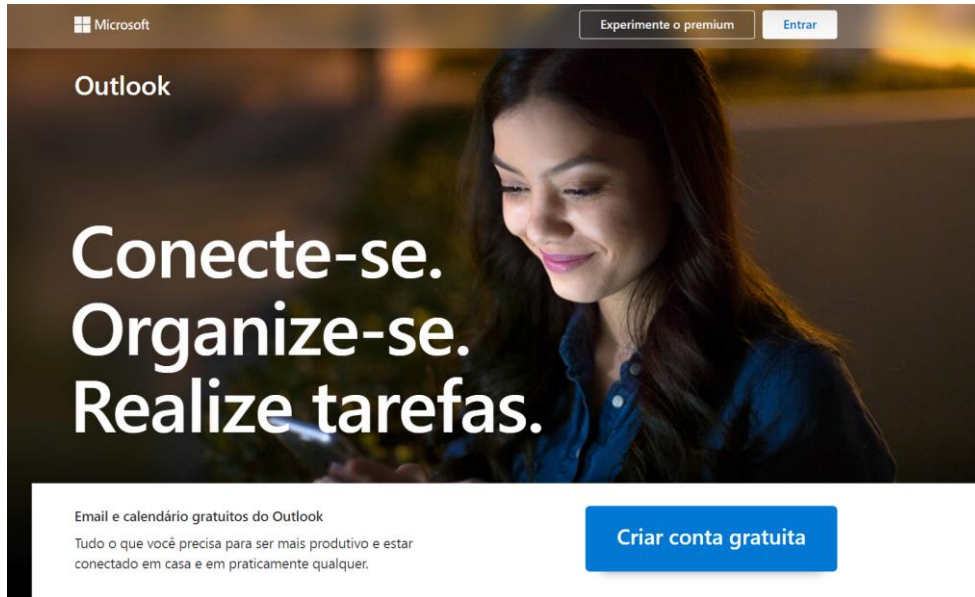
Pra facilitar ainda mais, todos os passos que você vai fazer daqui em diante eu apresento passo-a-passo nesse vídeo: <https://youtu.be/aGaO2j0S9oc>



1.1 Criação da nova conta Outlook.com para o Workshop

O primeiro passo é **criar um email exclusivo para esse evento**, atenção: “não use o seu email pessoal, mesmo que você já tenha um outlook.com”, faço questão e reforço que você crie um email novo que vai usar somente aqui nessa semana e depois pode apagar ou deixar de lado pois não vai mais precisar usar mesmo.

Abra navegador **em modo oculto (in-private)** e acesse o site Outlook.com.



Aperte em “Criar conta gratuita” e você deverá seguir os passos para criar um usuário/senha de estudos, por exemplo “zeca-profissaocloud@outlook.com” para começar.

Em seguida, **anote no seu caderno ou salve no seu notepad o Email e a Senha que você criou**, pois precisará desses dados durante todas as nossas atividades da semana.

1.2 Solicitando seus créditos

Agora você precisa acessar o seguinte site para solicitar os seus U\$50 para realizar todos os exercícios propostos em nossa semana, você vai ter acesso ao Azure de verdade, então muita atenção nessa parte!

[>> Clique AQUI para acessar o formulário de Solicitação](#)

S E M A N A

PROFISSÃO CLOUD

Workshop

Acesso a 1 (um) AzurePass com U\$50* de crédito para você utilizar no Azure durante o Workshop sem a necessidade de cadastrar um Cartão de Crédito.

(*) Não reembolsável

* Obrigatória

1. Email Pessoal *

Que você cadastrou na Semana Profissão Cloud

Insira sua resposta

2. Nome Completo *

Insira sua resposta

3. Email novo criado para o Workshop *

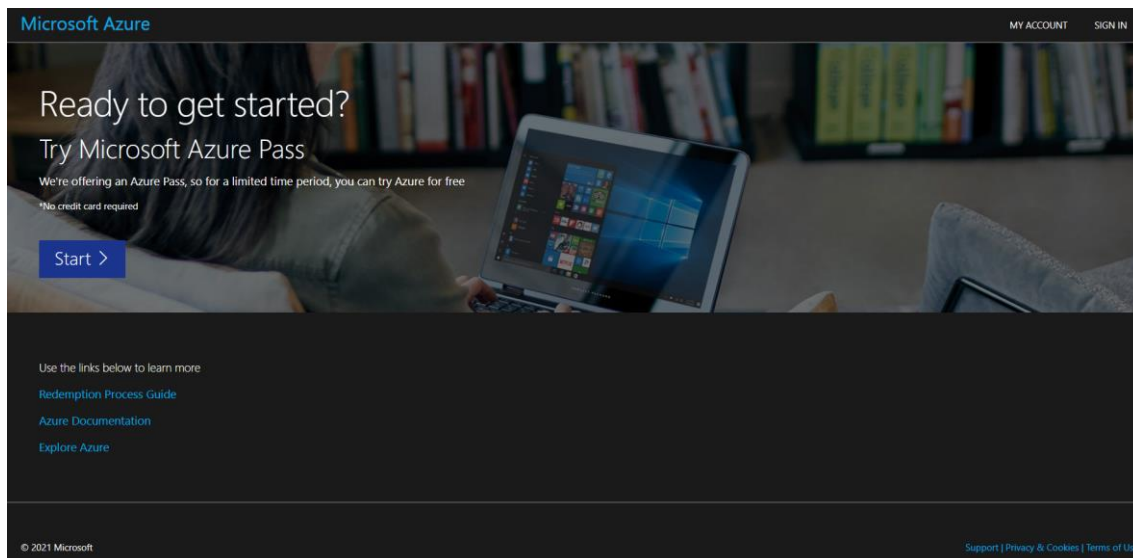
Essa conta @outlook deve ser criada seguindo as orientações da apostila

Insira sua resposta

Preencha e confira adequadamente o preenchimento de TODOS os campos e em poucos instantes você receberá um email em cada uma das contas de email que você inseriu no formulário. **ATENÇÃO:** Se esse email caiu na caixa **SPAM ou PROMOÇÕES**, mova imediatamente para a sua **Caixa de Entrada** para não perder as importantes comunicações do evento.

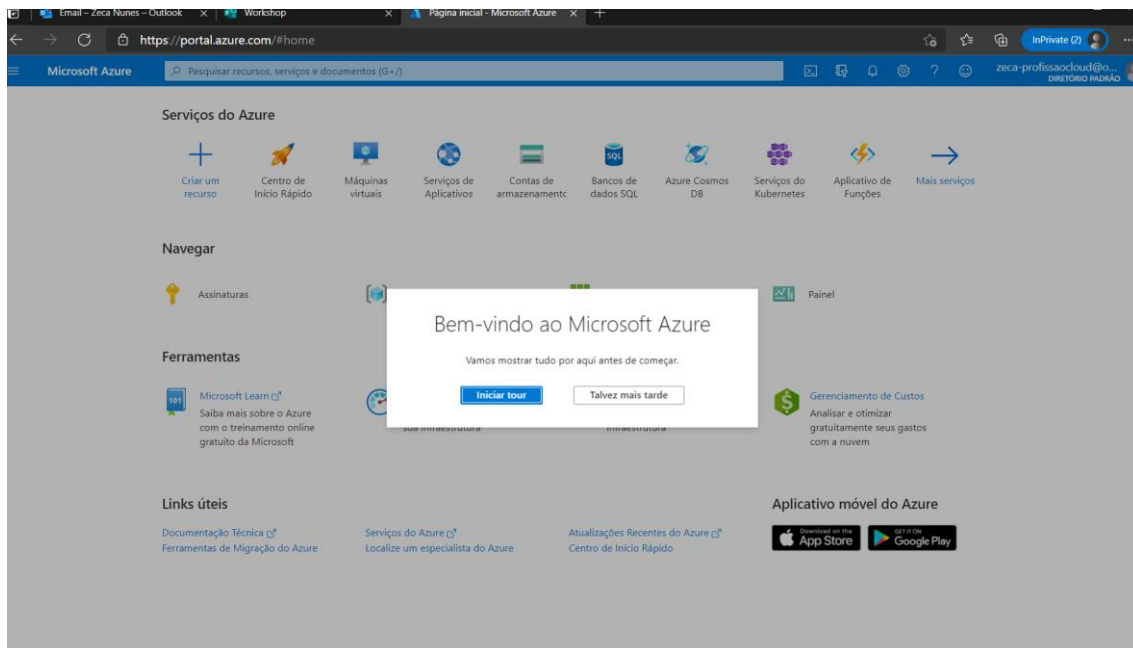
1.3 Resgatando o seu crédito

Em seguida, você deverá abrir uma nova **aba anônima** no MESMO navegador anônimo e digitar o seguinte site: microsoftazurepass.com



Nessa tela você deve apertar **START**, em seguida confirmar o endereço de email outlook.com que você acabou de criar, se tiver de digita-lo novamente faça com cuidado sempre observando para não errar nenhum caractere. Lembre-se, você só recebe UM desses créditos e se tiver problema não poderemos restituir para você.

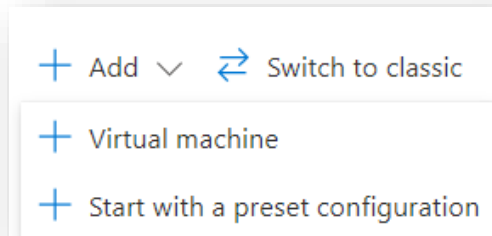
Muito bem, você já está lá dentro do seu ambiente de estudos no Microsoft Azure!



1.4 Criando sua Primeira Virtual Machine na Cloud

Com o Portal do Azure aberto e configurado em Inglês, siga os passos:

1. clique em Virtual Machine
2. clique em +Add e em seguida +Virtual machine



3. Na opção **Resource group** clique em **Create new** e digite o nome: "SalaTeste"
4. Na opção **Virtual machine name**, digite: "PrimeiraMaquina"
5. Na opção **Image**, selecione "Windows 10 Pro, Version 20H2 – Gen1"
6. Na opção **Username**, digite: **AzureAdmin**
7. Nas opções **Password** e **Confirm password**, digite: **Pa\$\$w0rd!1234**
8. Na última opção **Licensing**, clique no checkbox para Confirmar

9. Pressione o botão **Review + Create**, como apresentado na imagem abaixo

Basics Disks Networking Management Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Azure Pass – Sponsorship

Resource group * ⓘ (New) SalaTeste
[Create new](#)

Instance details

Virtual machine name * ⓘ PrimeiraMaquina ✓

Region * ⓘ (US) East US

Availability options ⓘ No infrastructure redundancy required

Image * ⓘ Windows 10 Pro, Version 20H2 - Gen1 ✓
[See all images](#)

Azure Spot instance ⓘ ☐

Size * ⓘ Standard_D2s_v3 - 2 vcpus, 8 GiB memory (R\$ 343.31/month) ✓
[See all sizes](#)

Administrator account

Username * ⓘ AzureAdmin ✓

Password * ⓘ ✓

Confirm password * ⓘ ✓

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * ⓘ ☐ None ☒ Allow selected ports

Select inbound ports * ⓘ RDP (3389)

⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

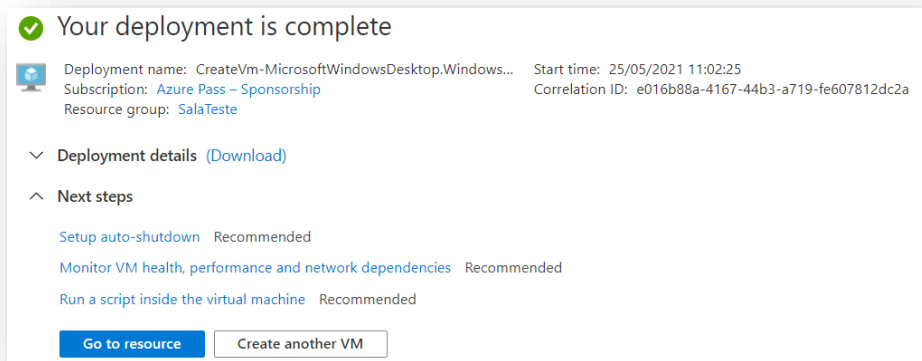
Licensing

☒ I confirm I have an eligible Windows 10 license with multi-tenant hosting rights. *

Review + create < Previous Next : Disks >

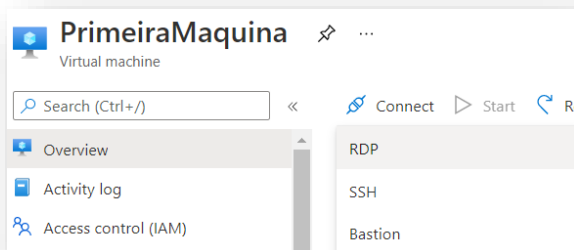
10. Aguarde a validação e clique em **Create** para finalizar

11. Prontinho, se tudo correu bem, você vai receber essa mensagem ao final do processo, que pode levar de 1 a 5min.



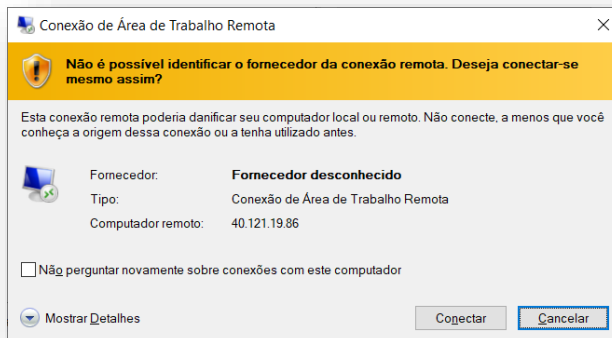
12. Nesse momento você pode clicar em **Go to resource**

13. Em seguida clique em **Connect** e em seguida **RDP**

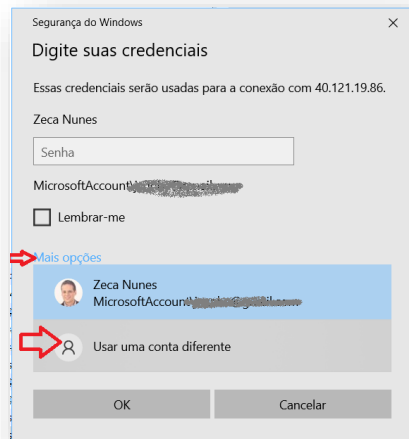


14. Na tela seguinte clique em **Download RDP File** para baixar o arquivo

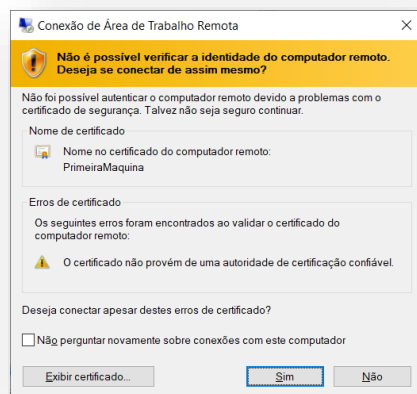
15. Clique no arquivo baixado e aparece o seguinte tela



16. Clique em Conectar e será apresentado uma tela de senha
Clique em **Mais Opções** e em seguida **Usar uma conta diferente**



17. Agora você pode digitar o Usuário e Senha que configuramos no passo 6 e 7 dessa sequência: AzureAdmin e Pa\$\$w0rd!1234
18. Uma próxima tela será apresentada, agora sobre certificado digital, basta aceitar clicando em SIM



19. Tudo pronto, agora você está acessando a sua maquina Windows 10 PRO direto na Nuvem e pode instalar programas, navegar super veloz e fazer o que quiser!

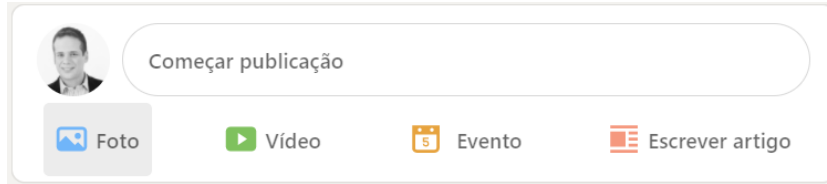
1.5 Destrave a sua 1ª medalha

Parabéns, se você chegou até aqui você conseguiu acessar a sua Primeira Maquina Virtual (Virtual Machine) na Cloud!!! Estou muito feliz com essa vitória e quero te reconhecer com uma medalha de honra ao mérito e você deve postar no seu LinkedIn para mostrar para toda a comunidade essa conquista.

1. Em uma nova aba, copie e cole o link da medalha:

<https://zecanunes.blob.core.windows.net/apostila/WVD/badge-aula01.png>

2. Clique com o botão direito do mouse sobre a imagem e Salve no seu computador para usar no próximo passo
3. Acesse seu LinkedIn e na Opção de “**Começar publicação**” clique em **Foto**



4. Selecione a imagem da sua medalha e pressione **Concluído**
5. Agora no campo “**No que você está pensando**” digite o seguinte texto:
Estou participando do Workshop na #SemanaProfissaoCloud e hoje eu coloquei a minha Primeira Virtual Machine na Cloud com a ajuda do Zeca Nunes ☁ acesse através do link <https://zecanunes.com/semana>
6. Clique em **Publicar**

1.6 Técnica de Crescimento do LinkedIn

Apresentei uma Técnica Secreta para o crescimento da sua rede de contatos no LinkedIn, para isso é importante você realizar a etapa anterior a risca, nossa comunidade está em peso no LinkedIn e o objetivo é fazer você ser encontrado nessa grande rede, por isso usamos a medalha e o texto com hashtag.

Nesse momento você vai fazer uma busca no LinkedIn para o termo: #SemanaProfissaoCloud, visite pelos menos 10 perfis de pessoas que postaram a medalha e Conecte-se a cada um deles. Na hora de solicitar conexão, coloque que você a conheceu no Workshop da Semana Profissão Cloud.

Usando essa técnica 1x por dia, até o final da semana você já terá pelo menos 50 novas conexões, observe que nosso objetivo são 500, então mãos a obra nesse trabalho de networking qualificado da sua rede.

Até o final da semana, quero que você me fale que tipos de resultados você notou no seu LinkedIn, então capricha 😊

Aula 2 – Preparando o Ambiente Corporativo

2.1 Conhecendo o Projeto

Customer situation

Contoso Healthcare, headquartered in Los Angeles, California, is a national healthcare provider with a network of affiliate hospitals and doctor's offices located throughout North America. These locations continue to grow through acquisition. The nature of their business requires a high level of security of Personal Identifiable Information (PII) for their employees.

Contoso currently has approximately 250 workstations within their environment with business applications for non-clinical users from developer, finance, and knowledge departments. Contoso is currently supporting existing data centers in California and Northern Virginia with VMware for the server control plane and a partial deployment of Citrix virtual desktop infrastructure. These locations are connected with a private WAN connection and a backup VPN over broadband.

Ken Greenwald, Contoso Healthcare CTO, has been evaluating the value of the public cloud and views Microsoft Azure as an excellent option to maintain availability and increase scalability of resources to the organization. His team has also struggled with managing 250 workstations spread across the organization and needs an option to easily manage and maintain a standardized desktop image that gives users secure access to applications. Ideally, these desktop images would not be maintained on local machines. As Ken states, "Contoso Healthcare has continued to grow through the acquisition of doctor's offices and hospitals throughout North America, which has created an issue with our ability to standardize hardware at these locations. The Board of Directors has been unwilling to increase capital expenditures for new equipment and we are forced as an IT organization to maximize our current VMware and Citrix virtual desktop infrastructure to deliver applications to users. We need the ability to utilize what we have in place within our data centers and integrate Microsoft Azure technologies to facilitate our ability to standardize across the organization and quickly integrate a new office acquisition."

Contoso Healthcare's CISO, Laura Knight, has an additional list of objectives to address. She is concerned with the threat of data exposure throughout the organization that is posed by the multiple devices that they have acquired through their office acquisitions. The continued increase in mobility of these devices raises concerns of Personal Health Information (PHI) and Personally Identifiable Information (PII) being exposed to unauthorized individuals. She also is responsible for the auditing of privacy standards, such as ISO 27001, HIPAA, and California Personal Protection Act (similar to GDPR) controls. Laura has said, "The growth of Contoso Healthcare has created an increased burden on my security and compliance organization. It has become more difficult to monitor systems as they come online with variations of operating systems. Some of these

operating systems do not support mobile device management software to audit use and application access. In addition, enforcing a centralized standard for security policies and access to confidential information has been challenging. My organization needs to be able to maintain the security of our data and resources, and mitigate the prospect of data loss due to threat or unauthorized access to devices.”

Contoso Healthcare has completed an initial cloud assessment of their current infrastructure and applications, and they have divided the following areas that they feel that Microsoft 365 and Azure technologies can support:

Security: The business of healthcare has become more reliant on mobile devices to access files and financial records, which has created a concern over theft and data exposure. Contoso would like to eliminate the possibility of any PHI or PII being located on a local device through use of a virtual desktop infrastructure. They would also like to be able to manage applications that are authorized, and block cloud applications that are not authorized. Security controls will need to be audited, logged, and reviewed to ISO 27001, California Personal Protection Act, and HIPAA standards.

Availability and Scalability: Being a healthcare provider, Contoso has a requirement for applications to be accessible 24x7, so any infrastructure should be designed with high availability and scalability in mind. As Contoso Healthcare grows through acquisitions, they need to be able to scale out resources quickly for the addition of new users.

Deployment Acceleration: Contoso does not have a budget for the additional capital expenses required to upgrade current devices. Therefore, they will need to utilize the current devices that are available to deliver a standard desktop image to users. Contoso will be utilizing their current VMware and Citrix infrastructure and control plane for application delivery to user desktops.

Customer needs

1. Contoso Healthcare needs the ability to manage mobile device location and avoid access to patient health records when not on the Contoso Health network.
2. Contoso Healthcare requires that any PHI and PII data is stored in a central encrypted storage account and not on local devices.
3. Contoso Healthcare must be able to log activity and access, and be able to audit compliance to ISO 27001, California Personal Protection Act, and HIPAA controls.
4. Contoso Healthcare requires 24x7 access to applications and the ability to scale resources as demand increases.
5. Contoso Healthcare needs redundancy in network connections with low latency when accessing applications.

6. Contoso Healthcare requires the ability to create and deploy a standardized desktop image to all users without the need to update and manage local devices.
7. Contoso Healthcare needs to leverage the current application infrastructure in their current California and Northern Virginia datacenters.

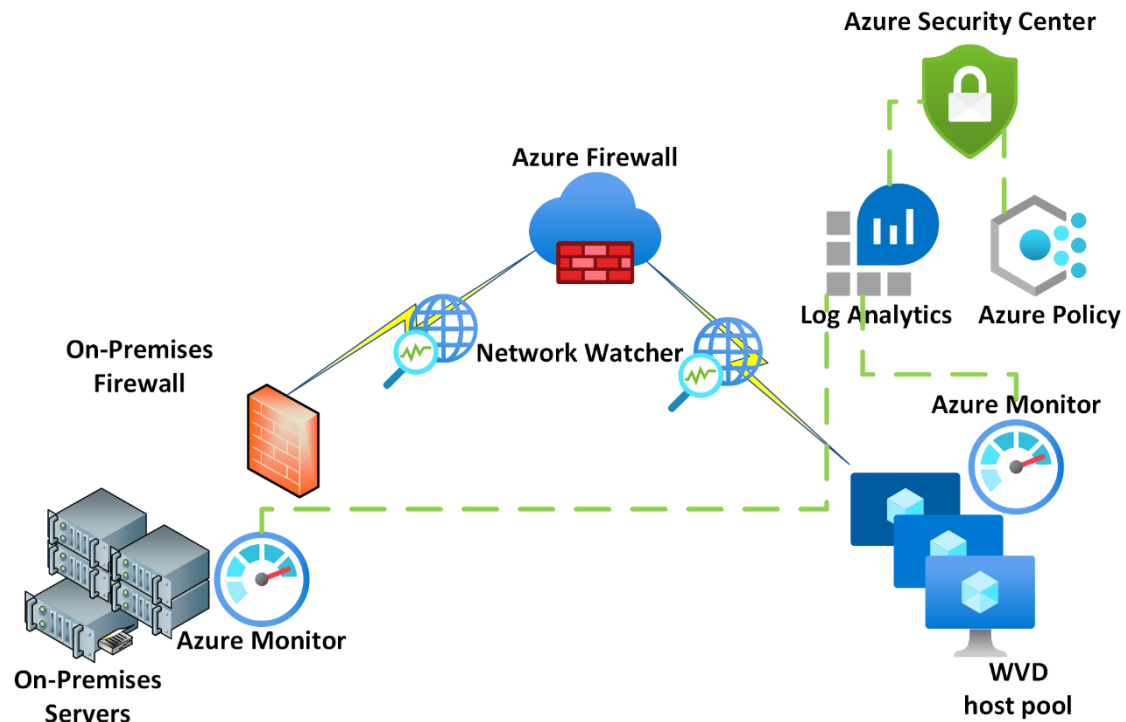
Customer objections

1. The CTO at Contoso Healthcare does not want to invest in new workstations and mobile devices to support the standardized desktop image. This includes non-OS, Macs, Android, and thin clients. Can these devices support the new image?
2. The CISO at Contoso Healthcare needs to be convinced that data will not be exposed. How would Microsoft support the data protection needs for Contoso Healthcare?
3. Contoso Healthcare must be able to log and audit all activity on the desktop image. How will this be handled within the cloud and on-premises environments?
4. Connections between the cloud and existing data centers must be secure and reliable to support their requirements. How will this be addressed and monitored?
5. Contoso Healthcare has made a substantial capital investment in their current data centers that they do not want to decommission. So would like to leverage existing infrastructure where possible.

Infographic for common scenarios

Security Scenarios

The security scenario applies to the potential security, monitoring, and compliance auditing options needed to design the solution.



Common scenario of how Azure Monitor and Network Watcher can be used for both Azure and non-Azure VMs and network connections. On the right, the on-premises servers are connected to Azure Monitor with an agent and Network Watcher is monitoring the connection between the on-premises datacenter and Azure. In Azure, Azure Monitor is connected to the Windows Virtual Desktop host pool instances, and network watcher is monitoring the connect to these hosts and the VNET. The metric and activity log information is then fed into Azure Monitor, Log Analytics, Azure Policy, and Azure Security Center for managing these resources for performance, activity, and compliance.

Network Scenarios

Network scenarios diagram the potential options for connecting from Microsoft Azure to the on-premises network.

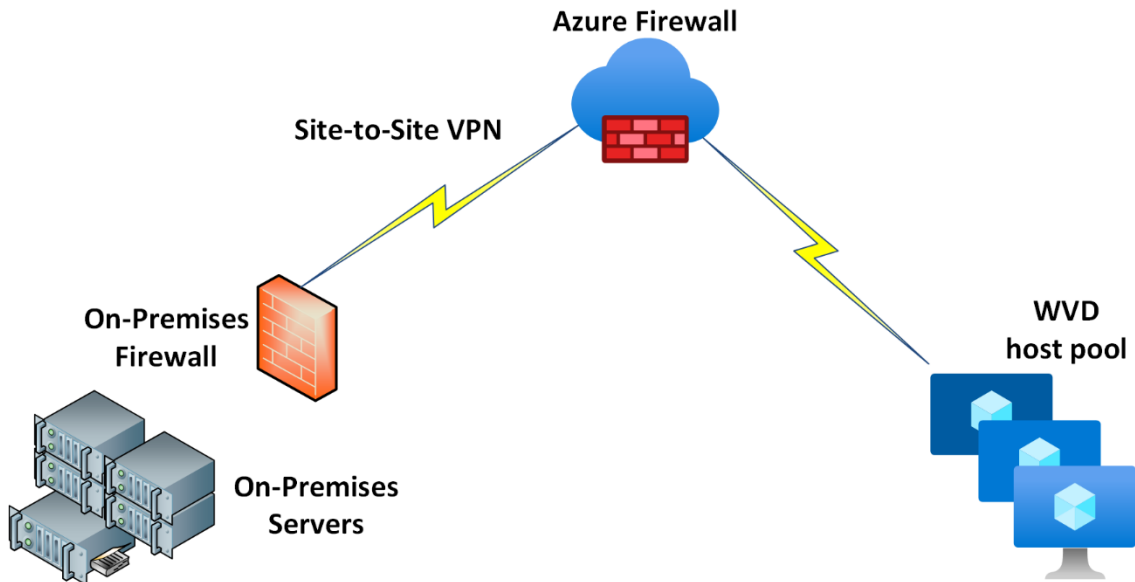


Diagram presenting the site-to-site connection configuration for the on-premises datacenter to connect to Azure through a VPN connection between the on-premises firewall and the Azure firewall.

Windows Virtual Desktop standard architecture

This diagram outlines a simple Windows Virtual Desktop architecture with Azure and Microsoft 365. This includes the Windows Virtual Desktop user connection and the Windows Virtual Desktop host pools.

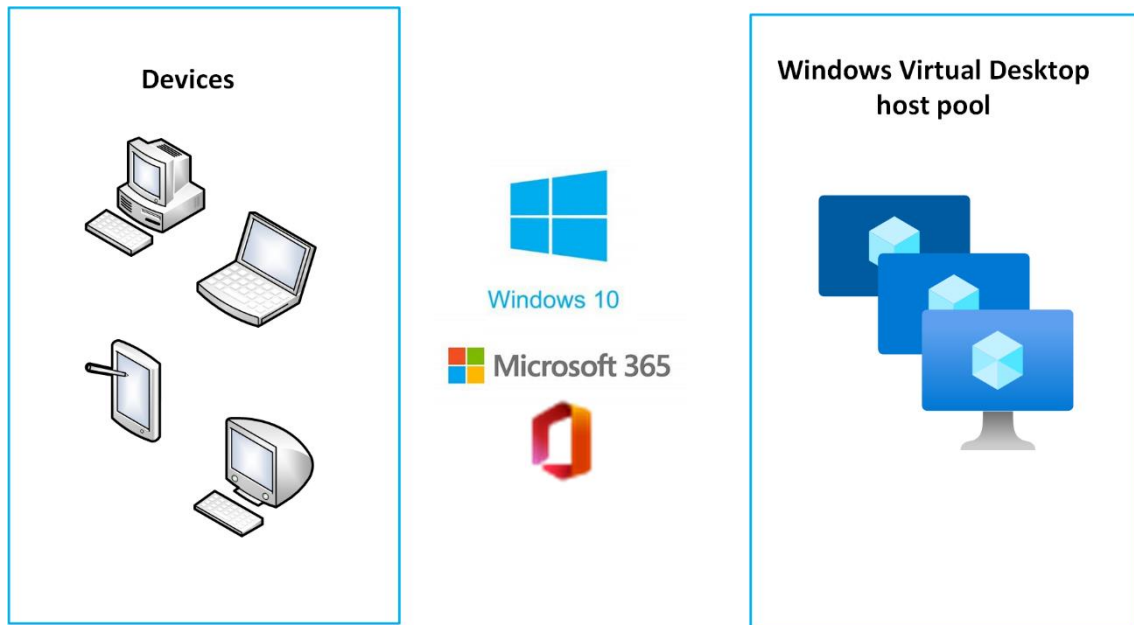


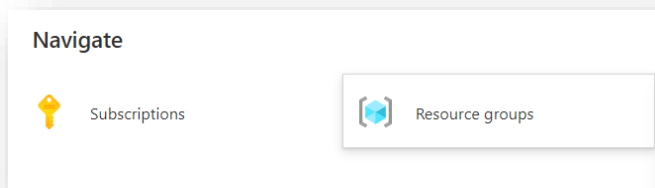
Diagram referencing that there are multiple devices that will need to connect to the Windows desktop virtual image for Windows 10 and Microsoft 365 applications via the WVD hostpool.

2.2 Apagando todos os Grupos de Recursos

Eu sei que isso pode ser triste, mas para começar vamos precisar limpar nosso ambiente de estudos para que consigamos dar o andamento ao laboratório, então é importante apagarmos a maquina Windows 10 criada anteriormente

Abra um navegador anônimo e acesse o Azure através do site portal.azure.com, nesse momento você será solicitado a digitar seu usuário (@outlook.com) e senha que criamos ontem

Na parte inferior da tela, você pode clicar e acessar o Resource groups

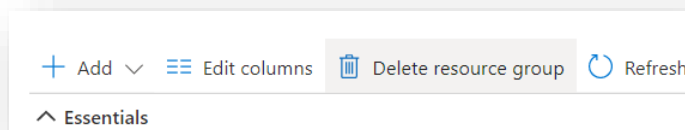


Faça o seguinte procedimento para cada linha listada nessa tela:

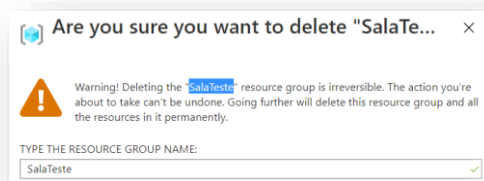
1. Clique em um grupo de recursos para acessar seu conteúdo



2. Na parte superior da tela, clique em Delete resource group



3. Na próxima tela digite o nome do Resource Group no campo correspondente. (Dica: você pode copiar o nome no próprio texto e colar no campo abaixo)



4. Pressione o botão “Delete”
5. No lado esquerdo da tela, selecione outro Resource Group, caso houver, e realize as operações 1 até 4 até apagar tudo.

2.3 Preparando o Ambiente

Nessa aula vamos fazer uma grande e delicada implementação, são serviços imprescindíveis para o funcionamento de uma grande empresa, são eles :

Virtual Network

- 1 Subnet
- 1 Network Security Group (Firewall)

Virtual Machine Server – Active Directory

- Active Directory Domain Services is installed and configured.
- Test users created in the domain.
- Azure AD Connect is installed and ready for configuration.
- Public IP address assigned for remote administration via RDP.

2.4 Implementando o Ambiente

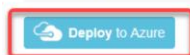
Com o portal do Azure aberto e seu usuário já autenticado, abra uma nova aba nesse navegador anônimo e siga as instruções abaixo:

1. Copy and Naviagate to this URL:
<https://github.com/PeterR-msft/M365WVDWS/tree/master/AAD-Hybrid-Lab>
2. Under Quick Start, click **Deploy to Azure**. This will open a new browser tab to the Azure Portal for custom deployments.

Azure Active Directory Hybrid Lab

Creates an AD VM with Azure AD Connect installed

Quick Start



3. If prompted, make sure to sign in with an account that is an owner for the Azure subscription.
4. Fill in the required ARM template parameters. Refer to the following example for more information on the parameters:

- Create a new Resource group: **WorkshopCloud**
- Select a Region: **EastUS**
- Create an Admin password: **AdminPa\$\$w0rd!1234**
- Create an AD Domain name: **workshop.local**
- Create a **Customupnsuffix** for WVD: **workshop**
- Create a Default user password: **Pa\$\$w0rd!1234**
- Select **Review + create**

Microsoft Azure Search resources, services, and docs (G+/I)

[Dashboard](#) >

Custom deployment

Deploy from a custom template
Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ MSDN Platforms

Resource group * ⓘ [Create new](#)

Parameters

Region * ⓘ East US

Asset Location ⓘ <https://raw.githubusercontent.com/PeterR-msft/M365WVDWS/master/A...>

Admin Username ⓘ ADAdmin

Deployment Number ⓘ 1

Admin Password * ⓘ

Ad Domain Name * ⓘ

Users Array ⓘ [{"FName":"Bob","LName":"Jones","SAM":"bjones"}, {"FName":"Bill","LName":...}]

Customupnsuffix * ⓘ

Default User Password * ⓘ

Vm Size ⓘ Standard_A2_v2

Virtual Network Address Range ⓘ 10.0.0.0/16

Ad Subnet Address Range ⓘ 10.0.1.0/24

Ad IP ⓘ 10.0.14

[Review + create](#) < Previous Next : Review + create >

The deployment is now underway. On average this process can take 30 to 40 minutes to complete. It is important that you monitor the deployment progress to ensure there are no problems. You can monitor progress by clicking the **notification** bell in the upper right corner and clicking **Deployment in progress....**

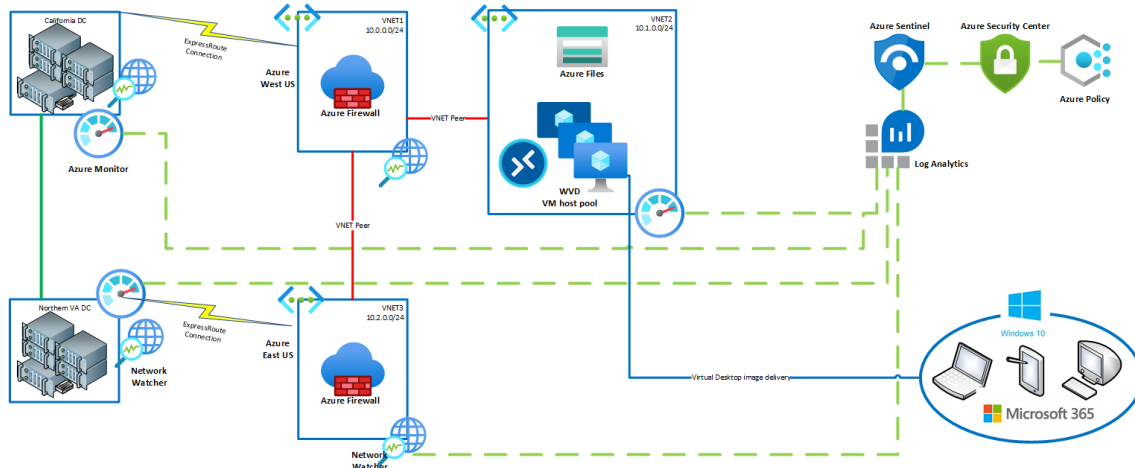
Note: While automation can make things simpler and repeatable, sometimes it can fail. If at any time during the ARM template deployment there is a failure, review the failure, delete the Resource Group and try the ARM template again, adjusting for any possible errors.

Once the ARM template is done being deployed, the status will change to complete. At this point the domain controller is ready for RDP connectivity.

You should follow all steps provided *before* performing the Hands-on lab.

Aula 3 – Implementando a POC

3.1 Arquitetando o Projeto



A ilustração acima representa a Arquitetura da Solução que vamos propor para o cliente, parece bem complexa a primeira vista e vamos simplificar no hora de fazer a PoC, pois primeiro precisamos apresentar o ambiente funcionando para só depois implementar o projeto como um todo.

O Termo PoC vem do inglês “Proof of Concept”, traduzindo para o Português temos “Prova de Conceito” e para essa solução vamos apresentar uma degustação do poder que a Nuvem Microsoft pode oferecer no negócio desse cliente, então apresentaremos um solução funcional e totalmente navegável para ele realizar a Prova de Conceito.

3.2 Configuring Azure AD Connect with AD DS

Duration: 60 minutes

In this exercise you will be configuring [Azure AD Connect](#). With Windows Virtual Desktop, all session host VMs within the WVD tenant environment are required to be domain joined to AD DS, and the domain must be synchronized with Azure AD. To manage the synchronization of objects, you will configure Azure AD Connect on the domain controller deployed in Azure.

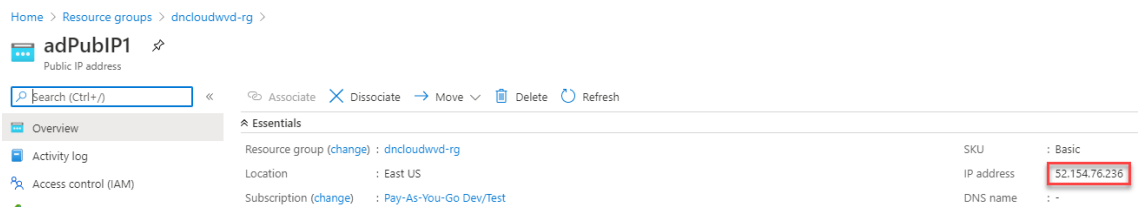
Task 0: Creating a new admin user on Azure AD

1. Sign in to the [Azure Portal](#).

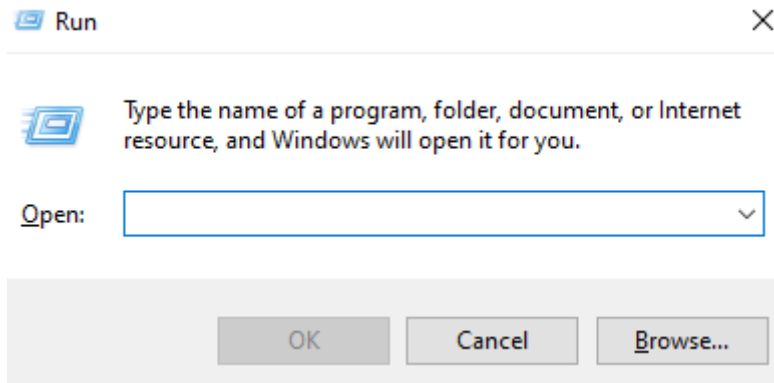
2. Select **Azure Active Directory** (use Search box to find) and click **User**
3. Click **+New user**
4. Fullfill this fields
 - a. User name: **azadmin**
 - b. Name: **Azure Admin**
 - c. Password: **"Let me create the password": TempPa55!**
 - d. **Group and roles: Roles**, click **User**, use search box to find **Global Administrator**, check them and click **Select** button.
 - e. Click **Create** button
 - f. Click on the new user created and take note of entire name user to use after in this Lab: **azadmin@youroutlook.onmicrosoft.com**
 - g. **Sign out** your Azure account
5. Signin [Azure Portal](#) with your **new Azure Admin account**
6. If needed change the password for new user to: **Profissao#C10UD** and then click on **"Ingore now (14 days until this needed)"**
 - a. **Sign out** this Azure account again

Task 1: Connecting to the domain controller

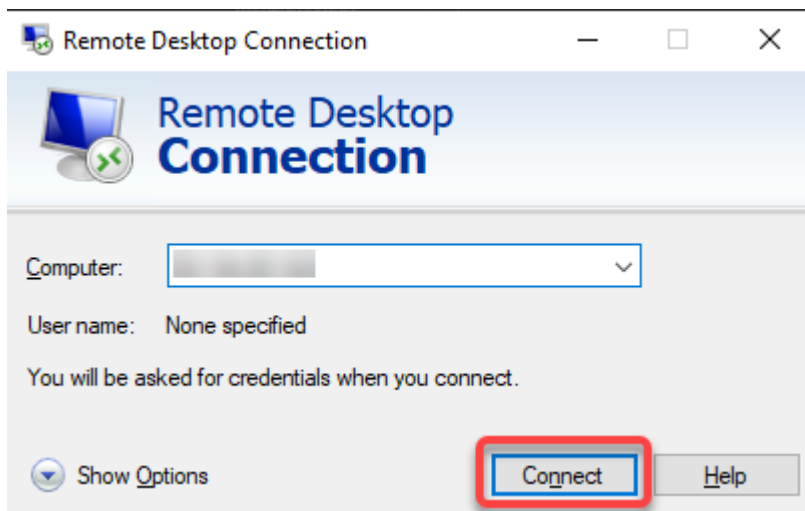
1. Signin [Azure Portal](#) with your **first Azure Admin account (@outlook.com)**
2. Type **Resource groups** in the search field and select it from the list.
3. On the Resource groups blade, Select on the resource group name that you created early in template deployment: **WorkshopCloud**
4. On the Resource group blade, review the list of available resources. Locate the resource named **AdPubIP1** and Select on it. Note that the resource type should be **Public IP address**.



5. On the Overview page for AdPubIP1, locate the **IP address** field. Copy the IP address to a safe location.
6. On your local machine, open the **RUN** dialog window, type **MSTSC** and hit enter.



7. In the **Remote Desktop Connection** window, paste in the public IP address from the previous step. Select **Connect**.



8. When prompted, sign in with the credentials
 User: **.\adadmin**
 Password: **AdminPa\$\$w0rd!1234**
 If prompted, Select **Yes** to accept the RDP certification warning.

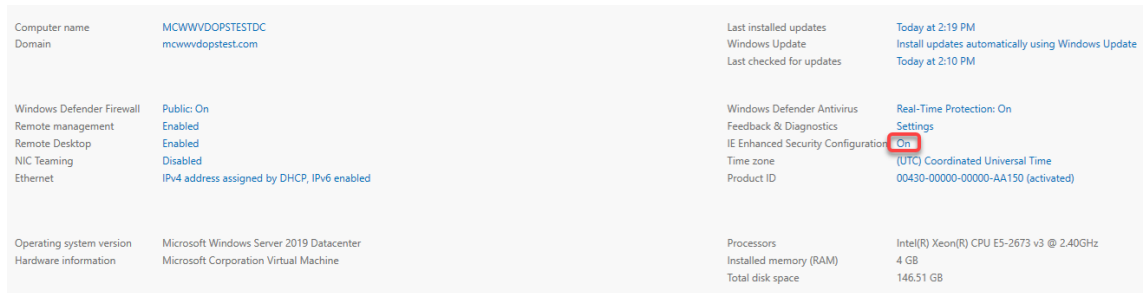
Note: This is the Active Directory account from the ARM template, not the Azure AD Global Admin account. If you have trouble signing in, try typing the credentials in manually, as copy and paste may include an unnecessary space, which will cause authentication to fail.

Task 2: Disabling IE Enhanced Security

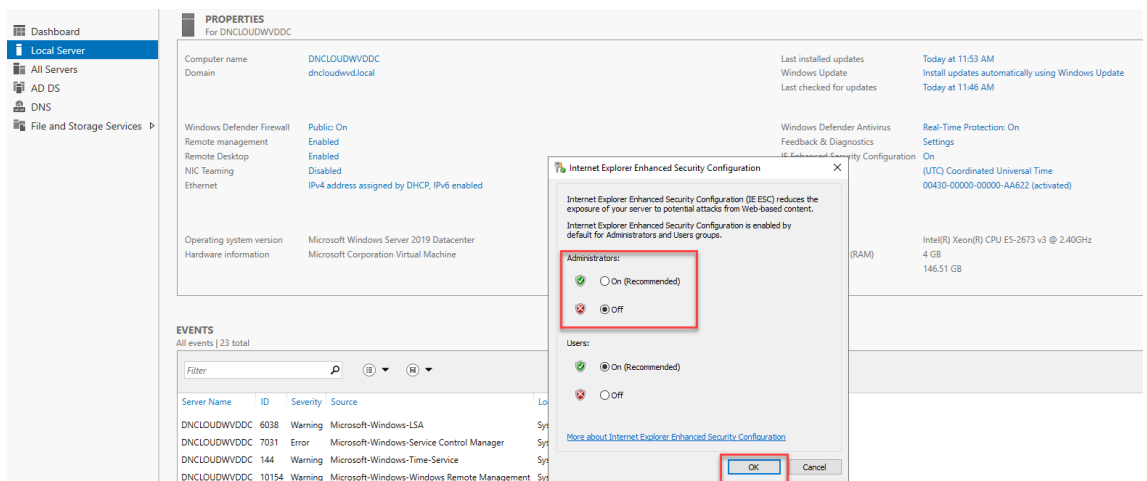
In an effort to simplify tasks in this lab, we will start by disabling [IE Enhanced Security](#).

1. Once connected to the domain controller, open **Server Manager** if it does not start automatically.

2. In Server Manager, select **Local Server** on the left.
3. Locate the **IE Enhanced Security Configuration** option and Select **On**.



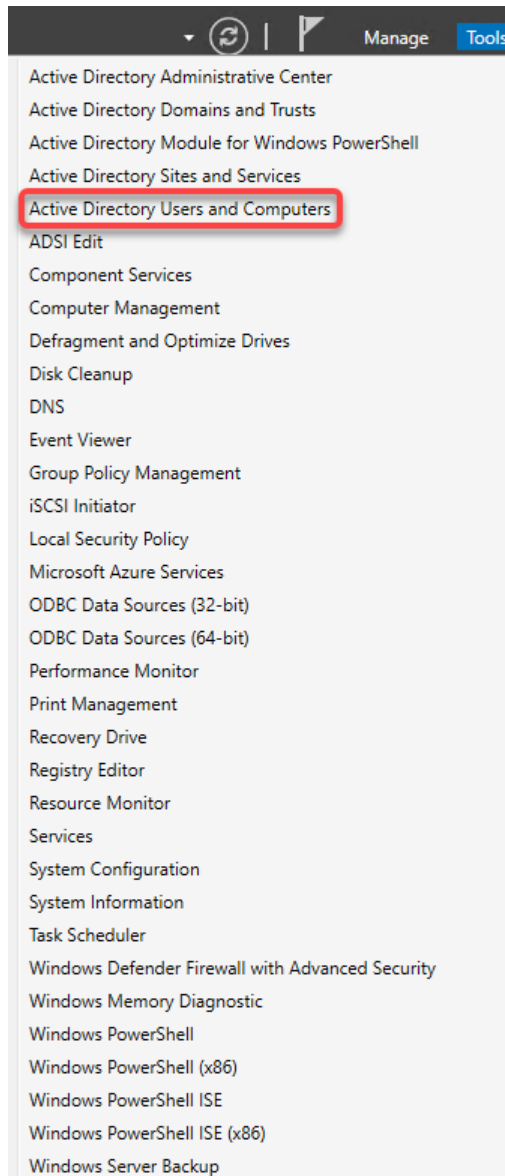
4. On the Internet Explorer Enhanced Security Configuration window, under **Administrators**, select the **Off** radio button and Select **OK**.



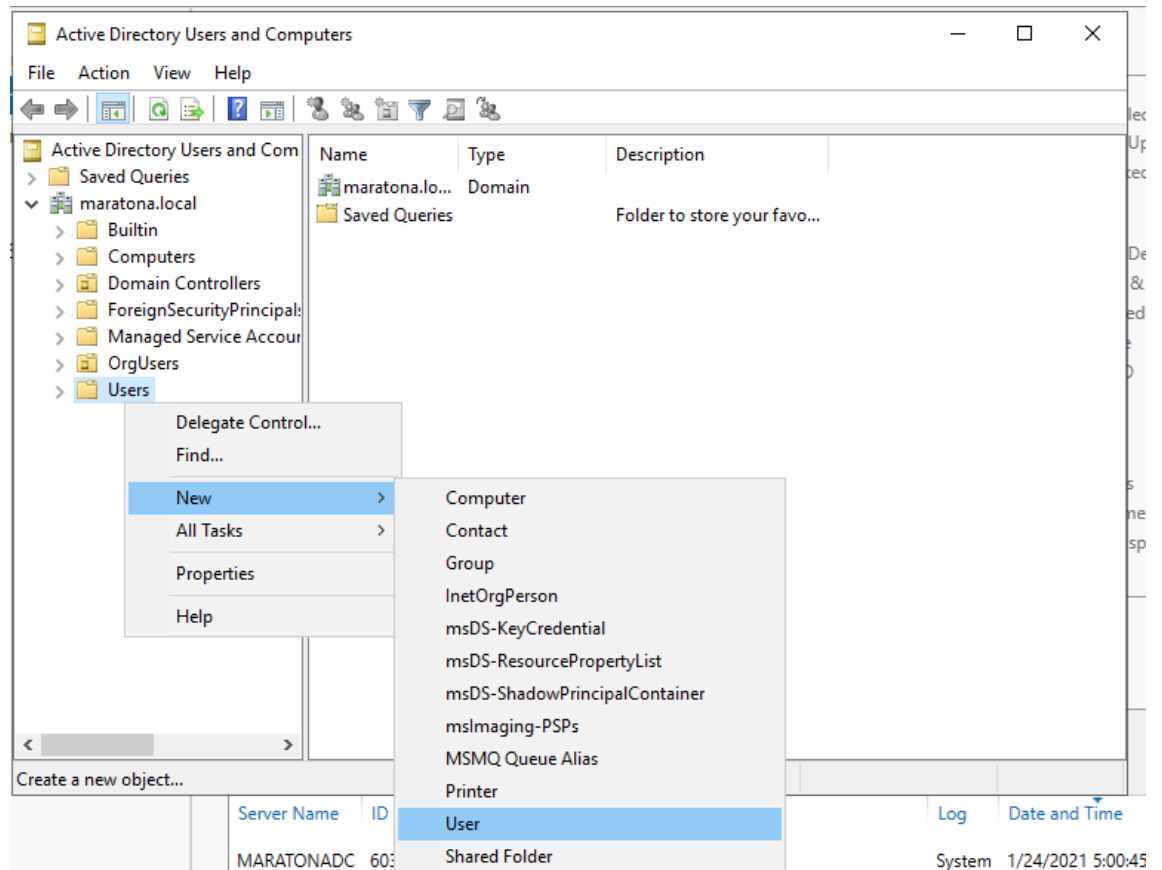
Task 3: Creating a domain admin account

By default, Azure AD Connect does not synchronize the built-in domain administrator account ADAdmin@MyDomain.com. This system account has the attribute `isCriticalSystemObject` set to `true`, preventing it from being synchronized. While it is possible to modify this, it is not a best practice to do so.

1. In Server Manager, Select **Tools** in the upper right corner and select **Active Directory Users and Computers**.



2. In Active Directory Users and Computers, expand your domain **workshop.local**, right-click the **Users** organization unit and select **New > User** from the menu.



- Complete the New User wizard.
 First name: **wvd**
 Last name: **admin**
 User login name: **wvdadmin**

New Object - User

Create in: maratona.local/Users

First name: Initials:

Last name:

Full name:

User login name: @ maratona.local

User login name (pre-Windows 2000):

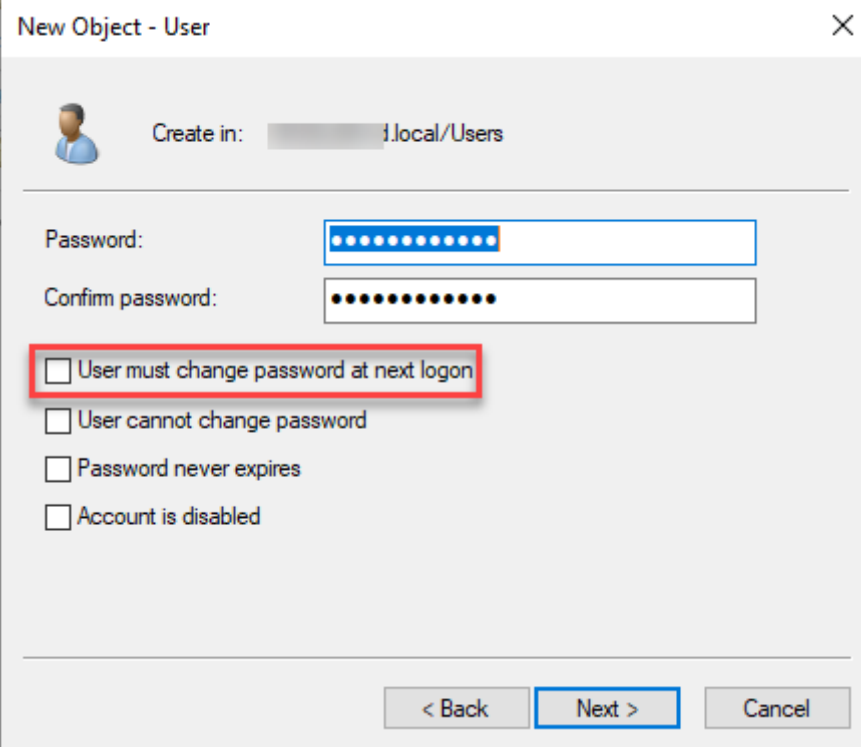
< Back Next > Cancel

Password: **Pa\$\$w0rd!1234**

Confirm password: **Pa\$\$w0rd!1234**

Uncheck "User must change password at next logon"

Click **Next**



New Object - User

Create in: .local/Users

Password: [dots]

Confirm password: [dots]

☒ User must change password at next logon

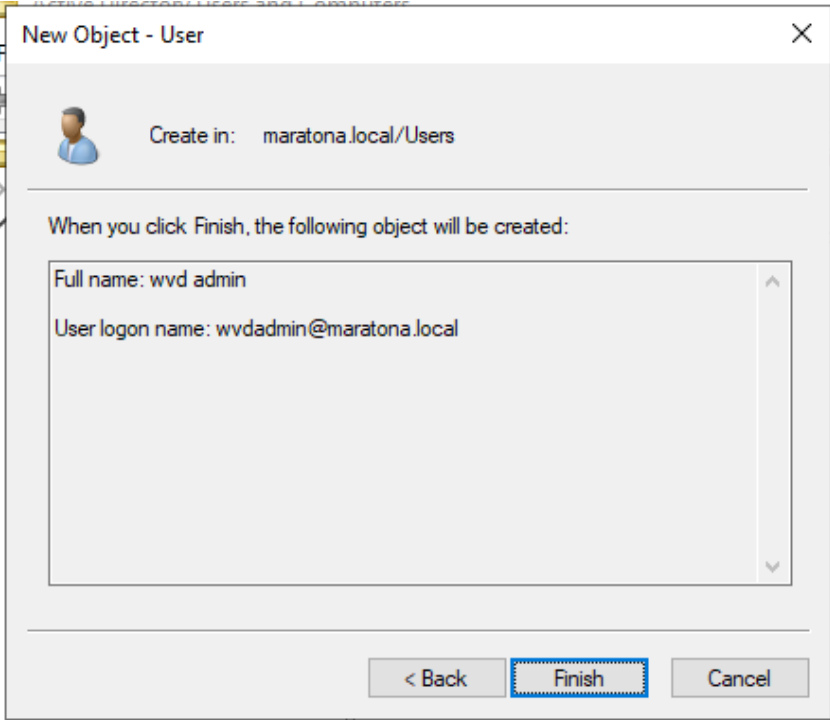
☐ User cannot change password

☐ Password never expires

☐ Account is disabled

< Back Next > Cancel

Click **Finish**



New Object - User

Create in: maratona.local/Users

When you click Finish, the following object will be created:

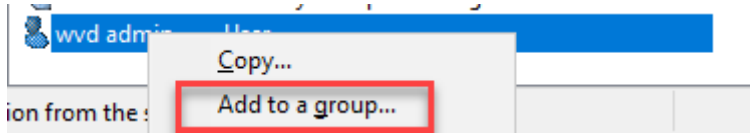
Full name: wvd admin

User logon name: wvdadmin@maratona.local

< Back Finish Cancel

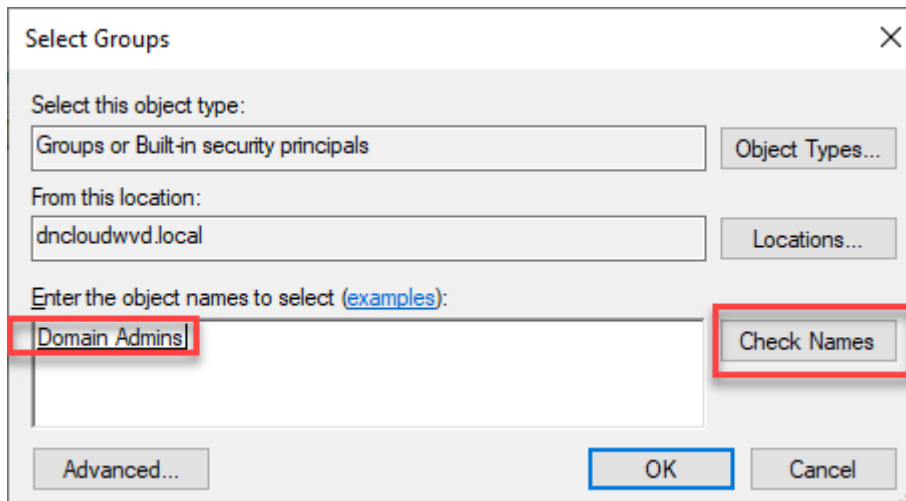
Note: This account will be important in future tasks. Make a note of the username and password you create.

4. In Active Directory Users and Computers, select **Users** folder, right-click on the "wvd admin" account object and select **Add to a group**.



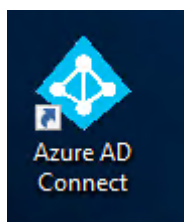
5. On the Select Groups dialog window, type **Domain Admins** and Select **OK**.

Note: This account will be used during the host pool creation process for joining the hosts to the domain. Granting Domain Admin permissions will simplify the lab. However, any Active Directory account that has the following permissions will suffice. This can be done using [Active Directory Delegate Control](#).

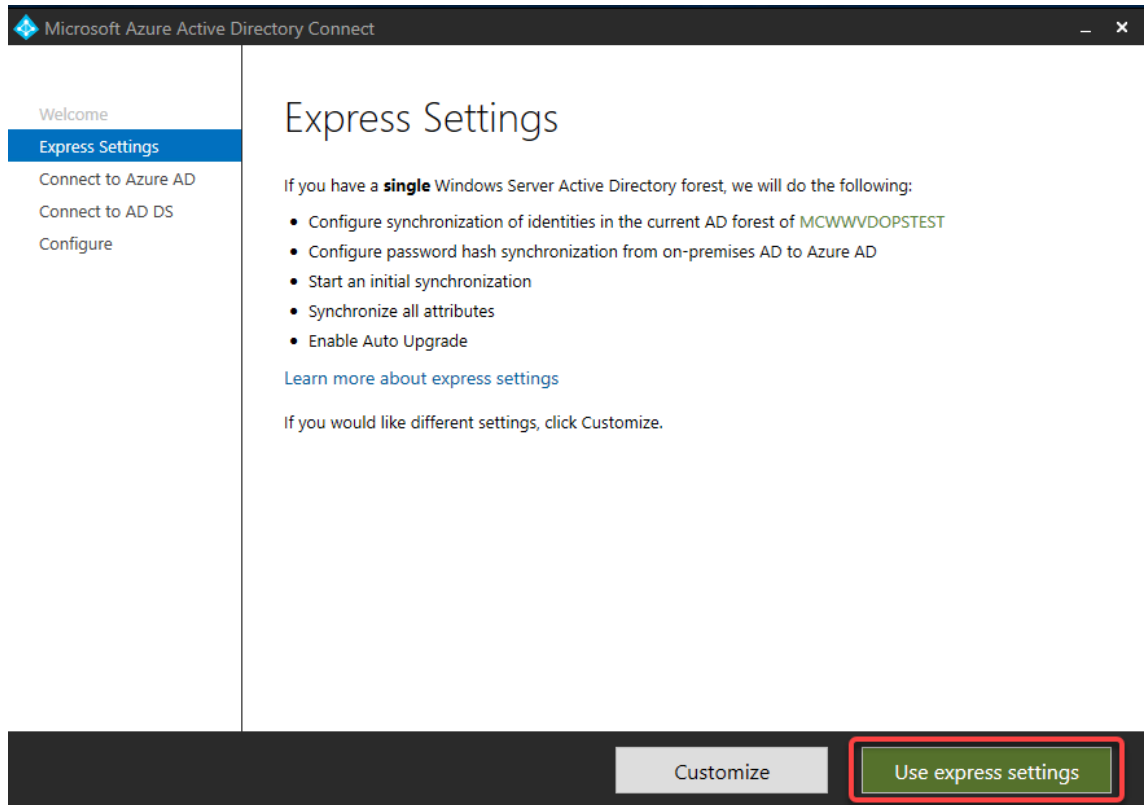


Task 4: Configuring Azure AD Connect

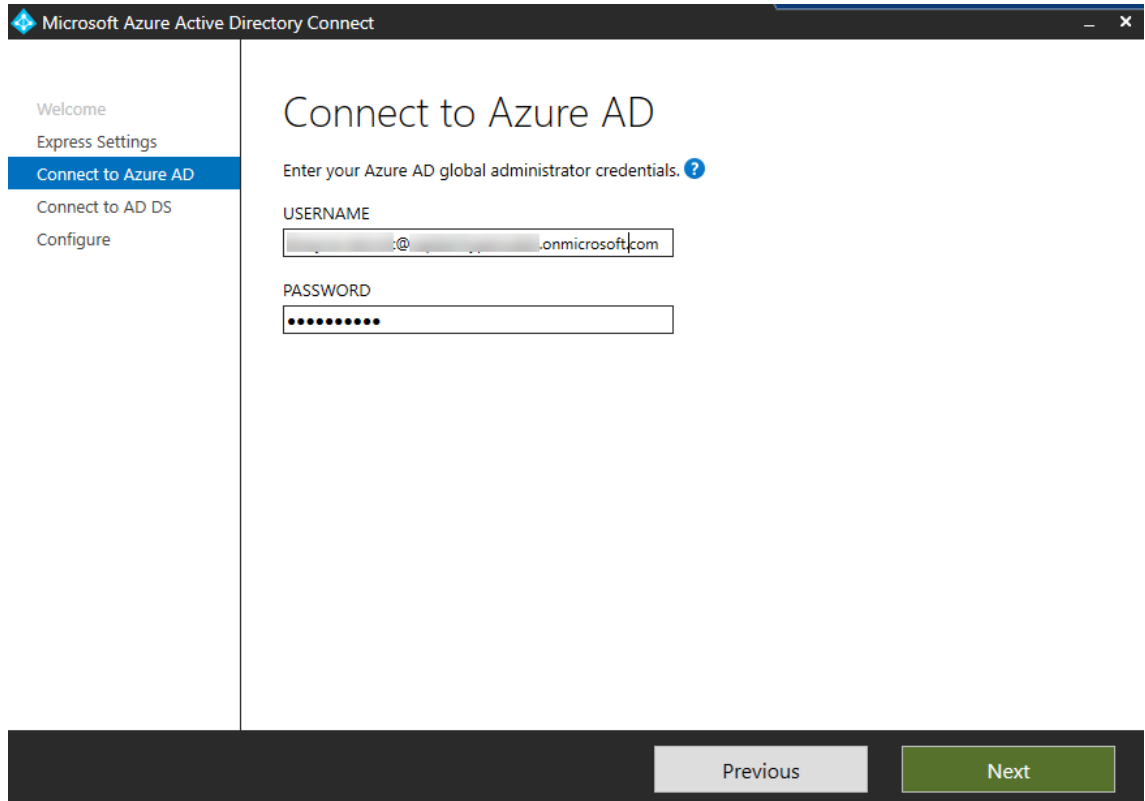
1. On the desktop of the domain controller, locate the icon for **Azure AD Connect** and open it.



2. **Accept** the license terms and privacy notice, then select **continue**. On the next screen select **Use express settings**. The required components will install.



3. On the **Connect to Azure AD** page, enter in the Azure AD Global Admin credentials created early. For example: **azadmin@youroutlook.onmicrosoft.com** and the password: **Profissao#C10UD** Select **Next**.



Microsoft Azure Active Directory Connect

Welcome
Express Settings
Connect to Azure AD
Connect to AD DS
Configure

Connect to Azure AD

Enter your Azure AD global administrator credentials. ?

USERNAME
onmicrosoft.com

PASSWORD
.....

Previous Next

Note: This is the account associated with your Azure subscription.

4. On the **Connect to AD DS** page, enter in the Active Directory credentials for a Domain Admin account. **workshop.local\adadmin** with the password: **AdminPa\$\$w0rd!1234** Select **Next**.

Microsoft Azure Active Directory Connect

Welcome
Express Settings
Connect to Azure AD
Connect to AD DS
Configure

Connect to AD DS

Enter the Active Directory Domain Services enterprise administrator credentials: ?

USERNAME
[.]LOCALVADAdmin

PASSWORD
[REDACTED]

Previous Next

Note: If you copy and paste the password, please ensure that there are no trailing spaces, as that will cause the verification to fail.

5. If needed, check "Continue without matching all UPN verified domains" and click **Next**

Microsoft Azure Active Directory Connect

Welcome
Express Settings
Connect to Azure AD
Connect to AD DS
Azure AD sign-in
Configure

Azure AD sign-in configuration

To use on-premises credentials for Azure AD sign-in, UPN suffixes should match one of the verified custom domains in Azure AD. The following table lists the UPN suffixes defined in your on-premises environment, along with the matching custom domain in Azure. ?

Active Directory UPN Suffix	Azure AD Domain
d.local	Not Added ?
wvd	Not Added ?

☒ Continue without matching all UPN suffixes to verified domains

Users will not be able to sign-in to Azure AD with on-premises credentials if the UPN suffix does not match a verified domain. [Learn more](#)

Previous Next

6. Select **Install** to start the configuration and synchronization.

Microsoft Azure Active Directory Connect

Welcome
Express Settings
Connect to Azure AD
Connect to AD DS
Azure AD sign-in
Configure

Ready to configure

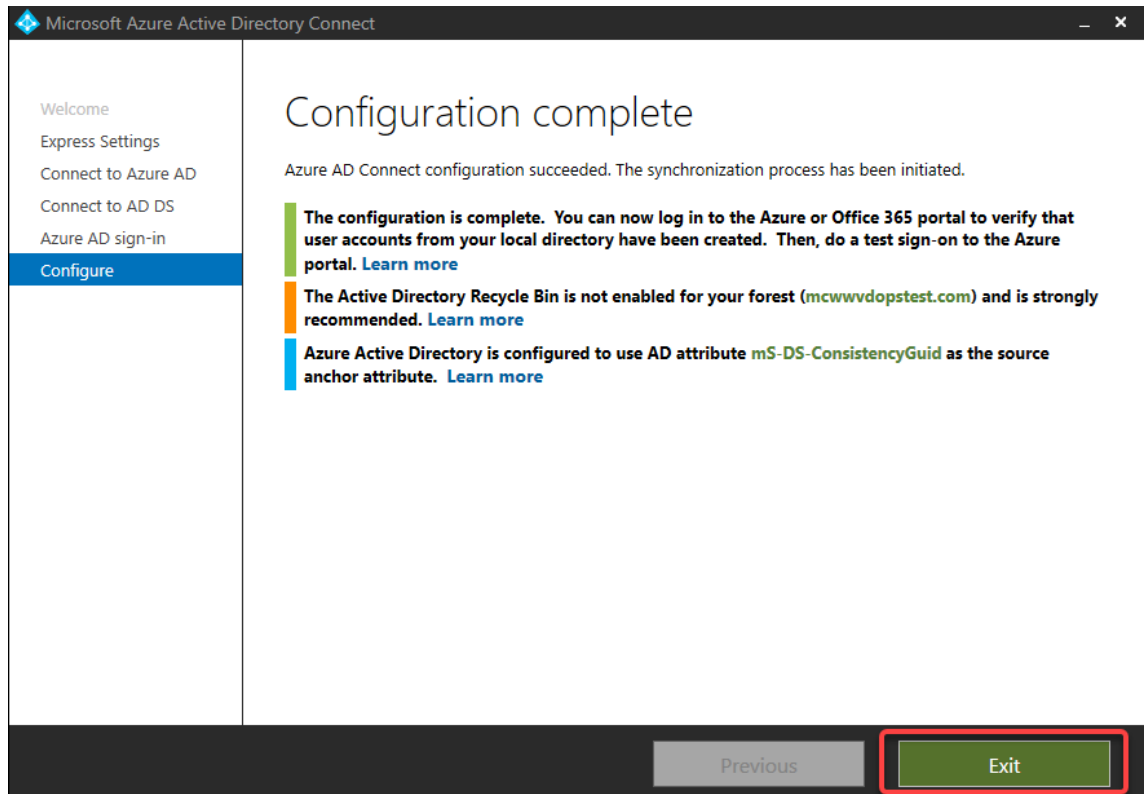
Once you click Install, we will do the following:

- Install the synchronization engine
- Configure Azure AD Connector
- Configure dncloudwvd.local Connector
- Enable Password hash synchronization
- Enable Auto Upgrade
- Configure synchronization services on this computer

☒ Start the synchronization process when configuration completes.

Previous Install

7. After a few minutes the Azure AD Connect installation will complete.
Select **Exit**.



8. Minimize the RDP session for the domain controller and wait a few minutes for the AD accounts to be synchronized to Azure AD.
9. Sign in to the [Azure Portal](#) with your first Azure Admin account (outlook.com) and click ignore 14 days if needed.
10. Type **Azure Active Directory** in the search field and select it from the list.
11. On the Azure Active Directory blade, under **Manage**, select **Users**.
12. Review the list of user account objects and confirm the test accounts have synchronized.

	Name	User principal name	User type	Directory synced
<input type="checkbox"/>	BS Bill Smith	Bill.Smith@az103dncloud.onmicrosoft.com	Member	Yes
<input type="checkbox"/>	BJ Bob Jones	Bob.Jones@az103dncloud.onmicrosoft.com	Member	Yes
<input type="checkbox"/>	DN [REDACTED]	[REDACTED]	[REDACTED]	Yes
<input type="checkbox"/>	DN [REDACTED]	[REDACTED]	[REDACTED]	No
<input type="checkbox"/>	DN [REDACTED]	[REDACTED]	[REDACTED]	No
<input type="checkbox"/>	JP Jack Petersen	Jack.Petersen@az103dncloud.onmicrosoft.com	Member	Yes
<input type="checkbox"/>	JW Julia Williams	Julia.Williams@az103dncloud.onmicrosoft.com	Member	Yes
<input type="checkbox"/>	MP Mary Phillips	Mary.Phillips@az103dncloud.onmicrosoft.com	Member	Yes
<input type="checkbox"/>	OO On-Premises Directory Synchronization Servi...	Sync_CORPDC_d6989e5056f4@az103dncloud.onmi...	Member	Yes
<input type="checkbox"/>	SJ Sue Jackson	Sue.Jackson@az103dncloud.onmicrosoft.com	Member	Yes

Note: It can take up to 15 minutes for the Active Directory objects to be synchronized to the Azure AD tenant.

3.3 Create Azure AD groups for WVD

Duration: 30 minutes

In this exercise you will be working with groups in Azure Active Directory (Azure AD) to assist in managing access assignment to your application groups in WVD. The new ARM portal for WVD supports access assignment using Azure AD groups. This capability greatly simplifies access management. Groups will also be leveraged in this guide to manage share permissions in Azure Files for FSLogix.

You will be creating three Azure AD groups to manage access to the different application groups; **Personal**, **Pooled**, and **RemoteApp**. For this guide we will only create a single group for RemoteApps, but in a production scenario it is more common to use separate groups based on the app or persona defined by the customer. Be sure to make note of the groups you create, as they will be used in later exercises.

It is also important to keep in mind that these groups can also originate from the Windows Active Directory environment and synchronize via Azure AD Connect. This will be another common scenario for customers that already have processes defined on-premises for group management.

Additional Resources

Description	Links
Create a basic group and add members in Azure AD	https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-groups-create-azure-portal
Azure AD Connect sync	https://docs.microsoft.com/en-us/azure/active-directory/hybrid/concept-azure-ad-connect-sync-user-and-contacts

Task 1: Creating Azure AD groups

1. Sign in to the [Azure Portal](#).
2. At the top of the page, in the **Search resources** field, type **Azure Active Directory**. Select **Azure Active Directory** from the list.
3. On the Azure Active Directory page, select **Groups** on the left and select **+ New group**.
4. On the New Group page, fill in the following options and Select **Create**.
 - **Group type:** Security
 - **Group name:** WVD Pooled Desktop User
 - **Membership type:** Assigned

New Group

Group type *
Security

Group name * ⓘ
WVD Pooled Desktop User

Group description ⓘ
Enter a description for the group

Membership type * ⓘ
Assigned

Owners
No owners selected

Members
No members selected

5. Select **+ New group** again, fill in the following options and Select **Create**.
 - **Group type:** Security
 - **Group name:** WVD Remote App All Users
 - **Membership type:** Assigned

New Group

Group type *

Security

Group name * ⓘ

WVD Remote App All Users

Group description ⓘ

Enter a description for the group

Membership type * ⓘ

Assigned

Owners

No owners selected

Members

No members selected

6. Select + **New group** again, fill in the following options and Select **Create**.

- **Group type:** Security
- **Group name:** WVD Persistent Desktop User
- **Membership type:** Assigned

New Group

Group type *

Security

Group name * ⓘ

WVD Persistent Desktop User

Group description ⓘ

Enter a description for the group

Membership type * ⓘ

Assigned

Owners

No owners selected




Members

No members selected

- Confirm that the groups have been added by going to **Azure Active Directory**, selecting **Groups**. Scroll down to the bottom of the list of groups and the three groups that you created should be listed.

Groups | All groups

AZ-103 - Azure Active Directory

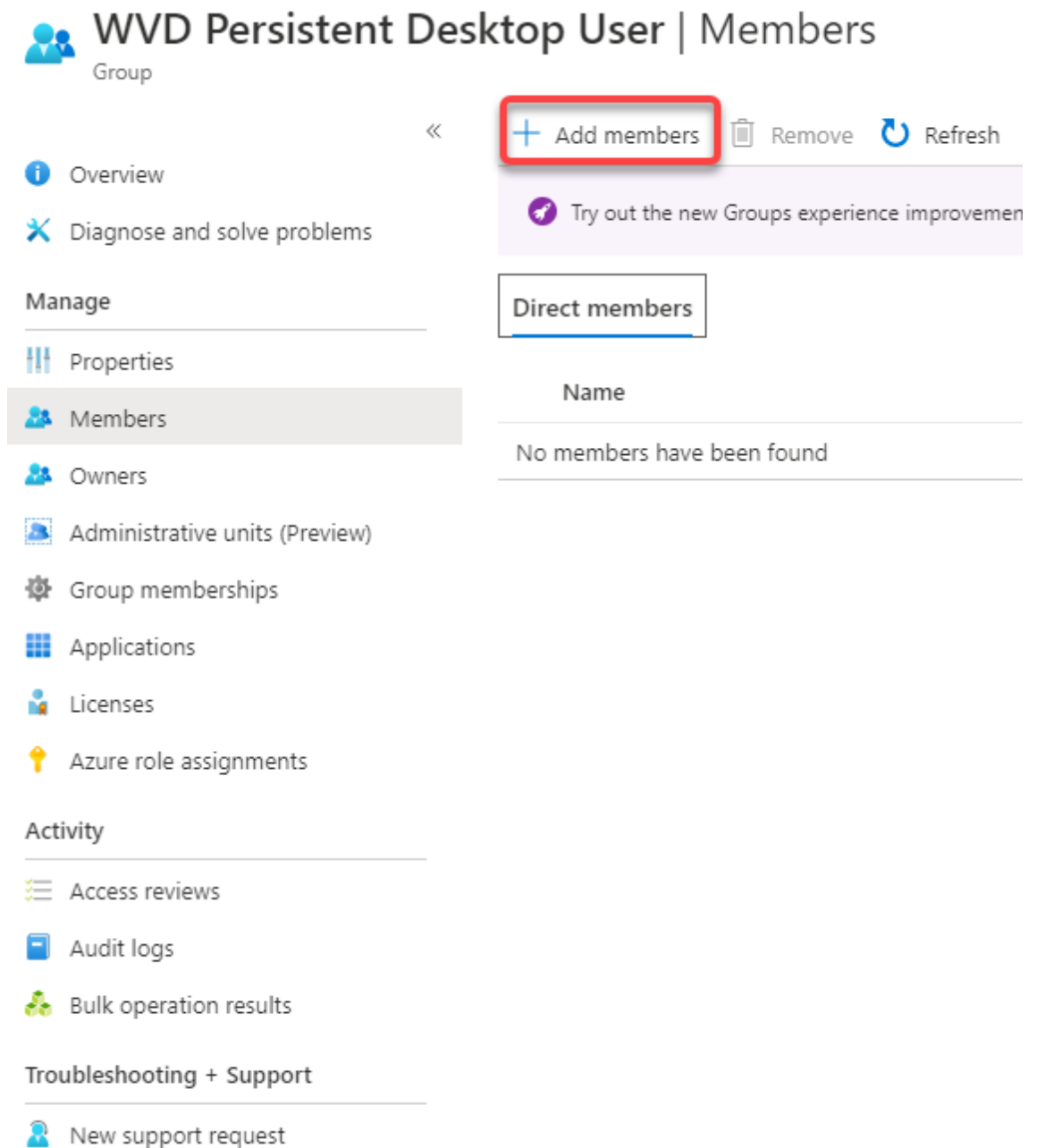
<input type="checkbox"/>		WVD Persistent Desktop User	c22431c5-4822-4d38-b056-06888f11dbd5	Security	Assigned	Cloud
<input type="checkbox"/>		WVD Pooled Desktop User	719c9e90-8f76-4e22-a355-227248fd2041	Security	Assigned	Cloud
<input type="checkbox"/>		WVD Remote App All Users	c16caac3-03f9-4798-b058-39d53bbe87d2	Security	Assigned	Cloud

Task 2: Assign users to groups

Now that the Azure AD groups are in place, we will assign users for testing. Once the groups are populated, we can leverage them for assigning access to WVD resources once they are created.

- Sign in to the [Azure Portal](#).
- At the top of the page, in the **Search resources** field, type **Azure Active Directory**. Select **Azure Active Directory** from the list.
- On the **Azure Active Directory** page, select **Groups** on the left and select the **WVD Persistent Desktop User** group.

4. Select **Members** and **+ Add Members**



WVD Persistent Desktop User | Members
Group

Overview
Diagnose and solve problems

Manage

- Properties
- Members**
- Owners
- Administrative units (Preview)
- Group memberships
- Applications
- Licenses
- Azure role assignments

Activity

- Access reviews
- Audit logs
- Bulk operation results

Troubleshooting + Support

- New support request

« **+ Add members** Remove Refresh

Try out the new Groups experience improvement

Direct members

Name

No members have been found

- In the search field, enter the name of user **Bill Smith** and **Bob Jones** to add **Select** to add them to the group.
- Repeat steps 4-6 for the **WVD Pooled Desktop User** and **WVD Remote App All Users** groups.







At this point you have three new Azure AD groups with members assigned. Make a note of the group names and accounts you added for

use later in this guide. These groups will be used to assign access to WVD application groups.







Add members



Search ⓘ

-  ADSyncAdmins
-  ADSyncAdmins
-  ADSyncBrowse
-  ADSyncBrowse
-  ADSyncOperators
-  ADSyncOperators

Selected items

- | | | |
|---|---|-------------------------|
|  | Bill Smith
Bill.Smith1359@ad-onmicrosoft.com | <button>Remove</button> |
|  | Bob Jones
Bob.Jones2318@ad-onmicrosoft.com | <button>Remove</button> |
|  | Jack Petersen
Jack.Petersen4134@ad-onmicrosoft.com | <button>Remove</button> |
|  | Julia Williams
Julia.Williams1812@ad-onmicrosoft.com | <button>Remove</button> |
|  | Mary Phillips
Mary.Phillips5372@ad-onmicrosoft.com | <button>Remove</button> |
|  | wvd admin
wvdadmin@ad-onmicrosoft.com | <button>Remove</button> |

Select

3.4 Create a master image for WVD (Optional)

Duration: 90 minutes

In this exercise we are going to walk through the process of creating a master image for your WVD host pools. The basic concept for a master image is to start with a clean base install of Windows and layer on mandatory updates, applications and configurations. There are many ways to create and manage images for WVD. The steps covered in this exercise are going to walk you through a basic build and capture process that includes core applications and recommended configuration options for WVD.

Additional Resources

Description	Links
Create a managed image of a generalized VM in Azure	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/capture-image-resource
For more information on how to deploy a virtual machine in Azure	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-portal
For more information on how to setup a Bastion host in Azure	https://docs.microsoft.com/en-us/azure/bastion/bastion-create-host-portal

Task 1: Create a new Virtual Machine (VM) in Azure

1. Sign in to the [Azure Portal](#).
2. On the Azure portal home page, Select **Create a resource**.
3. On the New page, search for **Microsoft Windows 10**. Select **Windows 10 Enterprise multi-session, Version 20H2** and Select **Create**.

Microsoft Windows 10

Microsoft



Microsoft Windows 10 [Save for later](#)

Microsoft

Select a software plan

Windows 10 Enterprise multi-session,...

Create

Start with a pre-set configuration

Overview

Plans

This software is provided by Microsoft. Use of this software in Microsoft Azure is not permitted except under a volume licensing agreement with Microsoft. By clicking Create, I acknowledge that I or the company I work for is licensed to use this software under a volume licensing agreement with Microsoft and that the right to use it will be subject to that agreement.

Learn more

[What's new for Business in the Windows 10 May 2019 Update](#)

[What's new for IT pros in the Windows 10 May 2019 Update](#)

Note: In this exercise we are selecting a base Windows 10 image to start with, and installing Office 365 ProPlus using a custom deployment script. We are also using the latest available release of Windows 10 Enterprise multi-session, but you can choose the version based on your requirements.

4. On the Create a virtual machine page, fill in the required fields:
 Resource Group: **wvd-rg1**
 Virtual machine name: **wvdwin10**
 Region: **East US**
 Username: **ADAdmin**
 Password: **Pa\$\$w0rd!1234**
 Licensing: **Check "I confirm I have an eligible Windows 10 license with multi-tenant hosting rights."**

Create a virtual machine

for full customization. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *

[Create new](#)

Instance details

Virtual machine name *

Region *

Availability options

Image *

[Browse all public and private images](#)

Azure Spot instance ☐ Yes ☒ No

Size *

[Select size](#)

Administrator account

Username *

Password *

Confirm password *

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * ☐ None ☒ Allow selected ports

Select inbound ports *

⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

[Review + create](#)

< Previous

Next : Disks >

Click Review + create.

Note: This guide does not walk through the process of creating a VM in Azure. However, for **Inbound port rules**, be sure to allow **RDP (3389)**, or have a bastion host deployed for remote access.

- Once the VM is successfully deployed, go to the resource, and connect using RDP. Sign in using the credentials you supplied when creating the VM.

wvdwin10
Virtual machine

Search (Ctrl+J) [Connect](#) Start Restart Stop Capture Delete Refresh Share to mobile

Overview

Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings

Essentials

Resource group (change) : dncloudwvd-rg1
Status : Running
Location : East US
Subscription (change) : MSDN Platforms
Subscription ID : d0f29ed1-e0eb-4672-8012-30cac6c4d6ea
Tags (change) : [Click here to add tags](#)

Operating system : Windows (Windows 10 Enterprise)
Size : Standard B2ms (2 vcpus, 8 GiB memory)
Public IP address : 23.101.130.106
Virtual network/subnet : dncloudwvd1-vnet/adSubnet1
DNS name : [Configure](#)

6. Download the RDP file and open the RDP file to connect.

RDP SSH BASTION

Connect with RDP

To connect to your virtual machine via RDP, select an IP address, optionally change the port number, and download the RDP file.

IP address *

Public IP address (23.101.130.106)

Port number *

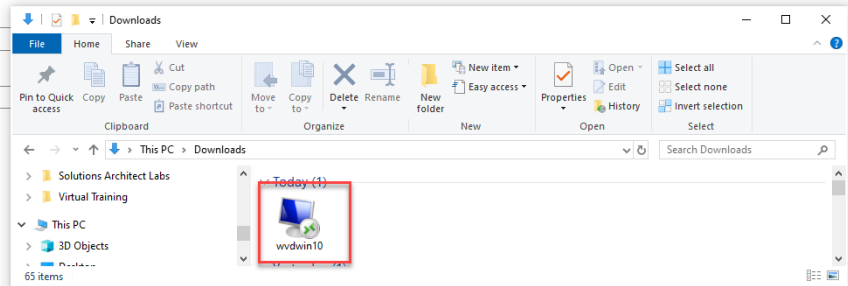
3389

Download RDP File

Can't connect?

[Test your connection](#)

[Troubleshoot RDP connectivity issues](#)



User: **.\ADAdmin**

Password: **Pa\$\$w0rd!1234**

Task 2: Run Windows Update

Despite the Azure support teams best efforts, the Marketplace images are not always up to date. The best and most secure practice is to keep your master image up to date.

1. From your master image VM, open the **Settings** app and select **Updates & Security**.

Settings

Windows Settings

Find a setting



System

Display, sound, notifications, power



Devices

Bluetooth, printers, mouse



Network & Internet

Wi-Fi, airplane mode, VPN



Personalization

Background, lock screen, colors



Apps

Uninstall, defaults, optional features



Accounts

Your accounts, email, sync, work, other people



Time & Language

Speech, region, date



Ease of Access

Narrator, magnifier, high contrast



Search

Find my files, permissions



Cortana

Cortana language, permissions, notifications



Privacy

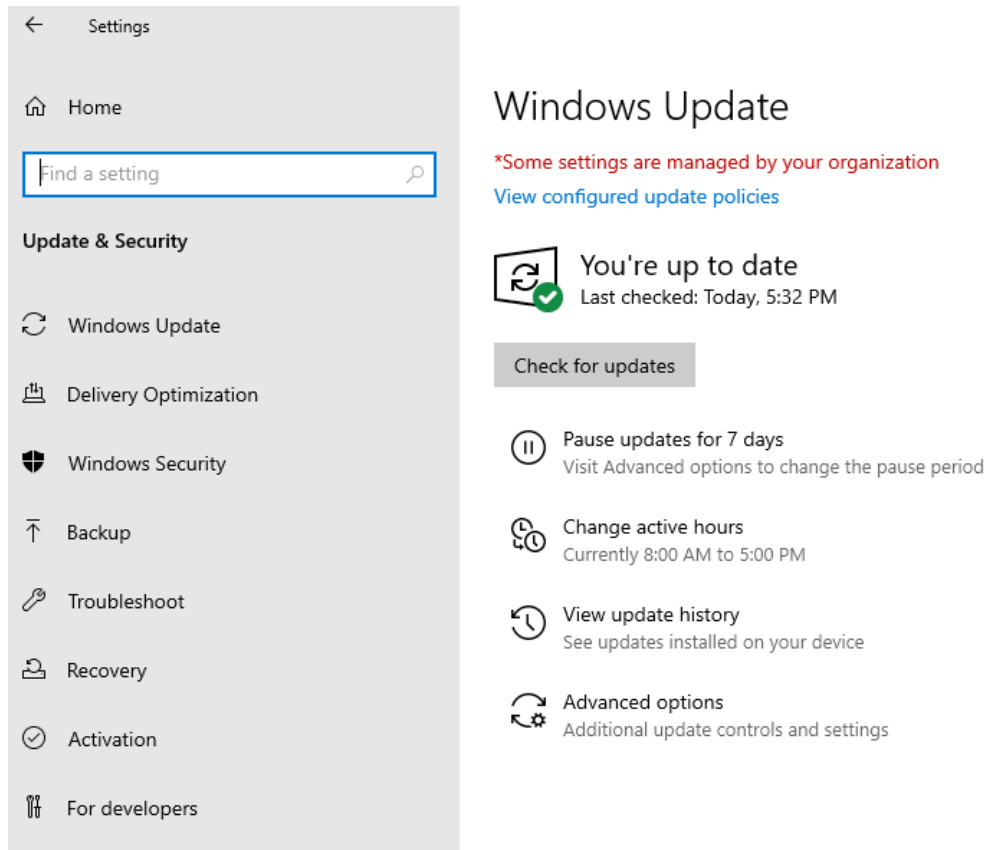
Location, camera, microphone



Update & Security

Windows Update, recovery, backup

2. Install all missing updates, rebooting as necessary.
3. Once the VM is fully patched, the Windows Update Settings page should resemble the following screenshot.



Task 3: Prepare WVD image

Introduction to the script

The authors for this content have developed a scripted solution to assist in automating some common baseline image build tasks. The script includes a UI form, enabling you to quickly select which actions to perform. The end result will be a custom master image that incorporates Microsoft's main business applications, along with the necessary policies and settings for an optimized user experience.

The script and related tools are maintained in GitHub - [Download Link](#)

<https://minhaskamal.github.io/DownGit/#/home?url=https://github.com/shawntmeyer/WVD/tree/master/Image-Build/Customizations>

For additional documentation about the script (e.g. parameters, functions, etc.), refer to the comments in **Prepare-WVDImage.ps1**.

For troubleshooting script execution, refer to the following log directory on the target machine: **C:\Windows\Logs\ImagePrep**.

This script leverages the Local Group Policy Object (LGPO) tool in the Microsoft Security Compliance Toolkit (SCT) to apply settings in the image. The settings are documented and exported on the target machine under **C:\Windows\Logs\ImagePrep\LGPO**. This approach was taken to simplify troubleshooting, enabling you to leverage Group Policy Results.

The UI form offers the following actions:

Office 365 ProPlus

- Install the **latest** version of Office 365 ProPlus monthly channel.
- Apply recommended settings.
- Source documentation: Install Office on a master VHD image.

OneDrive for Business

- Install the **latest** version of OneDrive for Business *per-machine*.
- Source documentation: Install Office on a master VHD image.

Microsoft Teams

- Install the **latest** version of Microsoft Teams *per-machine*.
- Source documentation: Use Microsoft Teams on Windows Virtual desktop.

Microsoft Edge Chromium

- Install the **latest** version of Microsoft Edge Enterprise.
- Apply recommended settings.
- Source documentation: Deploy Microsoft Edge using System Center Configuration Manager.

FSLogix Profile Containers

- Install the **latest** version of the FSLogix Agent.
- Apply recommended settings.
- Source documentation: Download and Install FSLogix.

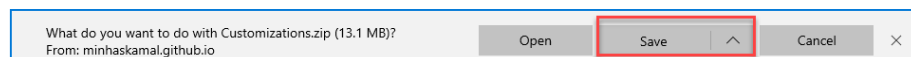
OS Settings

- Apply the recommended WVD settings for image capture.
- Source documentation: [Prepare and customize a master VHD image.](#)
- Apply the recommended settings for capturing an Azure VM.
- Source documentation: [Prepare a Windows VHD or VHDX to upload to Azure.](#)
- Run Disk Cleanup.
- Source documentation: [cleanmgr.](#)

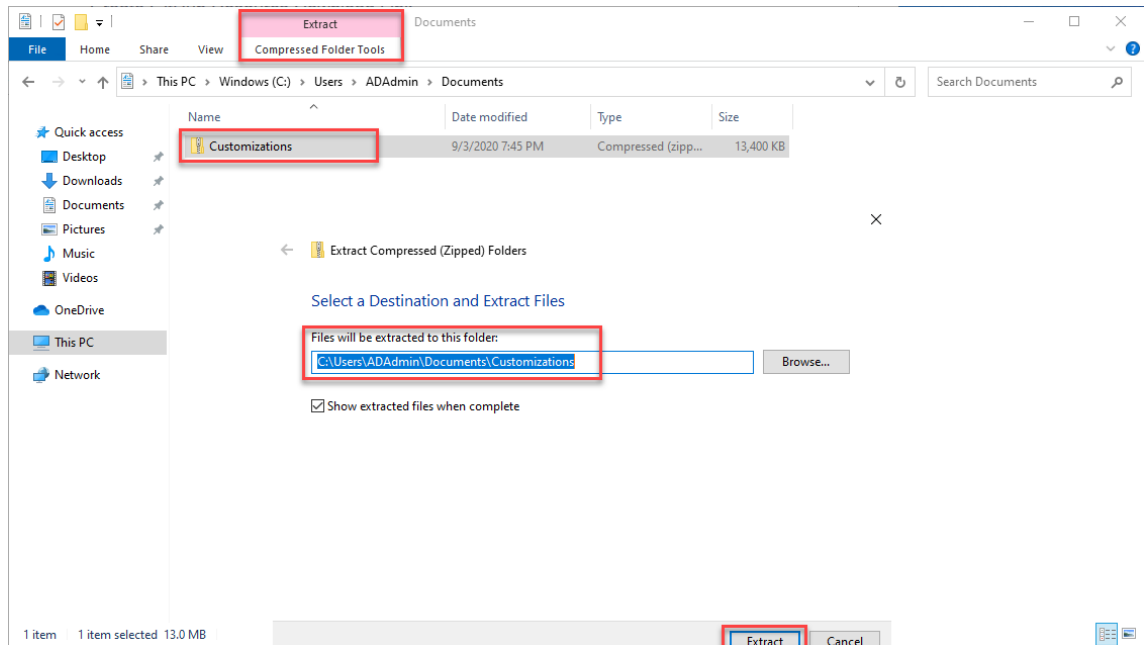
Running the script

1. Log on RDP Windows 10 Virtual Machine
2. **Download** the .zip file to your local workstation.

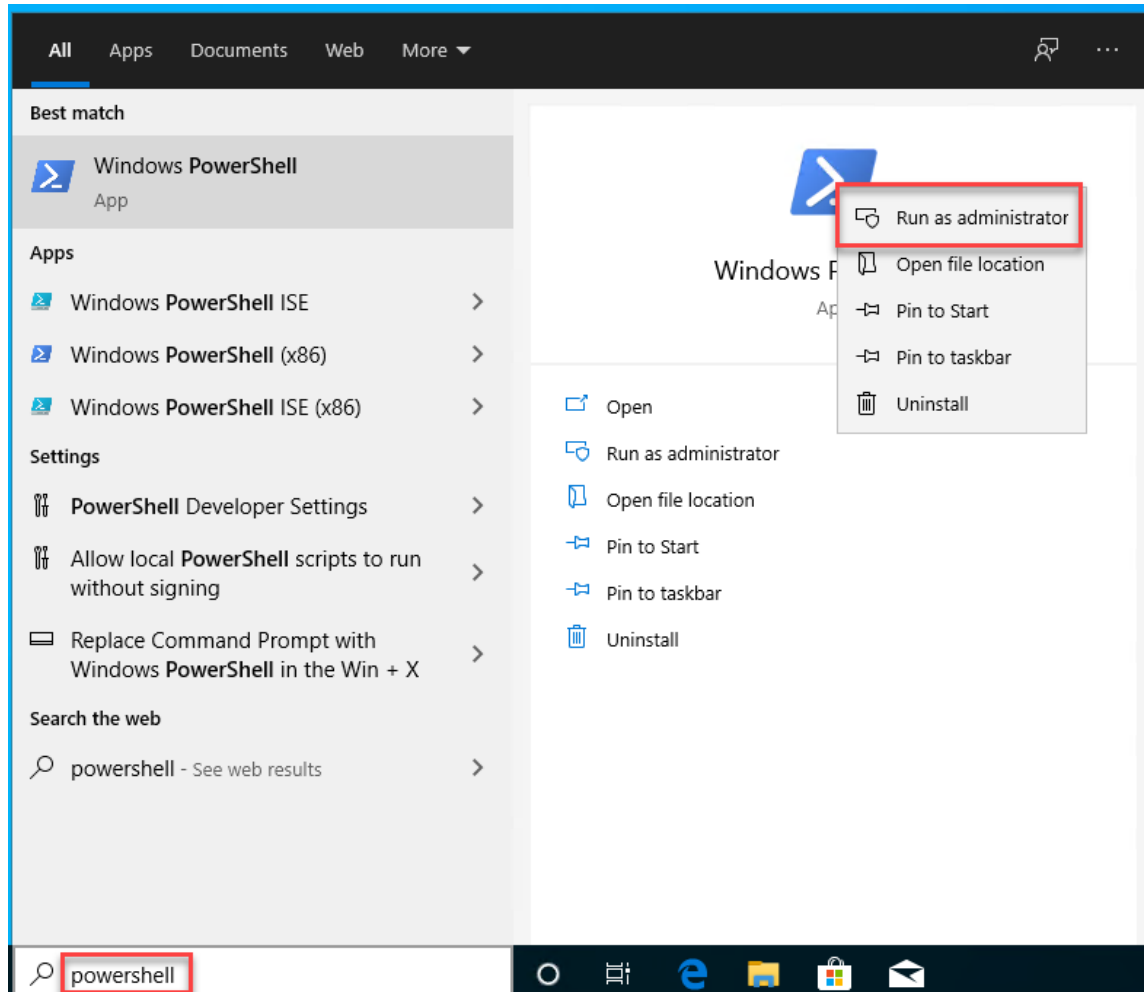
<https://minhaskamal.github.io/DownGit/#/home?url=https://github.com/shawntmeyer/WVD/tree/master/Image-Build/Customizations>



3. **Save** the .zip file on your local workstation. Open the RDP window to your master image VM. **Save as** the .zip file to the documents folder.
4. On the master image VM, right-click on the .zip file on your desktop and select **Extract All...**



5. Extract the files to **C:\Documents**.
6. Open an elevated PowerShell window by searching for PowerShell on the Windows 10 VM. Right-click and run as administrator.



7. Navigate to "C:\Users\(\loginaccount)\Documents\Prepare-WVDImage".

```
cd C:\Users\(\LoginAccount)\Documents\Prepare-WVDImage
```

8. Run the following command to allow for script execution:

```
Set-ExecutionPolicy -ExecutionPolicy Bypass -Scope Process -Force
```

9. Execute the script by running the following command:

```
.\Prepare-WVDImage.ps1 -DisplayForm
```

```
PS C:\Users\ADAdmin\Documents\Prepare-WVDImage> Set-ExecutionPolicy -ExecutionPolicy Bypass -Scope Process -Force
PS C:\Users\ADAdmin\Documents\Prepare-WVDImage> .\Prepare-WVDImage.ps1 -DisplayForm
```

This will trigger the PowerShell form to launch. Select the appropriate options based on the following input information.

WVD Image Preparation

WVD Golden Image Preparation

☐ **Install Office 365 ProPlus**

Cache email for: Cal Sync Type: Cal Sync Months:

☐ **Install FSLogix Agent**

FSLogix VHD Location:

☐ **Install OneDrive per Machine**

AAD Tenant ID (Configures KFM):

☐ **Install Microsoft Teams per Machine**

☐ **Install Microsoft Edge Chromium v80+**

☐ **Disable All Software Updates**

☐ **Remove inbox Windows 10 Apps**

☐ **Run System Clean Up (CleanMgr.exe)**

Execute

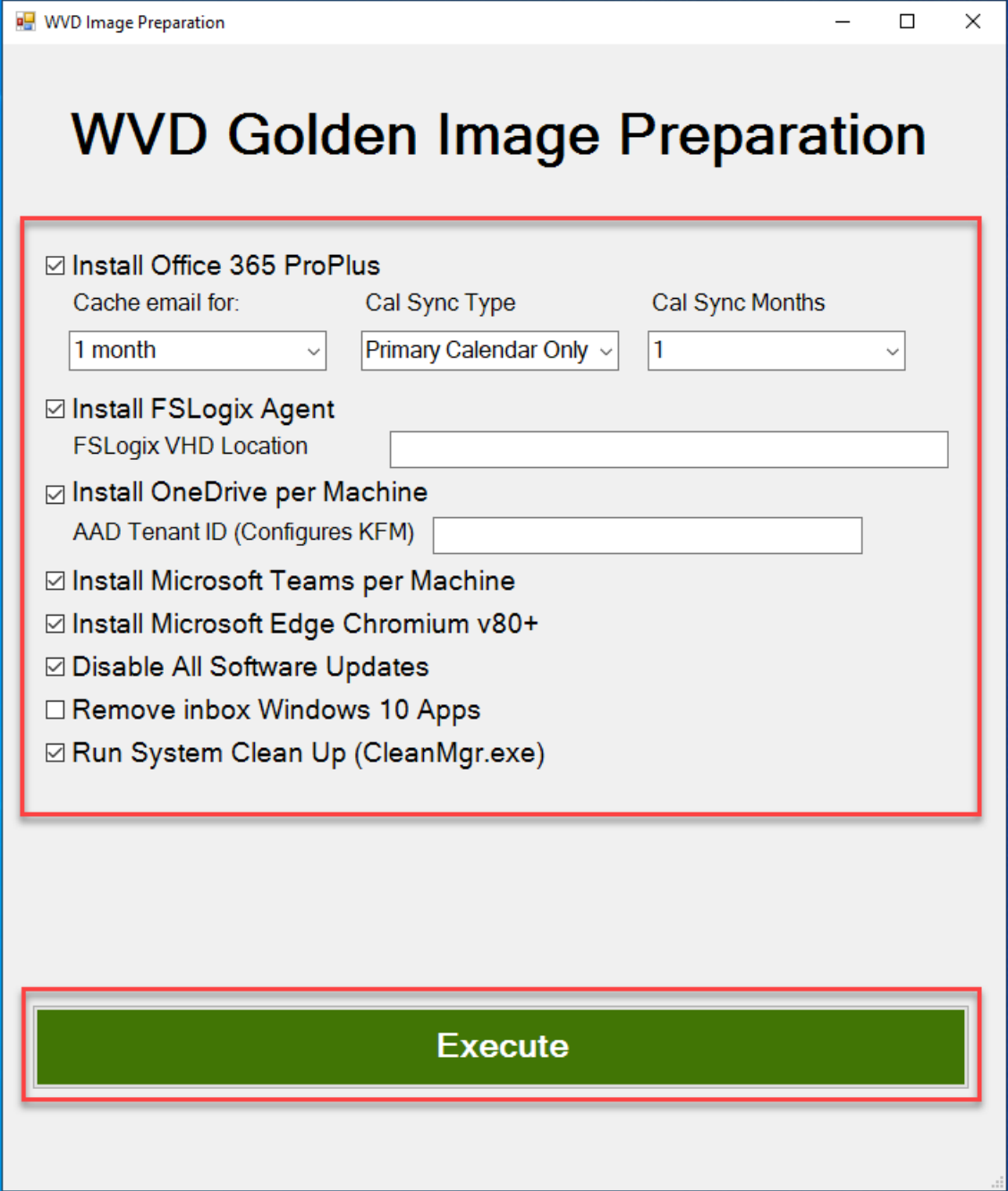
- Select **Install Office 365** to Install Office 365 ProPlus while excluding Teams, Groove and Skype. This will enable the Email and Calendar Caching settings below.

Note: Update these settings as necessary. The Microsoft recommended settings are pre-selected. If you do not wish to apply these settings to the image, then set each to 'Not Configured'.

- Select **Install FSLogix Agent** to install the FSLogix Agent. If you select this option, the option to specify the FSLogix User Profile Container VHD

Path is enabled. If you do not want to specify the location option in the image, **blank out this field setting**.

- Select **Install OneDrive per Machine** to install the OneDrive sync client per machine. If you select this option, it will enable the AAD Tenant ID field. Enter your tenant id here to enable silent Known Folder Move functionality in your image. If you do not want this in your image, **blank out the value**.
- Select **Install Microsoft Teams per Machine** to install the per machine Teams install.
- Select **Install Microsoft Edge Enterprise** to install the Microsoft Edge Enterprise browser based on Chromium.
- Select **Disable All Software Update** to disable Windows Update in the image.
- Select **Run System Clean Up (CleanMgr.exe)** to execute Disk Cleanup.



WVD Golden Image Preparation

- ☒ **Install Office 365 ProPlus**
 - Cache email for:
 - Cal Sync Type:
 - Cal Sync Months:
- ☒ **Install FSLogix Agent**
 - FSLogix VHD Location:
- ☒ **Install OneDrive per Machine**
 - AAD Tenant ID (Configures KFM):
- ☒ **Install Microsoft Teams per Machine**
- ☒ **Install Microsoft Edge Chromium v80+**
- ☒ **Disable All Software Updates**
- ☐ **Remove inbox Windows 10 Apps**
- ☒ **Run System Clean Up (CleanMgr.exe)**

Execute

9. With the desired options selected, Select **Execute**.

The form will close at this point and the script will begin configuring the image. **DO NOT close any of the remaining windows that appear until the script has finished execution.** Doing so will interrupt the process and will require you to start over.

The script will take several minutes to complete depending on the options you selected. Additional input from you is not required during this stage, so feel free to minimize the RDP session and work on other tasks.

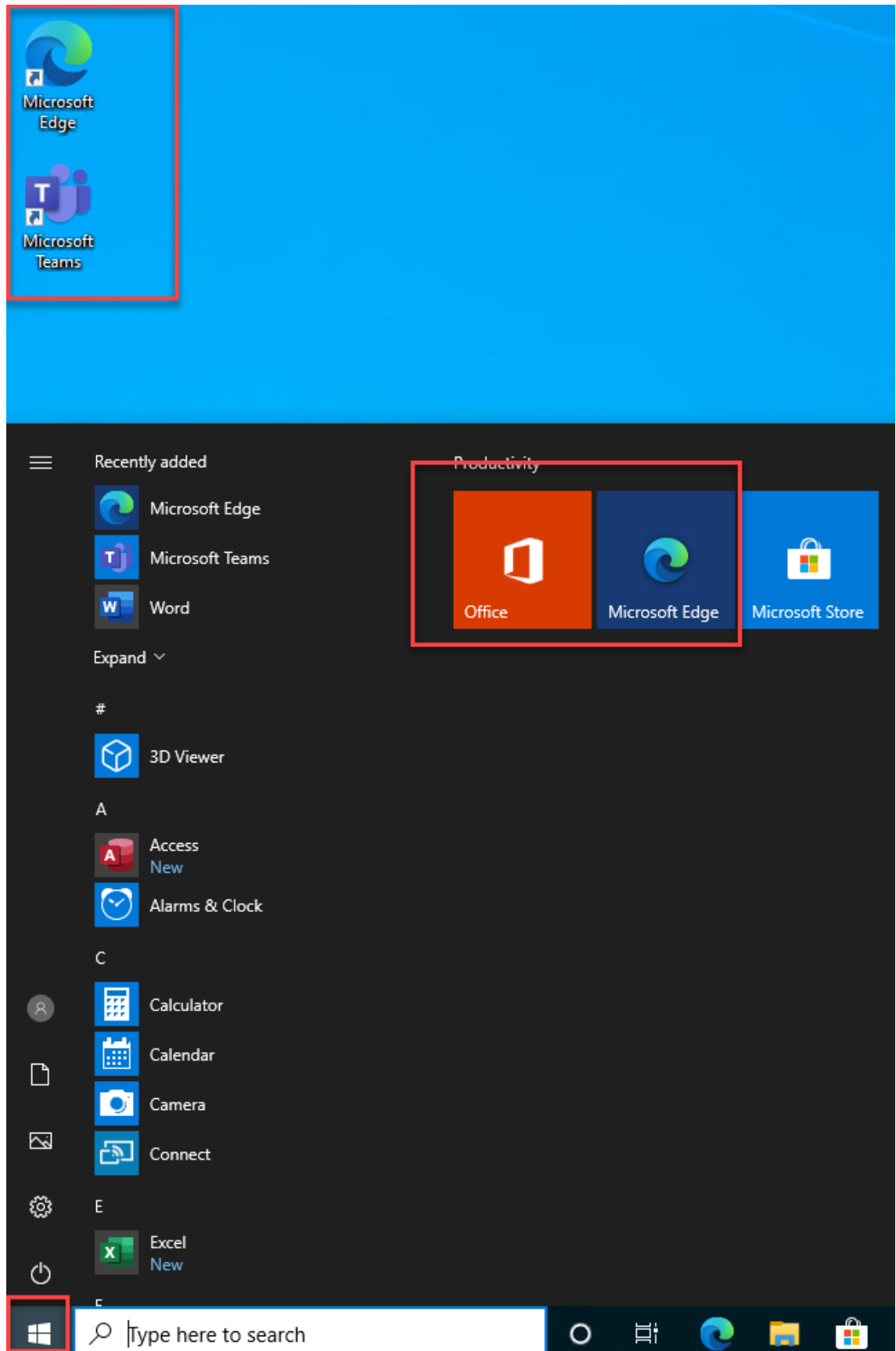
- If you selected to install Office 365, you will see a setup.exe window during execution.
- If you selected to install OneDrive, you will see a OneDrive window during execution.
- If you selected to run System Clean Up, you will see the Disk Cleanup wizard during execution. This window may stay on the "Windows Update Cleanup" task for a few minutes while it cleans out older files in the Windows Side by Side.

Note: This script takes some time to run, so be patient as it may seem like nothing is happening for a while, and then applications will begin to install. You can watch the status from within PowerShell. After the Disk Cleanup Wizard closes, you may notice the PowerShell window does not update. It is waiting for the cleanmgr.exe process to close, which can take some time. You can select the PowerShell window and continue to hit the up arrow on your keyboard until you are presented with an active prompt.

```
Administrator: Windows PowerShell
[09-03-2020 20:55:27.842] [OneDrive] [Main] :: Now Configuring the Update Ring to Production
[09-03-2020 20:55:27.858] [OneDrive] [Update-LocalGPOTextFile] :: Adding registry information to "C:\windows\Logs\ImagePrep\LGPO\OneDrive-Computer.txt" for LGPO.exe
[09-03-2020 20:55:27.874] [OneDrive] [Main] :: Now Configuring OneDrive to automatically sign-in with logins on user credentials.
[09-03-2020 20:55:27.889] [OneDrive] [Update-LocalGPOTextFile] :: Adding registry information to "C:\windows\Logs\ImagePrep\LGPO\OneDrive-Computer.txt" for LGPO.exe
[09-03-2020 20:55:27.905] [OneDrive] [Main] :: Now Enabling Files on Demand
[09-03-2020 20:55:27.920] [OneDrive] [Update-LocalGPOTextFile] :: Adding registry information to "C:\windows\Logs\ImagePrep\LGPO\OneDrive-Computer.txt" for LGPO.exe
[09-03-2020 20:55:28.692] [OneDrive] [Invoke-ImageCustomization] :: Now applying settings from "C:\windows\Logs\ImagePrep\LGPO\OneDrive-Computer.txt" to Local Group Policy via LGPO.exe.
LGPO.exe v1.00 - Local Group Policy Object utility

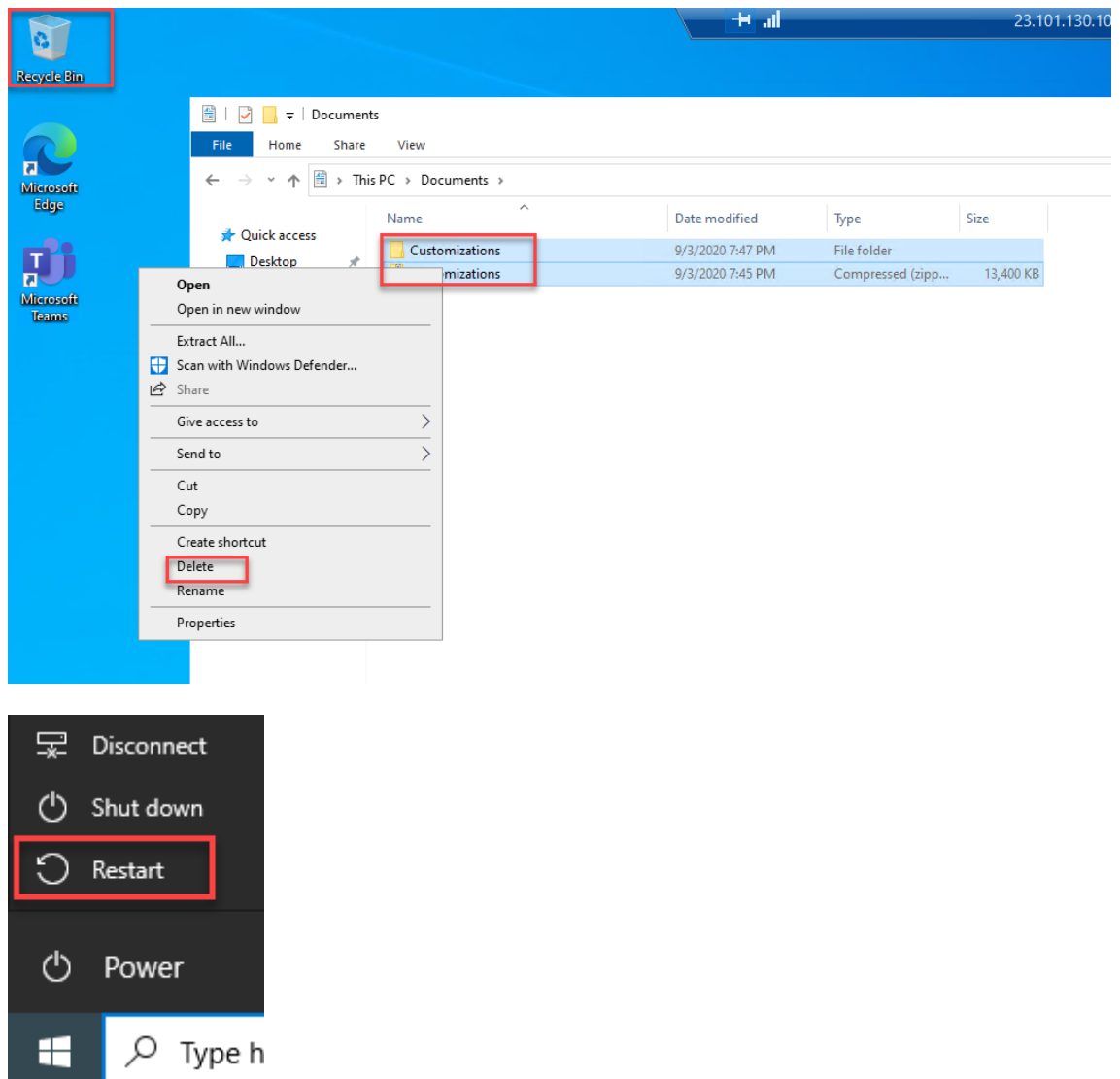
Apply registry-based settings from LGPO text file: C:\windows\Logs\ImagePrep\LGPO\OneDrive-Computer.txt
[09-03-2020 20:55:29.170] [OneDrive] [Main] :: Complete OneDrive Section.
[09-03-2020 20:55:29.185] [Teams] [Main] :: Starting Teams Installation and Configuration in accordance with "https://docs.microsoft.com/en-us/azure/virtual-desktop/teams-on-avd".
[09-03-2020 20:55:29.186] [Teams] [Get-InternetFile] :: Now Downloading file from "https://aka.ms/vs/16/release/vc_redist.x64.exe" to "C:\Users\ADAdmin\Documents\Customizations\Customizations\VSRedist.exe".
[09-03-2020 20:55:30.014] [Teams] [Get-InternetFile] :: Time taken: "0" seconds.
[09-03-2020 20:55:30.061] [Teams] [Get-InternetFile] :: Download was successful. Final file size: "14.306564310947" mb
[09-03-2020 20:55:30.077] [Teams] [Get-InternetFile] :: Now Downloading file from "https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4vkl" to "C:\Users\ADAdmin\Documents\Customizations\Customizations\Websocket.msi".
[09-03-2020 20:55:30.327] [Teams] [Get-InternetFile] :: Time taken: "0" seconds.
[09-03-2020 20:55:30.333] [Teams] [Get-InternetFile] :: Download was successful. Final file size: "1.015525" mb
[09-03-2020 20:55:30.373] [Teams] [Get-InternetFile] :: Now Downloading file from "https://statics.teams.cdn.office.net/production-windows-x64/1.3.00.13359/Teams_windows_x64.msi" to "C:\Users\ADAdmin\Documents\Customizations\Customizations\Teams_Windows_x64.msi".
[09-03-2020 20:55:36.654] [Teams] [Get-InternetFile] :: Download was successful. Final file size: "95.77734375" mb
[09-03-2020 20:55:44.263] [Teams] [Main] :: The exit code is 0
[09-03-2020 20:55:44.263] [Teams] [Main] :: Running "msiexec.exe /i "C:\Users\ADAdmin\Documents\Customizations\Customizations\Websocket.msi" /!v "C:\windows\Logs\Software\Websocket_MSI.log" /quiet"
[09-03-2020 20:55:47.372] [Teams] [Set-RegistryValue] :: Create registry key [HKLM:\Software\Microsoft\Teams].
[09-03-2020 20:55:47.388] [Teams] [Set-RegistryValue] :: Set registry key value: [HKLM:\Software\Microsoft\Teams] [IsWDEnvironment = 1].
[09-03-2020 20:55:47.388] [Teams] [Main] :: Starting installation of Microsoft Teams for all users.
[09-03-2020 20:55:47.404] [Teams] [Main] :: Running "msiexec.exe /i "C:\Users\ADAdmin\Documents\Customizations\Customizations\Teams_Windows_x64.msi" /!v "C:\windows\Logs\Software\Teams_MSI.log" ALLUSER=1"
[09-03-2020 20:56:43.120] [Teams] [Main] :: The exit code is 0
[09-03-2020 20:56:43.120] [Teams] [Main] :: Completed Teams Section.
[09-03-2020 20:56:43.197] [FSLogix Agent] [Main] :: Starting FSLogix Agent Installation and Configuration.
[09-03-2020 20:56:43.197] [FSLogix Agent] [Main] :: Downloading FSLogix Agent from Microsoft.
[09-03-2020 20:56:43.197] [FSLogix Agent] [Get-InternetFile] :: Now Downloading file from "https://go.microsoft.com/fwlink/?linkid=2084562" to "C:\Users\ADAdmin\Documents\Customizations\Customizations\Fslogix.zip".
[09-03-2020 20:56:49.759] [FSLogix Agent] [Get-InternetFile] :: Time taken: "6" seconds.
[09-03-2020 20:56:49.759] [FSLogix Agent] [Get-InternetFile] :: Download was successful. Final file size: "171.591674804688" mb
[09-03-2020 20:56:49.759] [FSLogix Agent] [Main] :: Extracting FSLogix Agent from zip.
[09-03-2020 20:56:57.009] [FSLogix Agent] [Main] :: Now copying the latest Group Policy ADMX and ADML files to the Policy Definition Folders.
[09-03-2020 20:56:57.352] [FSLogix Agent] [Main] :: Installation File: "C:\Users\ADAdmin\Documents\Customizations\Customizations\Fslogix\64\release\Fslogixappsssetup.exe" successfully extracted.
[09-03-2020 20:56:57.352] [FSLogix Agent] [Main] :: Now starting FSLogix Agent installation with command line: "C:\Users\ADAdmin\Documents\Customizations\Customizations\Fslogix\64\release\Fslogixappsssetup.exe" /quiet.
[09-03-2020 20:57:24.302] [FSLogix Agent] [Main] :: The Fslogixappsssetup.exe exit code is 0
[09-03-2020 20:57:24.491] [FSLogix Agent] [Main] :: Now performing FSLogix Configuration if enabled.
[09-03-2020 20:57:24.491] [FSLogix Agent] [Main] :: Completed FSLogix Agent script section.
[09-03-2020 20:57:24.507] [Edge Enterprise] [Main] :: Starting Microsoft Edge Enterprise Installation and Configuration in accordance with "https://docs.microsoft.com/en-us/deployedge/deploy-edge-with-config-action-manager".
[09-03-2020 20:57:24.507] [Edge Enterprise] [Main] :: Now downloading latest Edge installer and Administrative Templates.
[09-03-2020 20:57:25.647] [Edge Enterprise] [Get-InternetFile] :: Now Downloading file from "http://dl.delivery.mp.microsoft.com/filestreamingservice/files/355b4101-505b-4a17-8608-f1a3082b5fe2/MicrosoftEdgePolicyTemplates.zip" to "C:\Users\ADAdmin\Documents\Customizations\Customizations\MicrosoftEdgePolicyTemplates.zip".
[09-03-2020 20:57:32.194] [Edge Enterprise] [Get-InternetFile] :: Time taken: "7" seconds.
[09-03-2020 20:57:32.194] [Edge Enterprise] [Get-InternetFile] :: Download was successful. Final file size: "6.53159427642822" mb
[09-03-2020 20:57:38.568] [Edge Enterprise] [Get-InternetFile] :: Now Downloading file from "http://dl.delivery.mp.microsoft.com/filestreamingservice/files/789ec525-0feb-4d62-a24b-99fd15d117e4/MicrosoftEdgeEnterprise64.msi" to "C:\Users\ADAdmin\Documents\Customizations\Customizations\MicrosoftEdgeEnterprise64.msi".
[09-03-2020 20:57:41.334] [Edge Enterprise] [Get-InternetFile] :: Time taken: "2" seconds.
[09-03-2020 20:57:41.334] [Edge Enterprise] [Main] :: Download was successful. Final file size: "88.01171875" mb
[09-03-2020 20:57:41.334] [Edge Enterprise] [Main] :: Now copying the latest Group Policy ADMX and ADML files to the Policy Definition Folders.
[09-03-2020 20:57:41.400] [Edge Enterprise] [Main] :: Now disabling Edge Automatic Updates
```

10. After the script has completed, select the Window start icon and note that Office, Microsoft Edge Chromium, and Microsoft Teams have been installed.



11. Once the script has completed execution, complete these final tasks:

- Delete the C:\BuildArtifacts directory.
- Delete the .zip file on your desktop or Documents folder.
- Empty the Recycle Bin.
- Copy the C:\Windows\Logs\ImagePrep\LGPO directory to your local workstation.
- Reboot the VM.



Task 4: Run Sysprep

1. After the VM has rebooted, reconnect your RDP session and sign in.
2. Open an Administrative Command Prompt.

3. Navigate to: **C:\Windows\System32\Sysprep.**

```
cd C:\Windows\System32\Sysprep
```

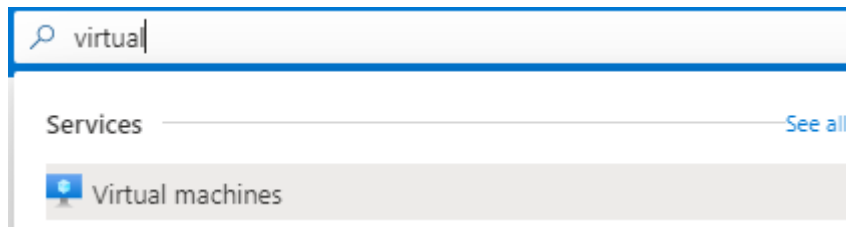
4. Run the following command to sysprep the VM and shutdown:

```
sysprep.exe /oobe /generalize /shutdown
```

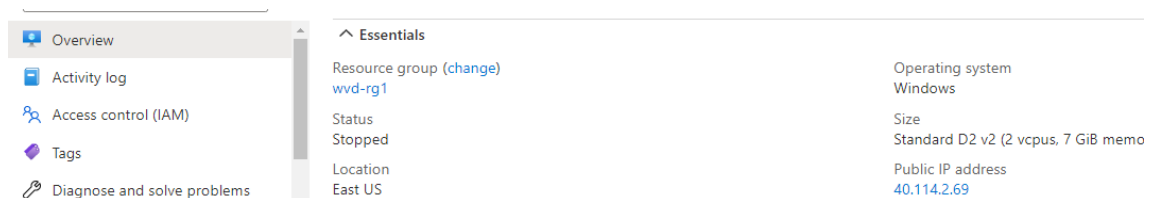
The system will automatically shut down and disconnect your RDP session.

Task 5: Create a managed image from the Master Image VM

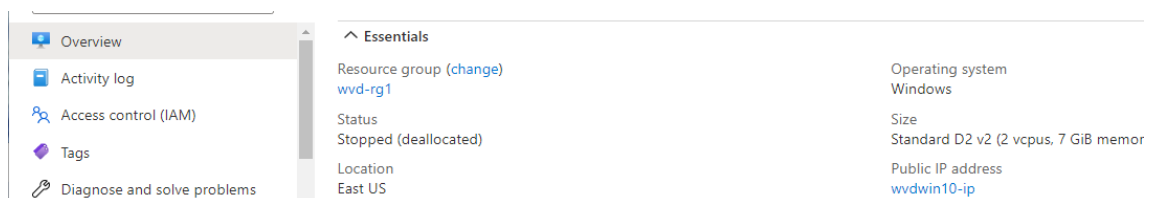
1. Sign in to the [Azure Portal](#).
2. At the top of the page, in the **Search resources** field, type **virtual machines**. Select **Virtual machines** from the list.



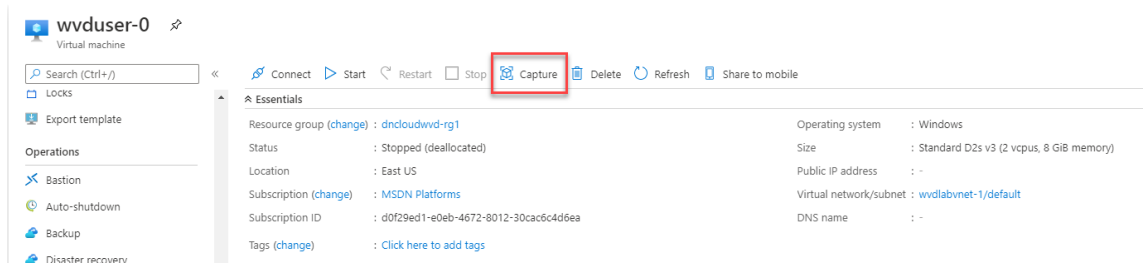
3. On the Virtual machines blade, locate the VM you used for your master image and **Select** on the name.



4. On the Overview blade for your VM, confirm the **Status** shows **Stopped**. Click **Stop** in the menu bar to move it to a deallocated state.



5. Once complete, Select **Capture** in the menu bar.



6. On the Create image blade, fill in the required fields :

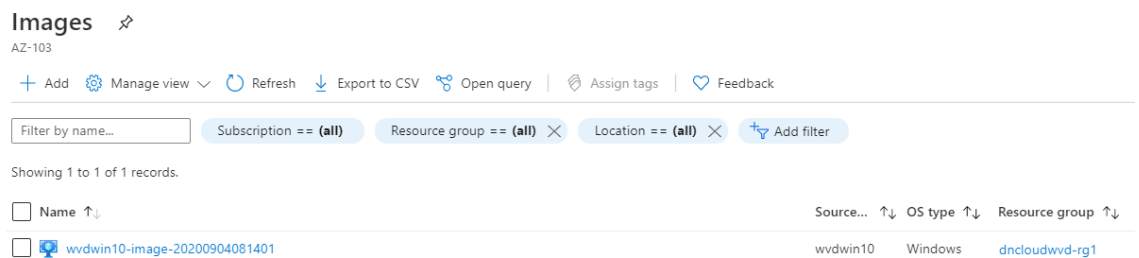
- Resource group: **wvd-rg1**
- Share image to Shared image gallery: **No, capture only a managed image.**
- Click **Review + create**

7. Once complete, it takes about 20min, type **images** in the **Search resources field** at the top of the page. Select **Images** from the list.

8. On the Images blade, locate your image and **Select** on the name.



9. On the Overview blade for your image, make note of the **Name** field and **Resource group** field. These attributes are needed when you provision your host pools.



Aula 4: Implementando o WVD

Duration: 45 minutes

In this exercise we will be creating a Windows Virtual Desktop host pool for pooled desktops. This is a set of computers or hosts which operate on an as-needed basis. In a pooled configuration we will be hosting multiple non-persistent sessions, with no user profile information stored locally. This is where FSLogix Profile Containers provide the users profile to the host dynamically. This provides the ability for an organization to fully utilize the compute resources on a single host and lower the total overhead, cost, and number of remote workstations.

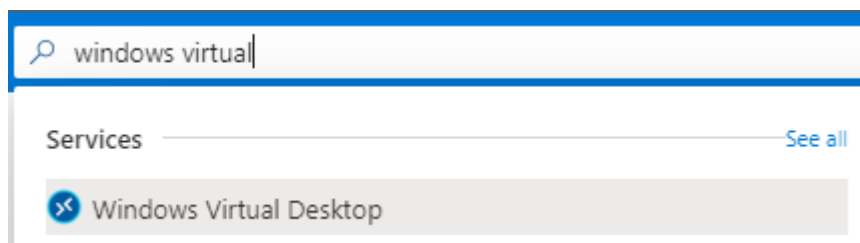
Additional Resources

Description	Links
Create a host pool with the Azure portal	https://docs.microsoft.com/en-us/azure/virtual-desktop/create-host-pools-azure-marketplace

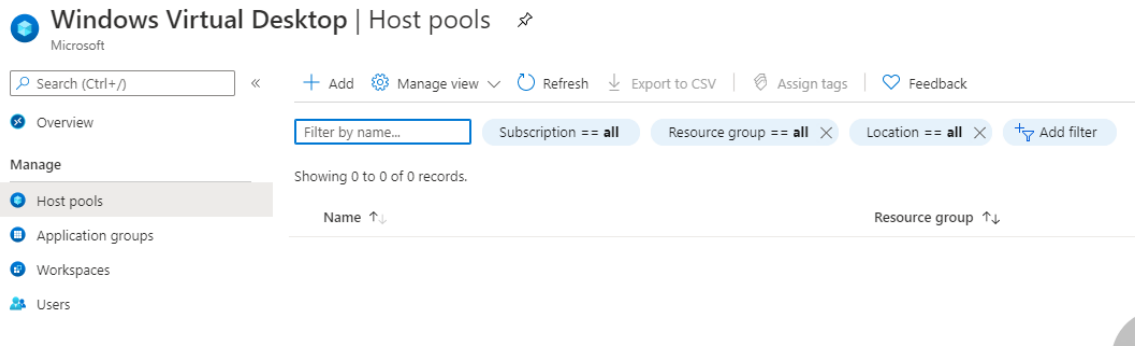
4.1: Create a host pool for Personal desktops

4.1.1: Create a new Host Pool and Workspace

1. Sign in to the [Azure Portal](#).
2. Search for **Windows Virtual Desktop** and select it from the list.



3. Under Manage, select **Host pools** and Select **+ Add**



4. On the Basics page, refer to the following screenshot to fill in the required fields:

Resource group: (create new) **wvdpool-rg1**

Host pool name: **wvdpool1**

Location: **East US**

Validation environment: **No**

Host pool type: **Personal**

Assignment type: **Automatic**

Create a host pool

Basics Virtual Machines Workspace Tags Review + create

Project details

Subscription * ⓘ opsgilitytraining

Resource group * ⓘ [Create new](#)

Host pool name *

Location * ⓘ East US
Metadata will be stored in Azure geography associated with (US) East US
[Learn more](#)

Host pool type

If you select pooled (shared), users will still be able to access their personalization and user data, using FSLogix.

Host pool type * Personal

Assignment type ⓘ Automatic

Click **Next: Virtual Machines**.

5. On the **Virtual Machines** page, click **YES** to Add virtual machines.

Name prefix: **wvdwin1**

Virtual machine location: **East US**

Availability options: **No Infrastructure redundancy required**
Image type: **Gallery**

6. For the **Image** click **See all images**, Select My Items and select your custom image created early

Marketplace My Items

My Images

Shared Images

wvdwin10-image-20210527105947
Azure Pass – Sponsorship (c1995bcc-6e37-4d28-aa64-5324819d1aa2)
Microsoft.Compute/images - eastus

Virtual machine size: **Standard D2s v3** (2 vCPU's, 8GiB memory)
Number of VMs: **1**

Network and security

Use Azure Firewall to secure your VNET and host pool resources. [Learn more](#)

*Virtual network ⓘ

Public IP ⓘ ☐ Yes ☒ No

Network security group ⓘ

Public inbound ports ⓘ ☐ Yes ☒ No

Inbound ports to allow

i All traffic from the internet will be blocked by default.

Specify domain or unit ⓘ ☐ Yes ☒ No

Administrator account

AD domain join UPN * ⓘ

Password * ⓘ

Confirm password * ⓘ

[Review + create](#) [< Previous](#) [Next: Workspace >](#)

On **Network and security** section, keep default values and fill this fields:
Virtual network: **workshop1-vnet**

On **Domain Administrator account** section, keep default values and fill this fields:

AD domain join UPN: **ADAdmin@workshop.local**

Password: **AdminPa\$\$w0rd!1234**

On **Virtual Machine Administrator** account section, keep default values and fill this fields:

Username: **winadmin**

Password: **Pa\$\$w0rd!1234**

Confirm password

Click **Next: Workspace**

- On the **Workspace** page, select **Yes** to register a new desktop app group. Select **Create new** and provide a **Workspace name**: **WorkspacePersonal**. Select **OK** and **Review + create**.

[Home](#) > [Windows Virtual Desktop](#) | [Host pools](#) >

Create a host pool

Basics Virtual Machines **Workspace** Tags Review + create

To save some time, you can register the default desktop application group from this host pool, with a new or pre-existing workspace.

Register desktop app group

☐ No ☒ Yes

To this workspace ⓘ

There's no available workspaces for selected location

[Create new](#)

Create new

Workspace name *

We will also create a display name for this workspace, which you can always edit later.

OK

Cancel

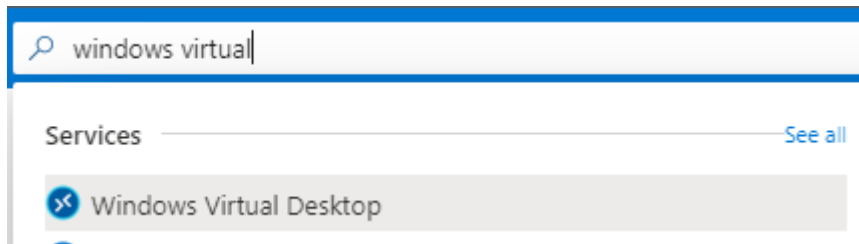
- On the Create a host pool page, Select **Create**.

4.1.2: Create a friendly name for the workspace

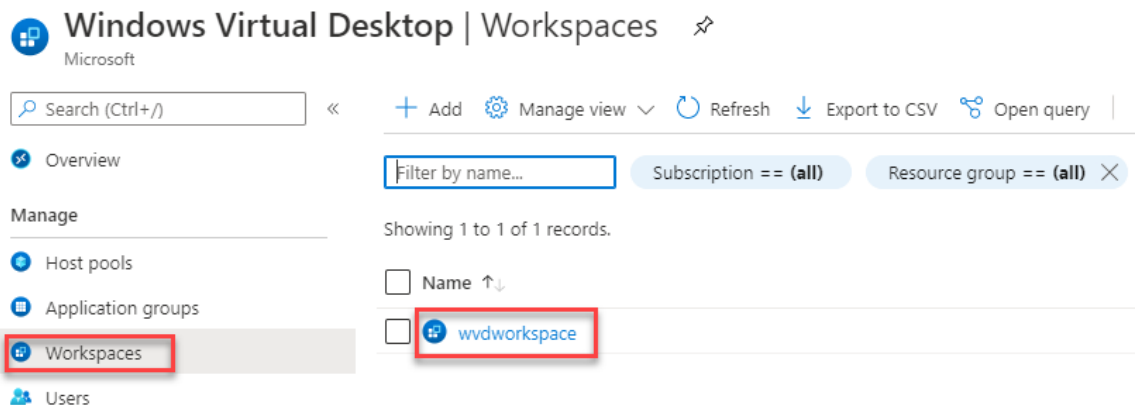
The name of the Workspace is displayed when the user signs in. Available resources are organized by Workspace. For a better user experience, we will provide a friendly name for our new Workspace.

Note: The workspace will not appear until Task 1 has completed deployment.

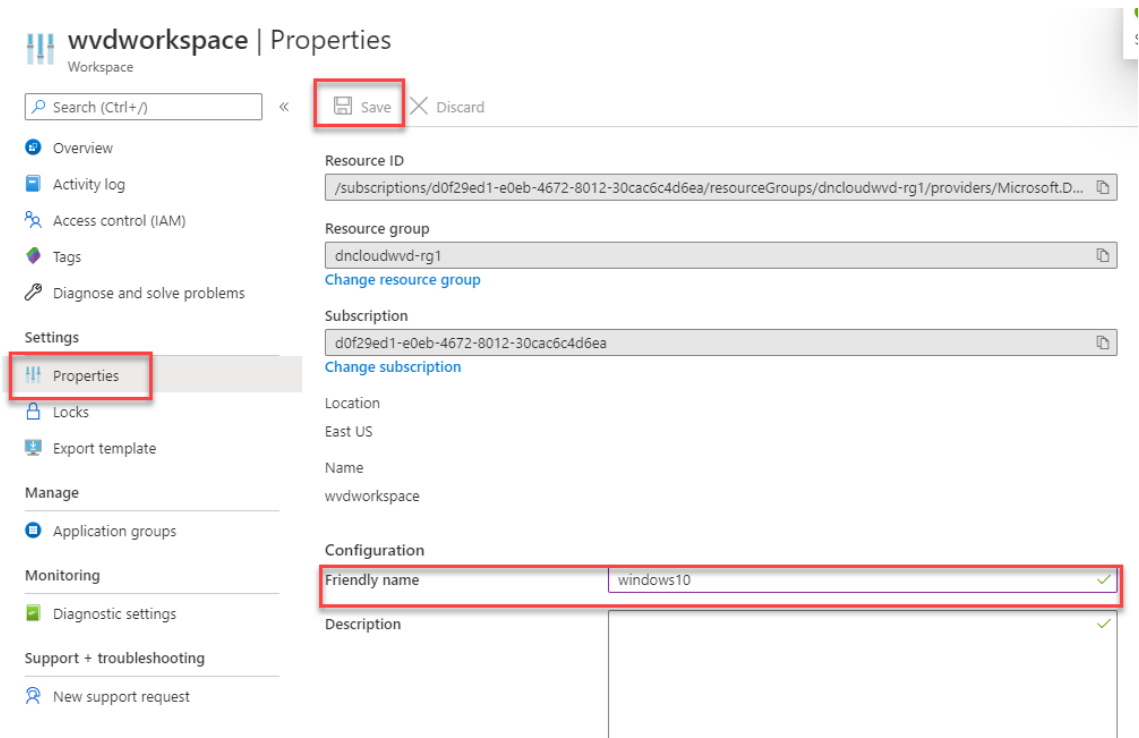
1. Sign in to the [Azure Portal](#).
2. Search for **Windows Virtual Desktop** and select it from the list.



3. Under Manage, select **Workspaces**. Locate the Workspace you want to update and Select on the name.



4. Under Settings, select **Properties**.
5. Update the **Friendly name** field to your desired name.

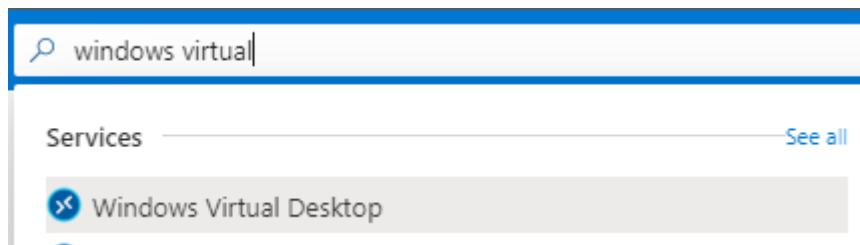


6. Select **Save**.

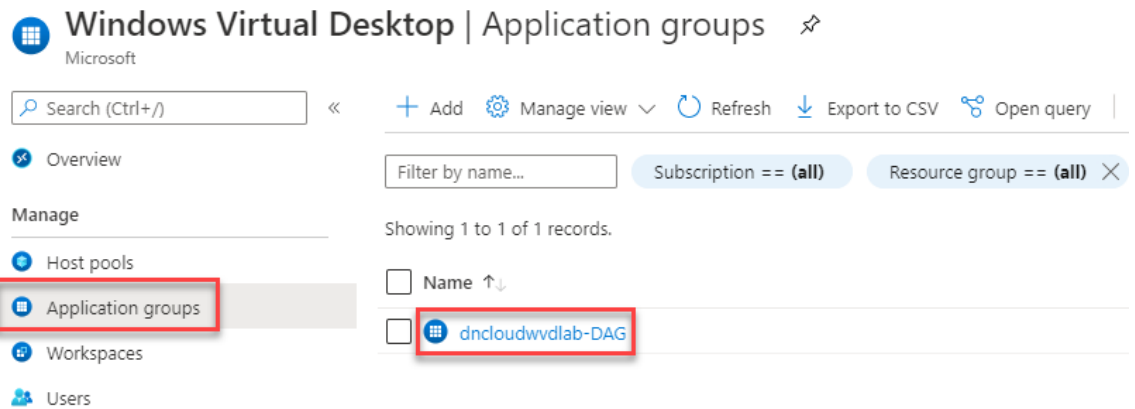
4.1.3: Assign an Azure AD group to an application group

In the new Windows Virtual Desktop on Azure portal, we now have the ability to use Azure Active Directory groups to manage access to our host pools.

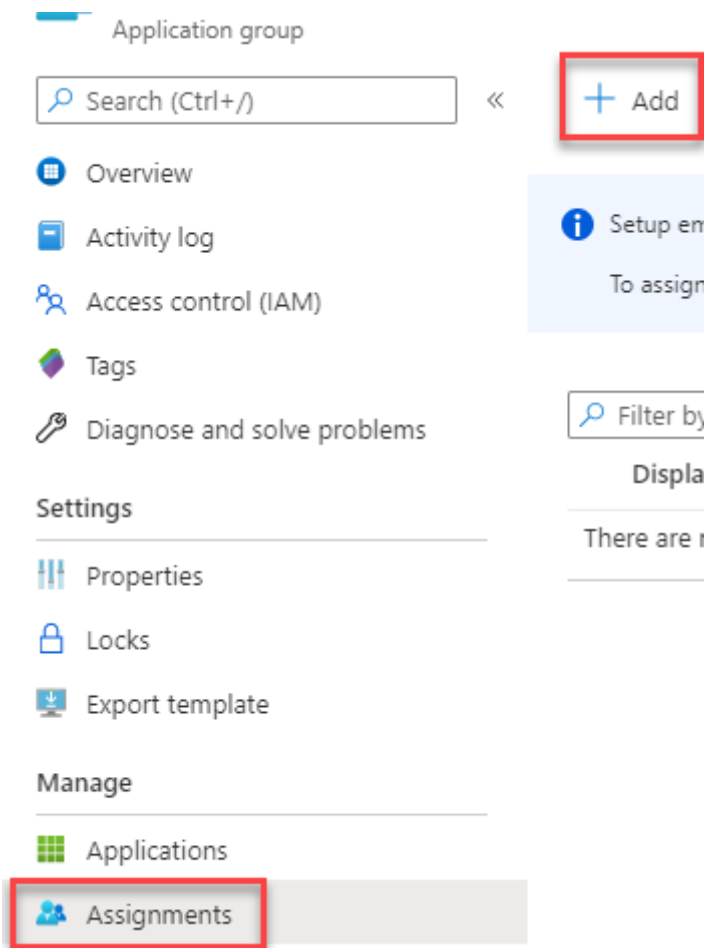
1. Sign in to the [Azure Portal](#).
2. Search for **Windows Virtual Desktop** and select it from the list.



3. Under Manage, select **Application groups**.
4. Locate the Application group that was created as part of Task 1. Select on the name.

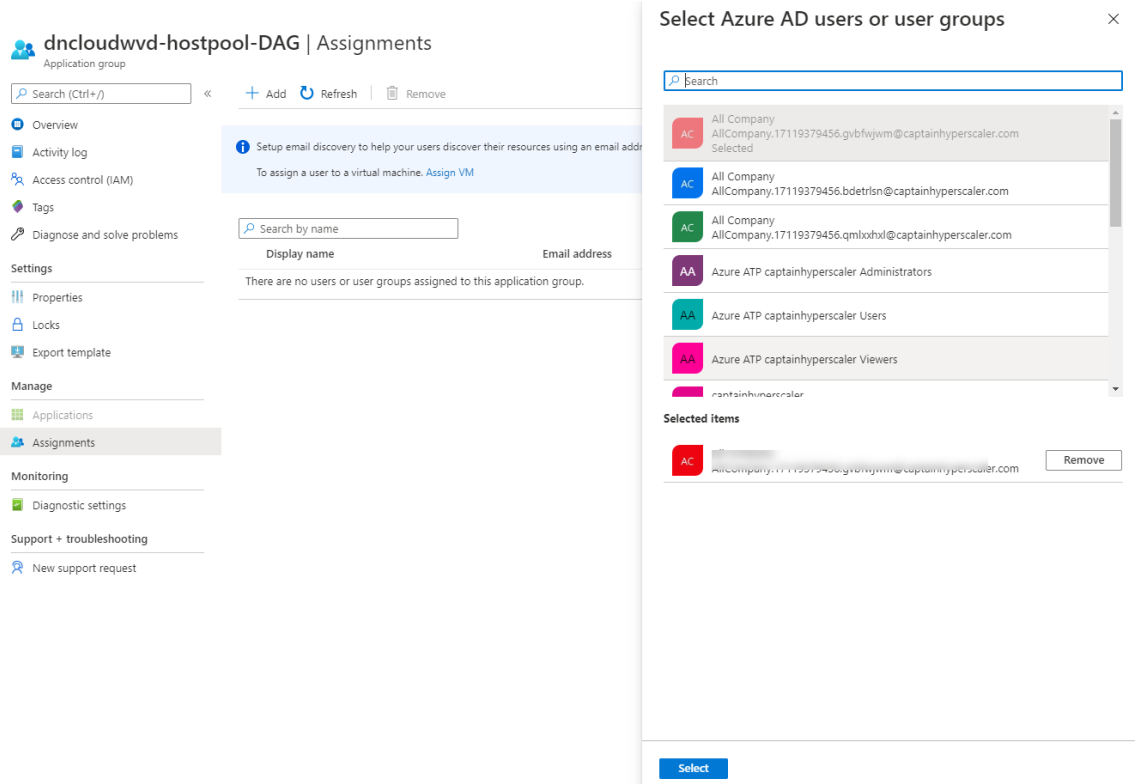


5. Under Manage, select **Assignments** and Select **+ Add**.



6. In the fly out, enter **WVD** in the search to find the name of your Azure AD group. In this exercise we will select **WVD Pooled Desktop Users** and **Azure Admin (azadmin@...)**

Note: Azure Admin will allow you to use your Azure tenant login to access resources in Exercise 7.



7. Choose **Select** to save your changes.

With the assignment added, you can move on to the next exercise. The users in the Azure AD group can be used to validate access to the new host pool in a later exercise.

4.2: Create a host pool and assign pooled remote apps. (Optional)

Duration: 45 minutes

In this exercise we will be creating a non-persistent host pool for publishing remote apps. This enables you to assign users access to specific applications rather than an entire desktop. This type of application deployment serves many purposes and is not new to WVD, but has existed in Windows Server Remote Desktop Services for many years.

Additional Resources

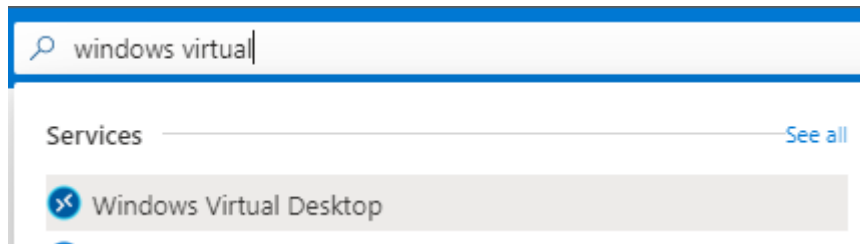
Description	Links

Publish built-in apps in <https://docs.microsoft.com/en-us/azure/virtual-desktop/publish-apps>

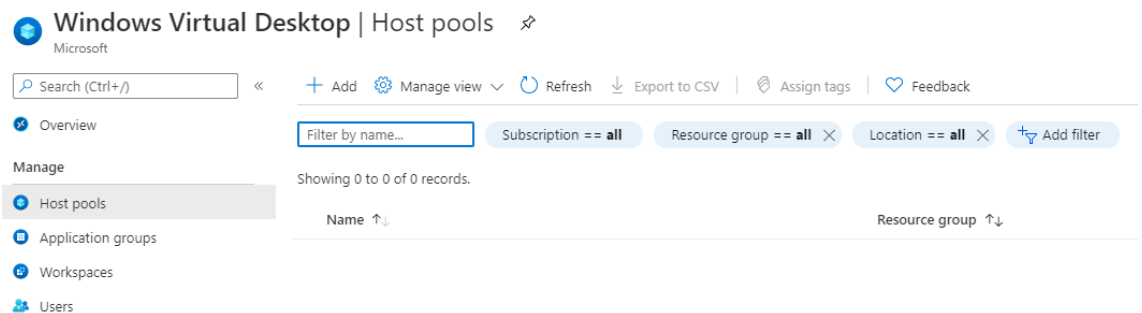
Manage app groups with the Azure portal <https://docs.microsoft.com/en-us/azure/virtual-desktop/manage-app-groups>

4.2.1: Create a new host pool and workspace

1. Sign in to the [Azure Portal](#).
2. Search for **Windows Virtual Desktop** and select it from the list.



3. Under Manage, select **Host pools** and Select **+ Add**.



4. On the Basics page, refer to the following screenshot to fill in the required fields.

Resource group: **wvdpool-rg1**

Host pool name: **remoteapppool**

Host pool type: **Pooled**

Max session limit: **5**

Load balancing algorithm: **Breadth-first.**

Create a host pool

Basics Virtual Machines Workspace Tags Review + create

Project details

Subscription * ⓘ MSDN Platforms

Resource group * ⓘ dncldwvd-rg1 [Create new](#)

Host pool name * remoteapppool ✓

Location * ⓘ East US
Metadata will be stored in Azure geography associated with (US) East US [Learn more](#)

Validation environment ⓘ ☒ No ☐ Yes

Host pool type

If you select pooled (shared), users will still be able to access their personalization and user data, using FSLogix.

Host pool type * Pooled

Max session limit ⓘ 5 ✓

Load balancing algorithm ⓘ Breadth-first

[Review + create](#) [Next: Virtual Machines >](#)

Once complete, Select **Next: Virtual Machine**.

5. Fullfill defaults fields:

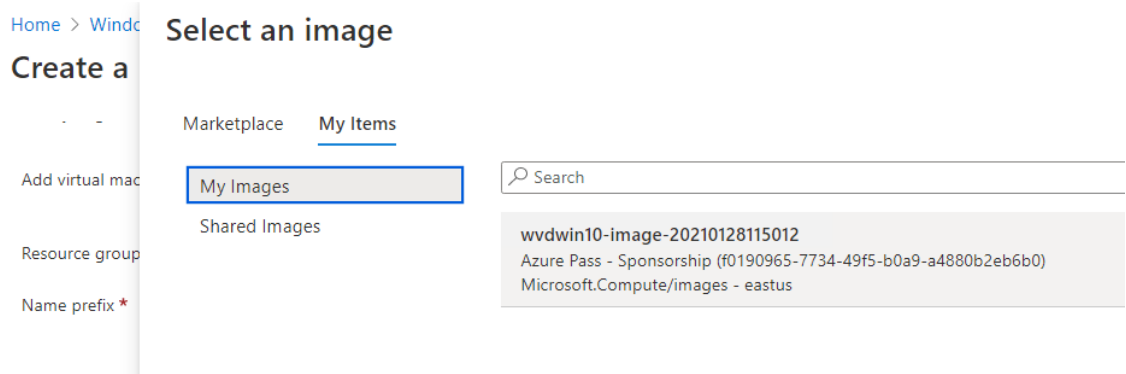
Add virtual machines: **Yes**

Name prefix: **wvdwin2**

Virtual machine location: **East US**

Availability option: **No infrastructure**

6. For the **Image**, select **Browse all images and disks** and then select My Items to select your image created at last step



7. Number of VMs: **1**
Network and security
 Virtual network: **workshop1-vnet**
Domain Administrator account
 AD domain join UPN: **ADAdmin@workshop.local**
 Password: **AdminPa\$\$w0rd!1234**
Virtual Machine Administrator account
 Username: **winadmin**
 Password: **Pa\$\$w0rd!1234**
 Confirm password

Create a host pool ...

Host pools are a collection of one or more identical virtual machines within Windows Virtual Desktop environments. Here you give details to create a resource group with virtual machines in an Azure subscription. [Learn more](#)

Add virtual machines	<input type="radio"/> No <input checked="" type="radio"/> Yes
Resource group	wvdpool-rg1
Name prefix *	wvdwin2 ✓
	i Session host name must be unique within the Resource Group.
Virtual machine location ⓘ	East US
Availability options ⓘ	No infrastructure redundancy required
Image type	Gallery
Image * ⓘ	wvdwin10-image-20210527105947
	See all images
Virtual machine size * ⓘ	Standard D2s v3 2 vCPU's, 8 GiB memory Change size
Number of VMs *	1 ✓
OS disk type * ⓘ	Standard SSD
Use managed disks ⓘ	<input checked="" type="radio"/> Yes <input type="radio"/> No
Boot Diagnostics ⓘ	<input checked="" type="radio"/> Enable with managed storage account (recommended) <input type="radio"/> Enable with custom storage account <input type="radio"/> Disable

Network and security

Use Azure Firewall to secure your VNET and host pool resources. [Learn more](#)

Virtual network * ⓘ	workshop1-vnet
Subnet ⓘ	adSubnet1 (10.0.1.0/24)
Network security group ⓘ	Basic
Public inbound ports ⓘ	<input type="radio"/> Yes <input checked="" type="radio"/> No
Inbound ports to allow	Select one or more ports
	i All traffic from the internet will be blocked by default.
Specify domain or unit ⓘ	<input type="radio"/> Yes <input checked="" type="radio"/> No

Domain Administrator account

AD domain join UPN * ⓘ	ADAdmin@workshop.local ✓
Password * ⓘ ✓

Virtual Machine Administrator account

Username * ⓘ	winadmin ✓
Password * ⓘ ✓
Confirm password * ⓘ ✓

6. On the Workspace page, select **Yes** to register a new desktop app group. Select **Create new** and provide a **WorkspacePooled**. Select **OK** and **Review + create**.

Create a host pool

Basics Virtual Machines Workspace Tags Review + create

To save some time, you can register the default desktop application group from this host pool, with a new or pre-existing workspace.

Register desktop app group ☐ No ☒ Yes

*To this workspace ⓘ

wvdworkspace

Create new

Create new

Workspace name *

remoteappworkspace ✓

We will also create a display name for this workspace, which you can always edit later.

OK Cancel

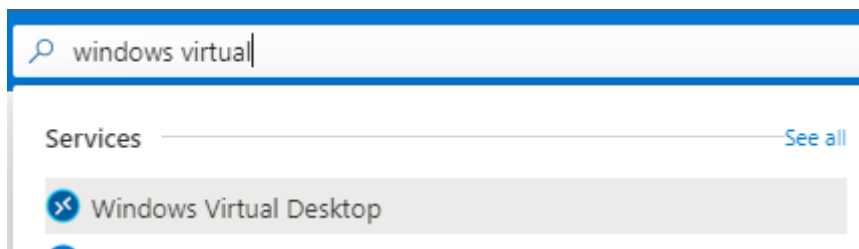
Review + create < Previous Next: Tags >

7. On the Create a host pool page, Select **Create**.

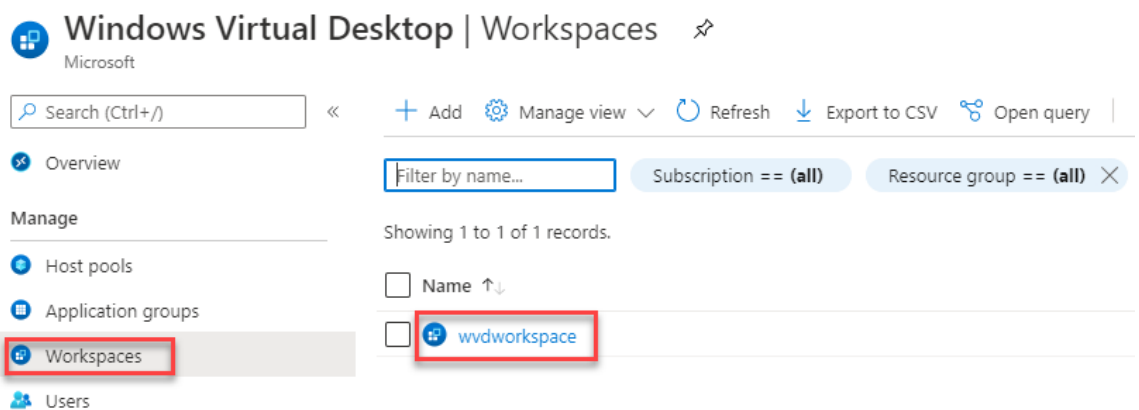
4.2.2: Create a friendly name for the workspace

The name of the Workspace is displayed when the user signs in. Available resources are organized by Workspace. For a better user experience, we will provide a friendly name for our new Workspace.

1. Sign in to the [Azure Portal](#).
2. Search for **Windows Virtual Desktop** and select it from the list.



3. Under Manage, select **Workspaces**. Locate the Workspace that was created for remote apps and Select on the name.



4. Under Settings, select **Properties**.
5. Update the **Friendly name** field to **WindowsAPPs**.

remoteapppool | Properties
Host pool

Search (Ctrl+/) « Save Discard Download template

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

Settings

- RDP Properties
- Properties**
- Locks

Manage

- Application groups
- Session hosts

Monitoring

- Diagnostic settings
- Logs

Automation

- Tasks (preview)

Basic

Resource ID
/subscriptions/7d6b4785-1839-497d-9727-ff29f4d02d1c/resourceGroups/wvd-rg4/providers/Microsoft.Desktop...

Resource group
wvd-rg4

Subscription
7d6b4785-1839-497d-9727-ff29f4d02d1c

Location
East US

Name
remoteapppool

Configuration

Personal desktop ☐ Yes ☒ No

Validation environment ☒ No ☐ Yes

Friendly name
WindowsAPPs

Description
Created through the WVD extension

6. Select **Save**.

4.2.3: Add Remote Apps to your Host Pool

1. Sign in to the [Azure Portal](#).
2. Search for **Windows Virtual Desktop** and select it from the list.
3. Under Manage, select **Host pools** and select the host pool that you created in Task 1. Select **Application groups** and select **Add** to create a new application group.

The screenshot displays the Azure portal interface for managing Windows Virtual Desktop. On the left, the 'Windows Virtual Desktop | Host pools' page is shown, with the 'remoteapps' host pool selected. On the right, the 'remoteapps | Application groups' page is displayed, showing a table with application groups. The 'Add' button in the top right corner of the application groups section is highlighted with a red box. The 'Application groups' link in the left sidebar is also highlighted with a red box.

Windows Virtual Desktop | Host pools
Microsoft

Search (Ctrl+/) << + Add Manage view >> ...

Filter by name...

Name ↑↓

Host pools

Application groups

Workspaces

Users

dncloudwvdlab

remoteapps

remoteapps | Application groups
Host pool

Search (Ctrl+/) << + Add Refresh Remove

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Properties

Locks

Export template

Manage

Application groups

Session hosts

Monitoring

Diagnostic settings

Support + troubleshooting

New support request

Name ↑↓	Friendly name ↑↓
remoteapps-DAG	Default Desktop

Create an application group

Basics Assignments Applications Workspace Tags Review + create

Subscription * ⓘ MSDN Platforms

Resource group * ⓘ dncloudwvd-rg1
[Create new](#)

Host pool ⓘ remoteapps

Location ⓘ East US

i Metadata stored in same location as host pool

Application group type
RemoteApp application groups are where you can add applications. A Desktop application group will grant full desktop access.

Application group type * ⓘ ☒ RemoteApp ☐ Desktop

i A desktop App group already exists in the selected host pool and you can only create RemoteApp app groups. [Learn more](#)

Application group name * remoteapps ✓

[Review + create](#) [Next: Assignments >](#)

Application group name: **remoteapps**

4. Select **Next: Applications**.

Dashboard > Windows Virtual Desktop >
Create an application group

Basics Assignments Applications Workspace Tags Review + create

Add users who you want to have access to this application group. You can always add or manage assignments any time later.

Name: *
+ Add Azure AD users or user groups

Review + create < Previous Next: Applications > Select

Select Azure AD users or user groups

WVD wvd

- wvd admin wvdadmin@az103dncloud.onmicrosoft.com
- WVD Persistent Desktop User
- WVD Pooled Desktop User
- WVD Remote App All Users Selected
- WVD Users

Selected items

WVD WVD Remote App All Users Remove

5. On the Applications page, Select **+ Add Application**.
6. On the Add Application fly out, next to Application source, select **Start Menu**. add the following applications, Selecting **Save** between selections.
 - Microsoft Edge
 - Microsoft Teams
 - WordPad

Dashboard > Windows Virtual Desktop >
Create an application group

Basics Assignments Applications Workspace Tags Review + create

Add applications to this application group. You can always add or manage applications any time later.

Name *	File path *
Outlook	C:\Program Files\Microsoft Office\root\Office16\OUTL...
Word	C:\Program Files\Microsoft Office\root\Office16\WINW...
Excel	C:\Program Files\Microsoft Office\root\Office16\EXCEL...

+ Add applications

Review + create < Previous Next: Workspace > Save Cancel

Add application

Select an application from your start menu or add from a file path.

Application source * Start menu

Application * PowerPoint

Display name PowerPoint

Description

Application path: C:\Program Files\Microsoft Office\root\Office16\POWE...

Icon path: C:\Program Files\Microsoft Office\root\Office16\POWE...

Icon index: 0

Require command line: ☒ No ☐ Yes




Save Cancel

[Home](#) > [Windows Virtual Desktop](#) > [remoteapppool](#) >

Create an application group

Basics Applications Assignments Workspace Tags Review + create

Add applications to this application group. You can always add or manage applications any time later.

Name ↑↓	File path ↑↓	
Microsoft Edge	C:\Program Files (x86)\Microsoft\Edge\Application\ms...	
Microsoft Teams	C:\Program Files (x86)\Microsoft\Teams\current\Teams...	
WordPad	C:\Program Files\Windows NT\Accessories\wordpad.exe	

[+ Add applications](#)

Review + create

< Previous

Next: Assignments >

- select **Next: Assignments**.
- On the assignments tab, select **Add assignments**. Search for the **WVD Remote App All Users** and **AZAdmin** created earlier in this guide and choose **Select**.

Note: AAD DC Administrators will allow you to use your Azure tenant login to access resources in Exercise 7.

- Select **Next: Workspace**.
- On the Workspace page, select **Yes** to register the application group.

Note: The **Register application group** field will automatically populate with the workspace name.
- Select **Review + Create**.

Create an application group

Basics Assignments Applications Workspace Tags Review + create

To save some time, you can register the default desktop application group from this host pool, with a new or pre-existing workspace.

Register application group ☐ No ☒ Yes

Register application group ⓘ

remoteapps

i Another application group in remoteapphost2 has already been registered, so this app group will also be registered to that same workspace.

Review + create

< Previous

Next: Tags >

12. Select **Create**.

You have successfully created a Remote App non-persistent Host Pool with published apps. You can validate this configuration when we connect to the environment in a later exercise.

4.3: Connect to WVD with the web client

Duration: 30 minutes

In this exercise we are going to walk through connecting to your WVD environment using the HTML5 web client and validating your deployment. The following operating systems and browsers are supported:

Additional Resources

There are multiple clients available for you to access WVD resources. Refer to the following Docs for more information about each client:

Description	Links
Connect with the Windows Desktop Client	https://docs.microsoft.com/en-us/azure/virtual-desktop/connect-windows-7-and-10
Connect with the HTML5 web client	https://docs.microsoft.com/en-us/azure/virtual-desktop/connect-web
Connect with the Android client	https://docs.microsoft.com/en-us/azure/virtual-desktop/connect-android
Connect with the macOS client	https://docs.microsoft.com/en-us/azure/virtual-desktop/connect-macos
Connect with the iOS client	https://docs.microsoft.com/en-us/azure/virtual-desktop/connect-ios

4.3.1: Connecting with the HTML5 web client

1. Open a supported web browser.
2. Navigate to the <https://rdweb.wvd.microsoft.com/arm/webclient>

Note: You will be asked to login when you access the above URL. The credentials that you use are those from the lab.

3. Sign in using a synchronized identity that has been assigned to an application group.

Note: If you added the **AZAdmin** to the groups in the previous exercises, you will be able to use your Global Administrator information.

This **must** be a user that is synchronized with the AD DS with Azure AD Connect. To verify, go to Azure Active Directory users and verify the directory sync users.

User: Bill.Smith@<seu-dominio>outlook.onmicrosoft.com

Password: Pa\$\$w0rd!1234

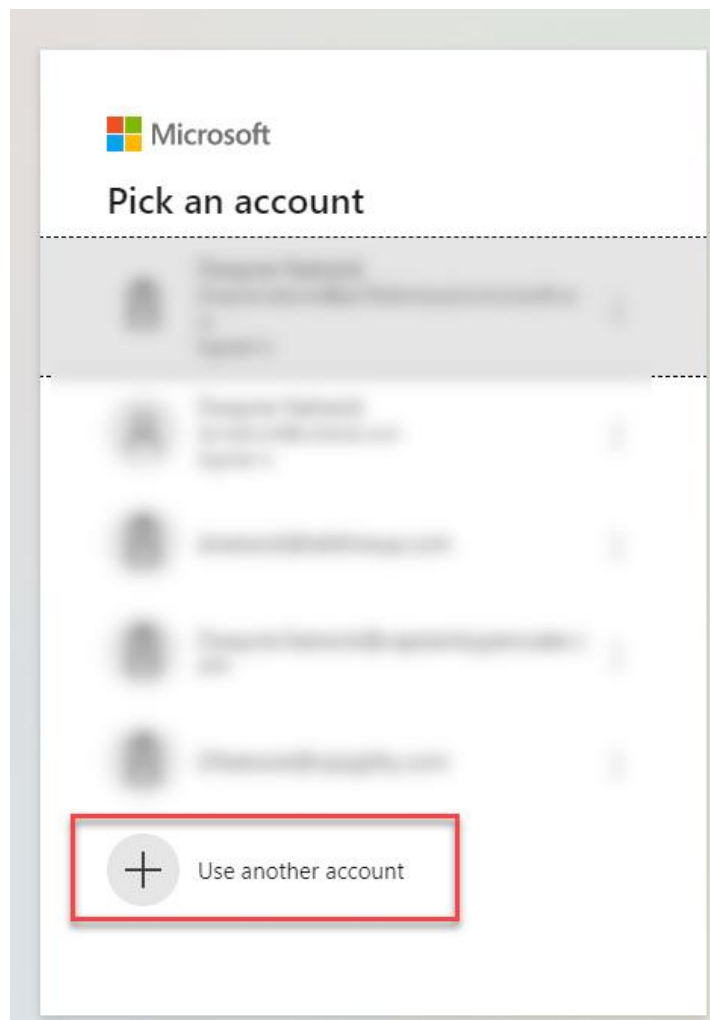
Users | All users (Preview)

« + New user + New guest user Bulk activities Refresh Reset password Multi-Factor Authentication Delete user Columns Preview features

This page includes previews available for your evaluation. View previews →

Search users Add filters

	Name	User principal name	User type	Directory synced
<input type="checkbox"/>	Bill Smith	Bill.Smith1359@...d.onmicrosoft.com	Member	Yes
<input type="checkbox"/>	Bob Jones	Bob.Jones2318@...d.onmicrosoft.com	Member	Yes





Sign in

██████████@██████████.onmicrosoft.com|

No account? [Create one!](#)

[Can't access your account?](#)

[Sign-in options](#)

Back

Next



← ██████████@██████████.onmicrosoft.co...

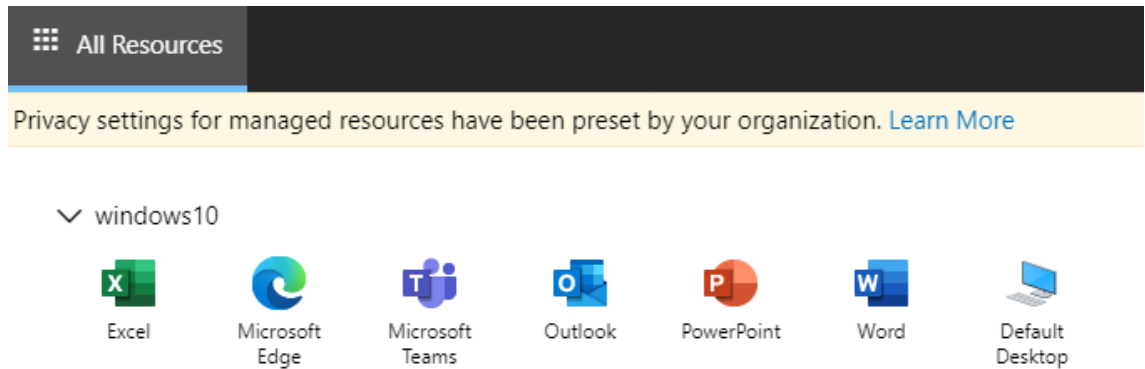
Enter password

Password

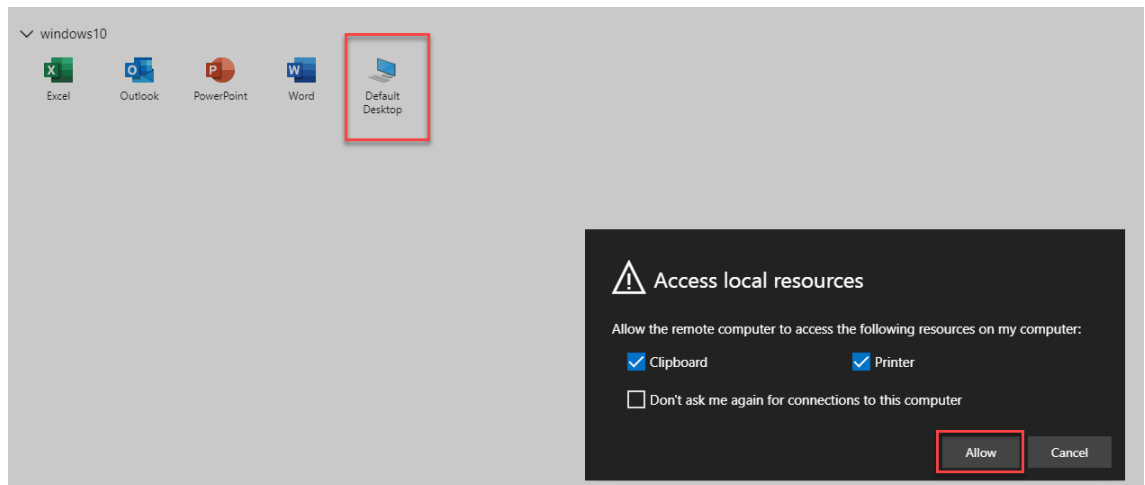
[Forgot my password](#)

Sign in

4. Select an available resource from the web client. In this example we will connect to a host pool containing pooled desktop.



- On the **Access local resources** prompt, review the available options for and Select **Allow**.



- On the **Enter your credentials** prompt, sign in using the same account from Step 3 and Select **Submit**.

Note: The username and password to login to the WVD desktop will be credentials from the domain controller user name and password created upon initial deployment. If you need the user email, RDP into the domain controller VM and find the user in the **Active Directory Users and Groups** and **OrgUsers**.

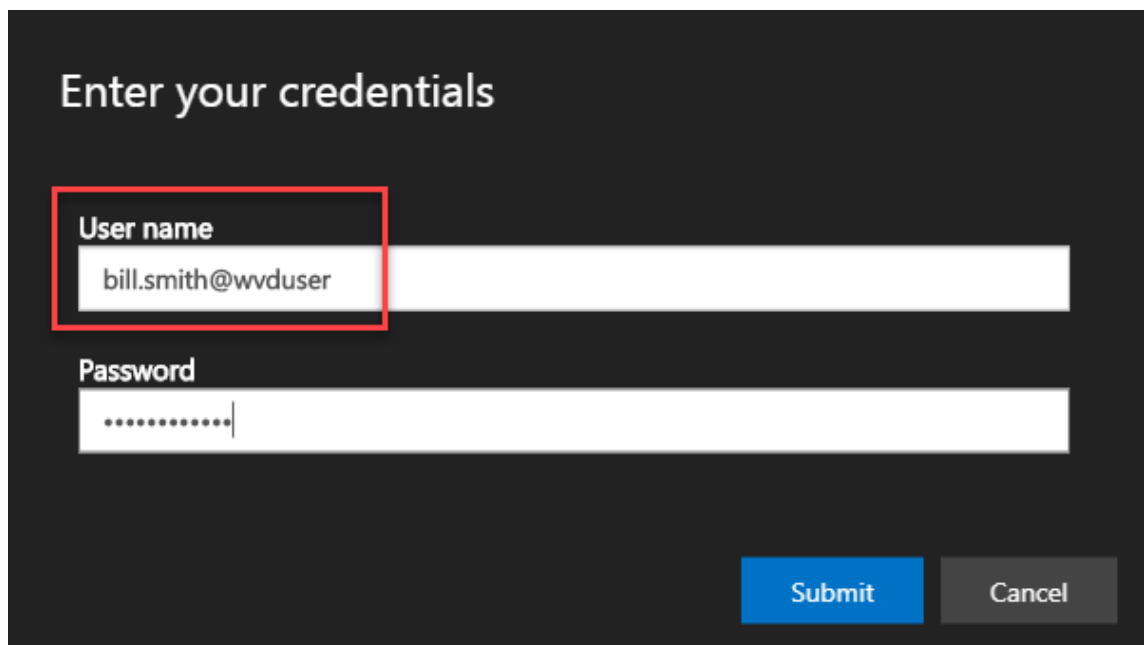
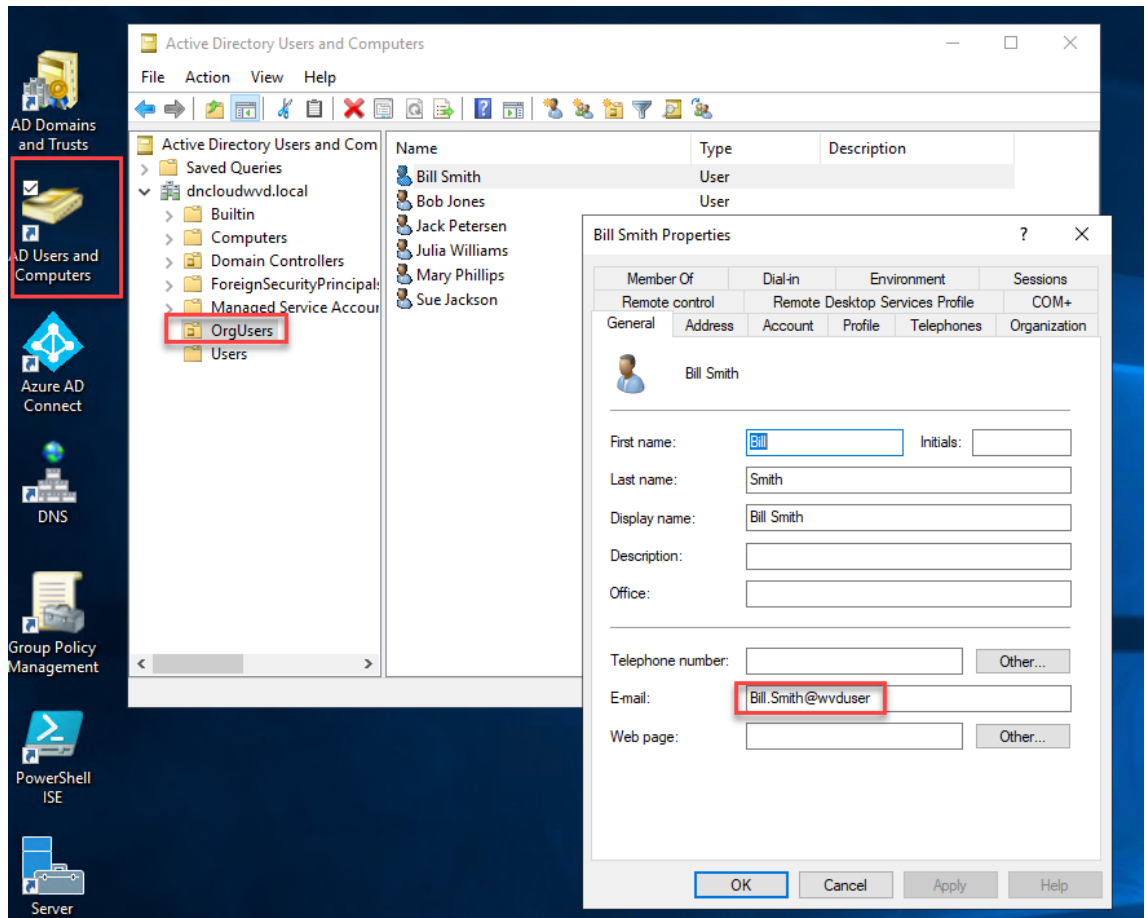
User: **bill.smith@workshop**

Password: **Pa\$\$w0rd!1234**

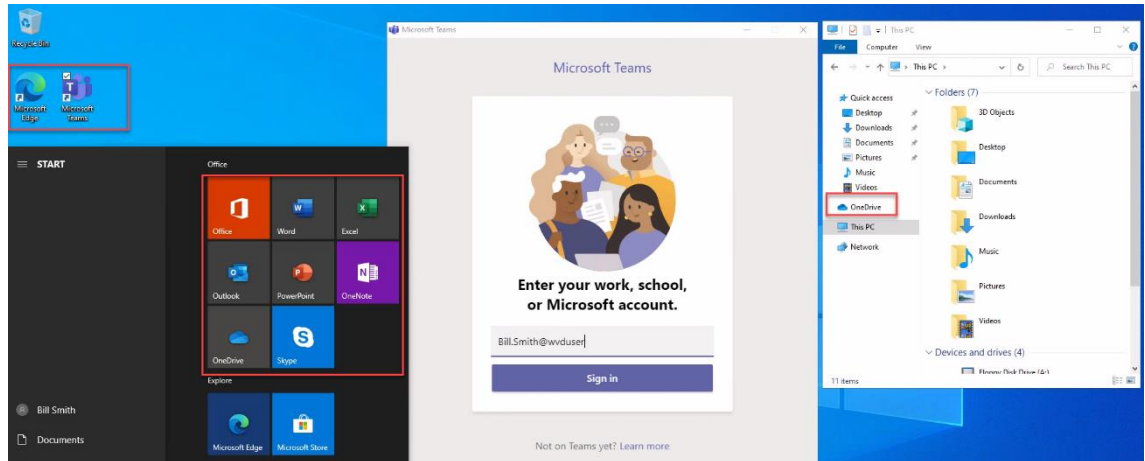
-ou-

user: **bob.jones@workshop**

Password: **Pa\$\$w0rd!1234**



- Once connected, validate the components relative to your configuration. The desktop should show icons for Microsoft Edge and Microsoft Teams. When you go to the Windows start menu, you can find the Office applications.



Troubleshooting

Web client stops responding or disconnects

Try connecting using another browser or client.

If issues continue even after you've switched browsers, the problem may not be with your browser, but with your network. We recommend you contact network support.

Web client keeps prompting for credentials

If the Web client keeps prompting for credentials, follow these instructions:

1. Confirm the web client URL is correct.
2. Confirm that the credentials you're using are for the Windows Virtual Desktop environment tied to the URL.
3. Clear browser cookies.
4. Clear browser cache.
5. Open your browser in Private mode.

Aula 5: Fechamento do Workshop

Duration: 15 minutes

5.1 Apagando todo o cenário

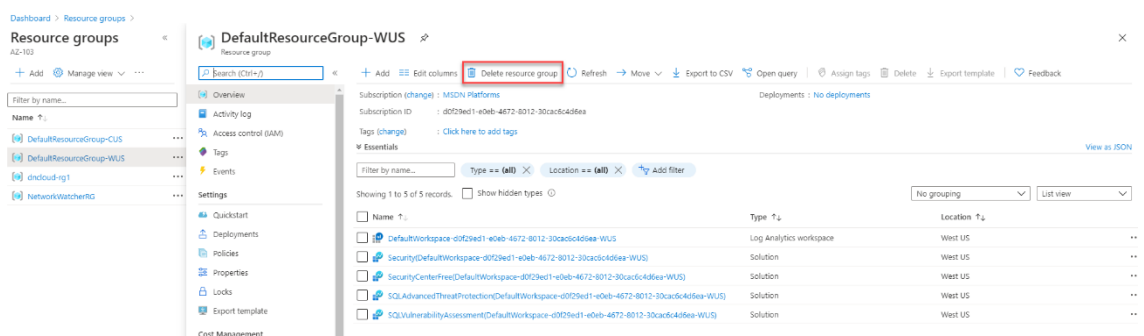
WARNING: Prior to continuing you should remove all resources used for this lab. To do this in the **Azure Portal** click **Resource groups**. Select any resources groups you have created. On the resource group blade click **Delete Resource group**, enter the Resource Group Name and click **Delete**. Repeat the process for any additional Resource Groups you may have created. **Failure to do this may cause issues with other labs.** |

5.1.1: Delete Resource groups to remove lab environment

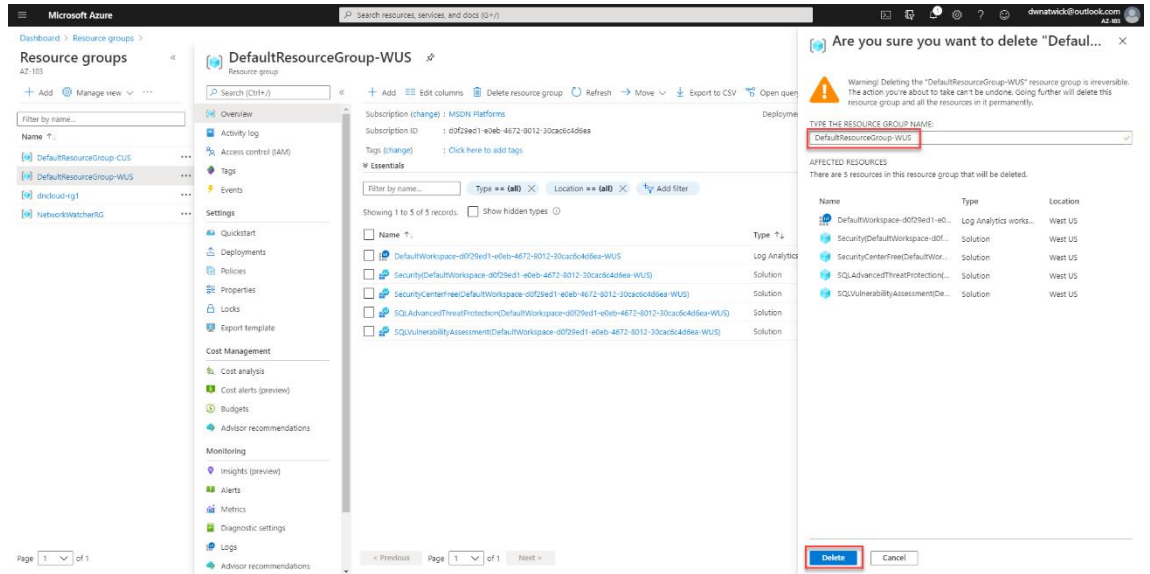
1. Go to the **Azure portal**.
2. Go to your **Resource groups**.



3. Select the **Resource group** that you created your resources.
4. Select **Delete Resource group**.



5. Enter the name of the **Resource group** and select **Delete**.



- Repeat these steps for all **Resource groups** created for this lab, including those for **Azure Monitor** and **Log Analytics**.

You should follow all steps provided *after* attending the Hands-on lab.