



# WINDOWS VIRTUAL DESKTOP

Lab guide

## [Abstract](#)

In this lab you will teach how to get started with Windows Virtual Desktop in Azure.

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## 1. Version

Version	Name	Comment
<b>20190510</b>	Jonathan Andersson	First version
<b>20190525</b>	Martin Modin	Comments
<b>20190602</b>	Jonathan Andersson	Updated

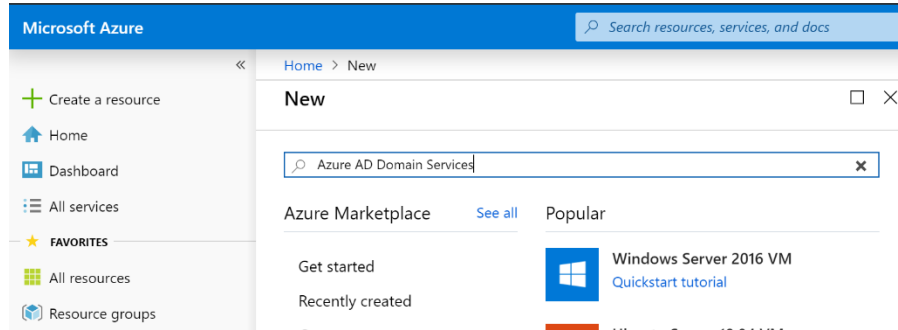
## 2. Configure domain controller, Vnet and DNS

**Note:** This step can be replaced with an Active Directory Domain Controller that syncs identities to Azure Active Directory by the connector. That is not covered in the lab.

### 2.1 Create Azure Active Directory Domain Services

<https://docs.microsoft.com/en-us/azure/active-directory-domain-services/active-directory-ds-getting-started>

#### 2.1.1 Click Create a resource in the portal and search for Azure AD Domain Services.



#### 2.1.2 Fill in the information in the form and use the location East US 2.

The screenshot shows the 'Enable Azure AD Domain Services' configuration form. The form is divided into two main sections: a left sidebar with a list of steps and a right pane for the 'Basics' step. The sidebar lists five steps: 1. Basics (Configure basic settings), 2. Network (Select virtual network), 3. Administrator group (Configure group membership), 4. Synchronization (Choose synchronization scope), and 5. Summary (Enable Azure AD Domain Services). The 'Basics' step is currently selected. The right pane shows the configuration details for the 'Basics' step, including fields for 'Directory name' (Contoso), 'DNS domain name' (joams.onmicrosoft.com), 'Subscription' (Azure Pass - Sponsorship), 'Resource group' ((New) lab), and 'Location' (East US 2). Each field has a dropdown menu or a text input field. There are also links for 'Create new' and 'Quickstart tutorial'.

2.1.3 At the network configuration, configure it as the picture below.

The screenshot displays the 'Enable Azure AD Domain Services' wizard in the Azure portal. The 'Network' step is active, showing a list of steps: 1. Basics (Completed), 2. Network (Selected), 3. Administrator group, 4. Synchronization, and 5. Summary. The 'Network' step includes a 'Select virtual network' button and a 'Select subnet' button. The 'Choose virtual network' pane shows a message: 'No virtual networks found in the selected subscription and location 'East US 2''. The 'Create virtual network' pane shows fields for Name (vnet), Address space (10.0.0.0/16), Subnet name (default), and Subnet address range (10.0.0.0/24).

2.1.4 Accept all the defaults on step 3-5 and click create.  
Creating AD Domain Services take 45 min up to 2h.

2.2 Add DNS to the vnet by clicking Configure on Update DNS server settings for your virtual network.

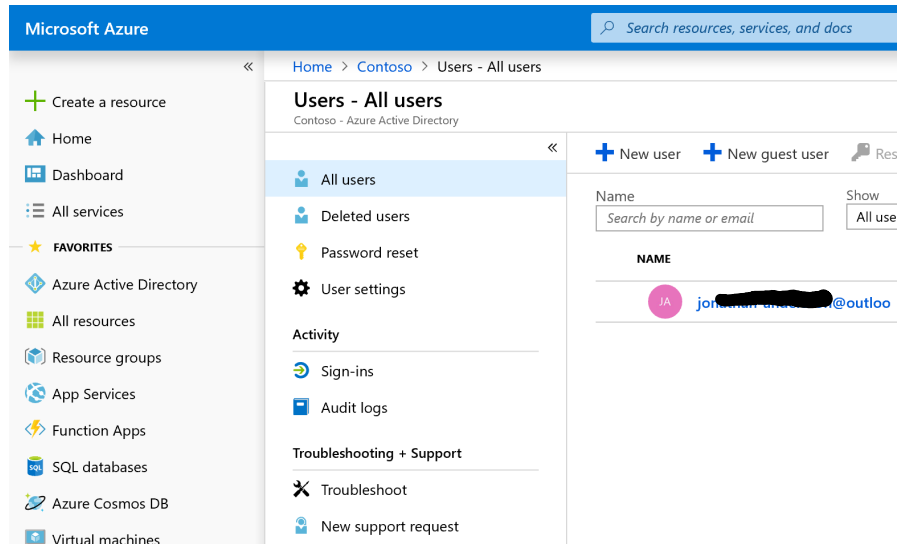
2.2.1 Click Configure on Update DNS server settings for your virtual network.

The screenshot displays the Azure portal interface for the 'joams.onmicrosoft.com' Azure AD Domain Services instance. The 'Overview' tab is selected, showing the instance is 'Running'. The 'Required configuration steps' section shows a step to 'Update DNS server settings for your virtual network' with a 'Configure' button.

## 3. Administrator user

### 3.1 Create an administrator user

#### 3.1.1 In the portal go to Azure Active Directory and click *New user*.



### 3.1.2 Add an itadmin account and add it to the AAD DC Administrators group under Groups and Global Administrator under Directory role.

Copy the Password and username and save it for later, click Create.

Microsoft Azure

Home > Default Directory > Users - All users > User

**User**  
Default Directory

\* Name ⓘ  
itadmin ✓

\* User name ⓘ  
itadmin@jonathananderson1outlook.on... ✓

Profile ⓘ  
Not configured >

Properties ⓘ  
Default >

Groups ⓘ  
1 groups selected >

Directory role ⓘ  
Global administrator >

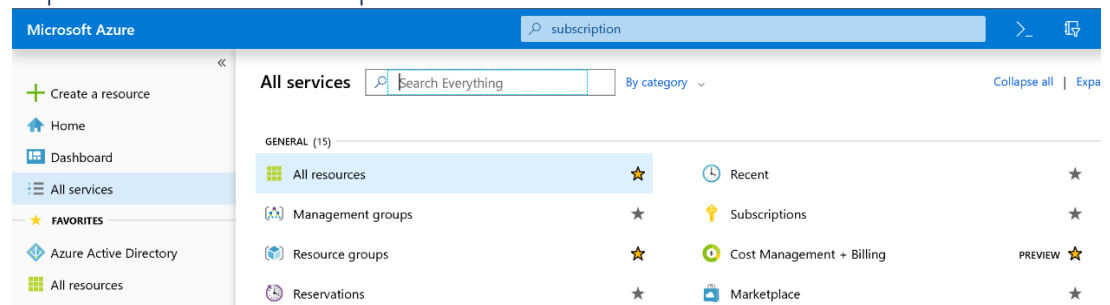
Password  
Doxo3796 ⓘ  
☒ Show Password

Create

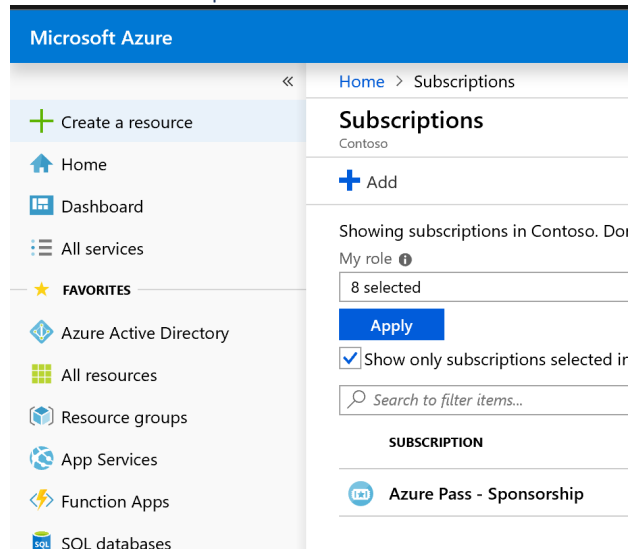
## 4. Owner at the Subscription

### 4.1 Add the new user (itadmin) as an Owner at the Subscription

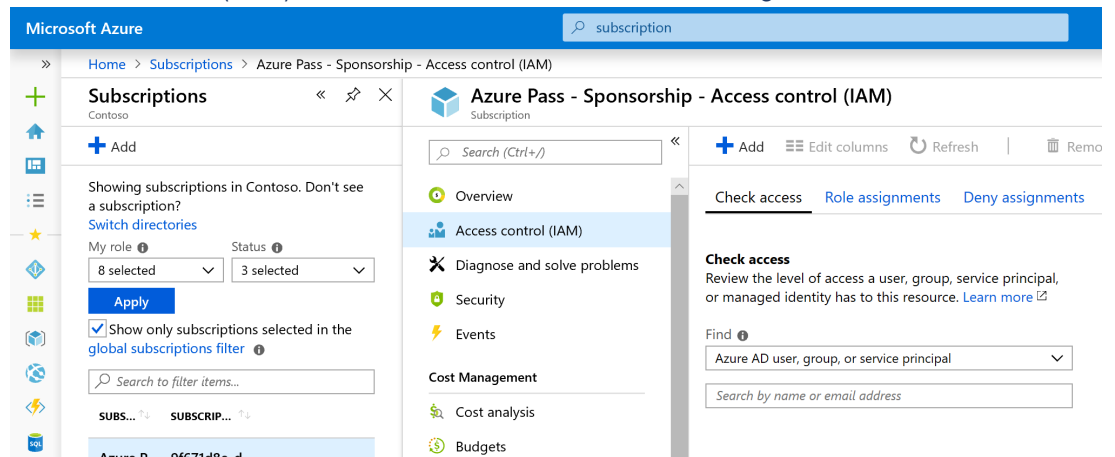
#### 4.1.1 In the portal search for Subscriptions under All Services



#### 4.1.2 Click on the Subscription



#### 4.1.3 Click Access control (IAM) and click Add and then Add role assignment.





#### 4.1.4 Add the *itadmin* user to the Role Owner.

**Add role assignment** ✕

Role ⓘ  
Owner ▼

Assign access to ⓘ  
Azure AD user, group, or service principal ▼

Select ⓘ  
Search by name or email address ✓

AD AAD DC Administrators

Selected members:

IT	itadmin itadmin@joams.onmicrosoft.com	Remove
----	--	--------

## 5. Login with *itadmin*

Log out from the Azure Portal and login with the user *itadmin*. Change password at login.

## 6. Create a Windows Virtual Desktop Tenant

6.1 Grant Azure Active Directory permissions to the Windows Virtual Desktop Preview service

6.1.1 <https://docs.microsoft.com/en-us/azure/virtual-desktop/tenant-setup-azure-active-directory#grant-azure-active-directory-permissions-to-the-windows-virtual-desktop-preview-service>

Use the account *itadmin* to login.

6.2 Assign the TenantCreator application role to a user in your Azure Active Directory tenant

6.2.1 <https://docs.microsoft.com/en-us/azure/virtual-desktop/tenant-setup-azure-active-directory#assign-the-tenantcreator-application-role-to-a-user-in-your-azure-active-directory-tenant>

Use the account *itadmin*.

6.3 Create a new Windows Virtual Desktop tenant

Documentation for reference if needed at 6.3.1 <https://docs.microsoft.com/en-us/azure/virtual-desktop/tenant-setup-azure-active-directory#create-a-windows-virtual-desktop-preview-tenant>

### 6.3.1 Open Windows PowerShell ISE as an administrator and run the following lines one-by-one.

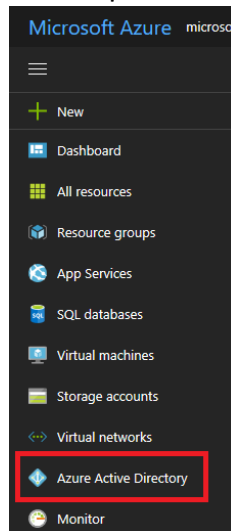
```
# Install and import Windows Virtual Desktop module
Install-Module -Name Microsoft.RDInfra.RDPowerShell
Import-Module -Name Microsoft.RDInfra.RDPowerShell

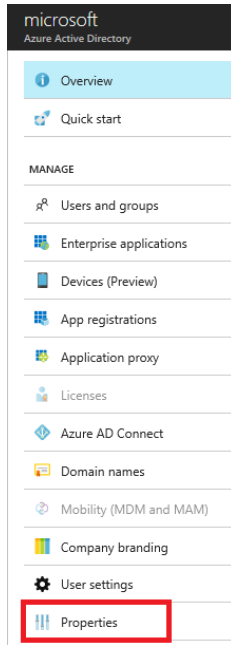
# Sign into Windows Virtual Desktop using the TenantCreator user account (itadmin) with this cmdlet:
Add-RdsAccount -DeploymentUrl "https://rdbroker.wvd.microsoft.com"

# Create a new Windows Virtual Desktop tenant associated with the Azure Active Directory tenant
$RdsTenantName='<Tenant name needs to be unique>'
$AadTenantId='<For more info see below>'
$AzureSubscriptionId='<For more info see below>'
New-RdsTenant -Name $RdsTenantName -AadTenantId $AadTenantId -AzureSubscriptionId
$AzureSubscriptionId
```

To find information for the parameters see the information below.

#### Get the \$AadTenantId





Save Discard

\* Name  
Microsoft

Country or region  
United States

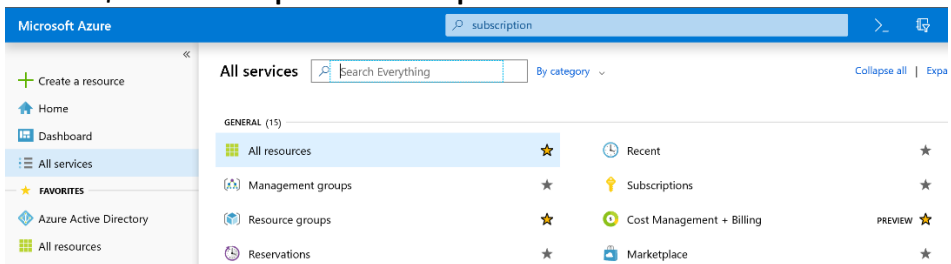
Location  
Asia, United States, Europe datacenters

Notification language  
English

Global admin can manage Azure Subscriptions  
Yes No

Directory ID  
xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx

## Get the \$AzureSubscriptionId Subscription ID



Click subscription and copy the Subscription ID.

The screenshot shows the Microsoft Azure portal interface. The left sidebar contains navigation links: 'Create a resource', 'Home', 'Dashboard', 'All services', 'FAVORITES', 'All resources', 'Resource groups', 'App Services', 'Function App', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', and 'Load balancers'. The main content area is titled 'Azure Pass - Sponsorship' and includes a search bar, a list of subscriptions, and a detailed view of the selected subscription. The 'Subscription ID' is highlighted with a red circle.

**Subscription List:**

SUBSCRIPTION...	SUBSCRIPTION ID
Azure Pass ...	b48a3887-4088-4...

**Subscription Details:**

- Subscription ID: b48a3887-4088-4f1d-a623-844444444444
- Subscription name: Azure Pass - Sponsorship
- Directory: Default Directory - jonathananderson@outlook.on...
- My role: Owner
- Offer: Azure Pass
- Offer ID: MS-AZR-0243P
- Current billing period: 6/2/2019-7/1/2019
- Currency: SEK
- Status: Active

## 6.4 Create a host pool with Azure Marketplace

<https://docs.microsoft.com/en-us/azure/virtual-desktop/create-host-pools-azure-marketplace>

- 6.4.1 In the portal search for the Windows Virtual Desktop and choose it.  
Fill in the form with similar values.

The screenshot shows the 'Create Windows Virtual Desktop' portal with the 'Basics' configuration step selected. The left sidebar shows a progress bar with six steps: 1. Basics (selected), 2. Configure virtual machines, 3. Virtual machine settings, 4. Windows Virtual Desktop info, 5. Summary, and 6. Buy. The main panel displays the 'Basics' configuration fields:

- Hostpool name:** wvdhostppol01
- Desktop type:** Pooled (selected), Personal
- Default desktop users:** itadmin@joams.onmicrosoft.com
- Subscription:** Azure Pass - Sponsorship
- Resource group:** (New) wvdhostppol01
- Location:** East US 2

There is a note about user experience and a 'Learn more' link.

Fill in information about Virtual machines.

The screenshot shows the 'Create Windows Virtual Desktop' portal with the 'Configure virtual machines' step selected. The left sidebar shows a progress bar with six steps: 1. Basics, 2. Configure virtual machines (selected), 3. Virtual machine settings, 4. Windows Virtual Desktop info, 5. Summary, and 6. Buy. The main panel displays the 'Configure number of VMs' configuration fields:

- Usage Profile:** Light, Medium (selected), Heavy, Custom
- Total users:** 1
- Virtual machine size:** 1x Standard D8s v3 (8 vcpus, 32 GB memory)
- Virtual machine name prefix:** wvd

There is a 'Change size' link next to the virtual machine size.

Fill in information about settings.

Create Windows Virtual Desk... X

1 Basics Done ✓

2 Configure virtual machines Done ✓

3 Virtual machine settings Select VM configuration settings >

4 Windows Virtual Desktop inf... Authenticate to Windows Virtual ... >

5 Summary Windows Virtual Desktop - Provis... >

6 Buy >

Configure the VMs for Az... □ X

Image source ⓘ  
Blob storage Managed image  
Gallery

Image OS version  
Windows 10 Enterprise multi-session ▾

Disk Type  
HDD SSD

\* AD domain join UPN ⓘ  
itadmin@joams.onmicrosoft.com ✓

\* Admin Password ⓘ  
..... ✓

\* Confirm password  
..... ✓

Specify domain or OU ⓘ  
No Yes

\* Virtual network ⓘ  
vnet >

\* Subnets ⓘ  
Review subnet configuration >

⚠

You must select an existing virtual network that has access to the Active Directory. If you do not see it listed, you must re-start the deployment with the correct Azure location selected.

OK

**Note: Important that the *Windows Virtual Desktop tenant name* is the one you created earlier.**

The image shows two side-by-side windows from the Windows Virtual Desktop setup process.

The left window, titled "Create Windows Virtual Desk...", displays a progress bar with six steps:

- 1 Basics Done ✓
- 2 Configure virtual machines Done ✓
- 3 Virtual machine settings Done ✓
- 4 Windows Virtual Desktop info... Authenticate to Windows Virtual ... (highlighted)
- 5 Summary Windows Virtual Desktop - Provis...
- 6 Buy

The right window, titled "Authenticate to Windows Virtual Desktop", contains the following fields and options:

- \* Windows Virtual Desktop tenant group name: Default Tenant Group
- \* Windows Virtual Desktop tenant name: Tenant name you created earlier ✓
- Windows Virtual Desktop tenant RDS Owner: UPN (selected) Service principal
- \* UPN: itadmin@joams.onmicrosoft.com ✓
- \* Password: [masked] ✓
- \* Confirm password: [masked] ✓

A warning message at the bottom states: "You cannot enter a user account that requires MFA. If you intend to use MFA, consider creating a service principal for this purpose."

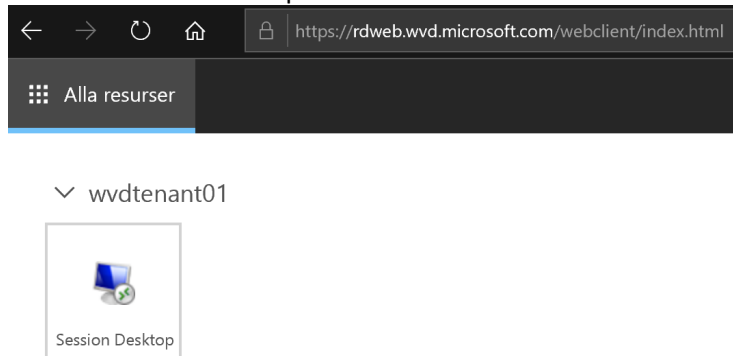
This step can take up to 30 min.

## 7. Access the applications with a browser

<https://rdweb.wvd.microsoft.com/webclient>

Log in with user itadmin.

### 7.1 Click on Session Desktop



Login with itadmin to the Session Desktop.

## 8. Publish an application

### 8.1 Application publishing to new user

8.1.1 Create a new user in Azure Active Directory with username bob. See earlier step for this.

8.1.2 Open Windows PowerShell ISE and run the following lines one-by-one.

```
# Create a RemoteApp group
$HostPoolName = "wvdhostpool"
$AppGroupName = "Apps"
$user = "<add the user you created in step 7.1.1>"

# Run the following PowerShell cmdlet to create a new empty RemoteApp group.
New-RdsAppGroup -TenantName $RdsTenantName -HostPoolName $HostPoolName -Name $AppGroupName -
ResourceType "RemoteApp"

# Run the following cmdlet to get a list of start menu apps on the host pool's virtual machine image. Write down the
values for FilePath, IconPath, IconIndex, and other important information for the application you want to publish.
Get-RdsStartMenuApp -TenantName $RdsTenantName -HostPoolName $HostPoolName -AppGroupName
$AppGroupName | Out-File -FilePath "C:\Temp\apps.txt"
# Run the following cmdlet to publish a new RemoteApp to the application group created in step 1.
New-RdsRemoteApp -TenantName $RdsTenantName -HostPoolName $HostPoolName -AppGroupName
$AppGroupName -Name "Wordpad" -FilePath "C:\Program Files\Windows NT\Accessories\wordpad.exe" -IconPath
"C:\Program Files\Windows NT\Accessories\wordpad.exe" -IconIndex 0
New-RdsRemoteApp -TenantName $RdsTenantName -HostPoolName $HostPoolName -AppGroupName
$AppGroupName -Name "Task Manager" -FilePath "C:\windows\system32\taskmgr.exe" -IconPath
"C:\windows\system32\taskmgr.exe" -IconIndex 0
New-RdsRemoteApp -TenantName $RdsTenantName -HostPoolName $HostPoolName -AppGroupName
$AppGroupName -Name "Paint" -FilePath "C:\windows\system32\mspaint.exe" -IconPath
"C:\windows\system32\mspaint.exe" -IconIndex 0

# To verify that the app was published, run the following cmdlet.
Get-RdsRemoteApp -TenantName $RdsTenantName -HostPoolName $HostPoolName -AppGroupName
$AppGroupName
# Run the following cmdlet to grant users access to the RemoteApps in the app group.
Add-RdsAppGroupUser -TenantName $RdsTenantName -HostPoolName $HostPoolName -AppGroupName
$AppGroupName -UserPrincipalName $user
Get-RdsAppGroupUser -TenantName $RdsTenantName -HostPoolName $HostPoolName -AppGroupName
$AppGroupName
```



## 8.2 Check that you can access the applications

8.2.1 Log in with user bob to <https://rdweb.wvd.microsoft.com/webclient/> with a new private browser. Check that you see the application below.

