

Microsoft Azure Virtual Desktop

Azure Virtual Desktop for Business Premium Hands-on Lab

Version:

0.1

Created by:

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2 About the document

Azure Virtual Desktop is a desktop and app virtualization service that runs on the cloud.

Here's what you can do when you run Azure Virtual Desktop on Microsoft Azure:

- Set up a multi-session Windows 11 or Windows 10 deployment that delivers a full Windows experience with scalability
- Present Microsoft 365 Apps for enterprise and optimize it to run in multi-user virtual scenarios
- Bring your existing Remote Desktop Services (RDS) and Windows Server desktops and apps to any computer
- Virtualize both desktops and apps
- Manage desktops and apps from different Windows and Windows Server operating systems with a unified management experience

If your current customer is hosting its remote desktop services on-premises. This Microsoft Learn page might be of value to you.

<u>Move on-premises Remote Desktop Services to Azure Virtual Desktop - Cloud Adoption</u> <u>Framework | Microsoft Learn</u>

3 Version history

V1 (May 2023):

Initial version

4 MFA Enforcement

Once you will receive your username and password, you will be forced to use your authenticator for the MFA with number matching. At the end of the event you can remove the entry from your authenticator



5 System requirements

As most configuration will be browser based, **a standard PC with recent Internet browser** with the "Remote Desktop" application (.msi version) installed on it or the ability to install the "Remote Desktop" application via .msi (<u>Windows 64-bit</u>) will be sufficient for this lab.

The system used for this lab should contain a recent internet browser and the "Remote Desktop" application (msi deployment) or the ability to install the "Remote Desktop" application.

In this hands-on lab instructions we assume the usage of a PC with the Microsoft Edge browser.

To prevent constantly changing screens, it might be an idea to bring a small tablet or similar to keep this lab document open during the hands-on lab.

Note: The embedded Remote Desktop Connection application (or the one that can be downloaded from the app store) cannot be used with Azure Virtual Desktop due to .rdpw file requirements.

6 Account requirements

During this hands-on lab, we will make use of a dedicated hands-on lab environment. There are no account pre-requisites.

7 Configure your lab environment

7.1 Remote Desktop client

To be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 1. In the search bar in your Windows task bar, type "Remote Desktop"
- 2. If installed the application will be available in the search results
- 3. Open the application
- 4. Click the ellipses (...) in the right upper hand corner and select **About**
- 5. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 6. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 1. Use the following link to download the Windows 64-bit version of the application.
- 2. Click on the downloaded file to install the application



3. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

7.2 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 1. Go to the https://admin.microsoft.com web page.
- 2. Click **Billing** in the Microsoft 365 admin center.
- 3. Under Billing click Purchase Services.
- 4. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 5. Click **Details**
- 6. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 7. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 8. Provide your verification code and click **Start your free trial period**.
- 9. Click Try now.
- 10. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

11. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.





7.3 Add the Admin account to the Edge Browser

To work in Microsoft Edge with another account it is recommended to work with an Microsoft Edge-profile linked to the account in this hands-on lab.

Usage of profile will allow for quick switching between this demo-environment and your production environment

- 1. Open a new instance of Microsoft Edge.
- 2. Click on the circle with your profile picture or initials in the top bar. (Depending on your browser version, it can be found in the top left or top right corner)
- 3. Click the settings icon in the top right corner
- 4. Click Add a Browser.
- 5. Click Add.
- 6. Click Choose an account and select + Add new account
- 7. Click **Sign in to sync data**
- 8. Fill in the sign in information. (*Hint: username is admin@xxxx.onmicrosoft.com*) click **Next**.
- 9. Fill in the password and click **Sign in** .
- 10. The "More information is required" message will appear to setup MFA for this user. Click **Next**.
- 11. On the next page follow the steps to get the Authenticator app if not already installed on your device. Click **Next** when the Authenticator is installed.
- 12. In the Authenticator app click **Add an account** and select **Work or School**. In the browser wizard click **Next**.
- 13. In the Authenticator app click **Scan the QR code** and scan the QR code in the wizard in the browser and click Next
- 14. A number will appear in the wizard that should be filled in in the Authenticator and click **Yes**
- 15. After that approve with your personal Authenticator pin code, a "Notification approved" message will appear in the wizard in the browser.
- 16. Click **Next** in the browser wizard
- 17. A success message will appear, click **Done**.
- 18. If the question arises or you would like to stay signed in, click "**No**".
- 19. Click Next.



20. Click Finish.

7.4 Naming conventions Azure resources

Just as with an on-premises environment, it makes sense to use a naming convention for the resources created within Azure. Give this naming convention some thought before creating any resources within the Azure tenant. Not all resources can be renamed after the creation and you will end up with inconsistent named resources.

An example of a naming convention:

<max 4 letter abbreviation of the azure resource>-<environment>-<Azure region
the resource resides>-<optional: purpose>-<serial number>

For a resource group in the Production environment, hosted in Western Europe, supporting the platform networking resources, the following name would suit the naming convention: "rg-p-we-network-01".

For a Log Analytics Workspace in the acceptance environment, hosted in Northern Europe, the following name would suit the naming convention: "law-a-ne-01".



8 Enable Multi Factor Authentication (MFA)

The primary security measure for every organization **MUST** be to enable multi-factor authentication for **ALL USERS**.

Although a "Man in the Middle" phishing attack can go around MFA, by injecting the MFA token (see https://aka.ms/EvilGinx) is provides more security than Single Factor Authentication.

This hands-on-lab will start with a check if the **Security Standards** have been enabled in this tenant. These "Security Standards" are by default enabled for all Azure-tenants provisioned after November 2020.

The Security Standards" are a limited set of minimal security settings to enable MFA for the Tenant.

8.1 Prepare for Conditional Access

In this step a custom policy will be created to configure a conditional access policy which enables a more fine-grained MFA implementation.

8.2 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote Desktop client

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 7. In the search bar in your Windows task bar, type "Remote Desktop"
- 8. If installed the application will be available in the search results
- 9. Open the application
- 10. Click the ellipses (...) in the right upper hand corner and select **About**
- 11. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 12. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 4. Use the following link to download the Windows 64-bit version of the application.
- 5. Click on the downloaded file to install the application
- 6. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

8.3 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.



- 5. Go to the https://admin.microsoft.com web page.
- 6. Click **Billing** in the Microsoft 365 admin center.
- 7. Under Billing click **Purchase Services**.
- 8. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 12. Click **Details**
- 13. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 14. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 15. Provide your verification code and click **Start your free trial period**.
- 16. Click **Try now**.
- 17. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

18. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.





Add the Admin account to the Edge Browser

- 1. In the **search bar** at the top of the Azure Portal, type "aad".
- 2. In the **search results**, click "**Azure Active Directory**" under "Services", the Azure Active Directory page will open.
- 3. On the Azure Active Directory page, in the left select the tab **Properties**.
- 4. At the very bottom of the page, under the "Access management for Azure Resources" section, click on the **Manage security defaults** link.
- 5. By default, the Security defaults are enabled.
- 6. Turn the Security defaults off, by selecting **Disabled (not recommended)**.
- 7. Select My organization uses Conditional Access.
- 8. To confirm your selection, click **Save** at the bottom of the page
- 9. Confirm the pop-up prompt.
- 10. Click the X icon in the upper right corner.

8.4 Conditional access - enforce MFA for administrators

The first policy which we will configure is to enforce MFA for all accounts with privileged access, like global administrators or Helpdesk administrators.

The policy will be enabled in the Report only mode, this is the safest way to start with conditional access (You want to avoid the possibility that you lock yourself out of the tenant).

8.5 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 13. In the search bar in your Windows task bar, type "Remote Desktop"
- 14. If installed the application will be available in the search results
- 15. Open the application
- 16. Click the ellipses (...) in the right upper hand corner and select **About**
- 17. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 18. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 7. Use the following link to download the Windows 64-bit version of the application.
- 8. Click on the downloaded file to install the application



9. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

8.6 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 9. Go to the https://admin.microsoft.com web page.
- 10. Click **Billing** in the Microsoft 365 admin center.
- 11. Under Billing click Purchase Services.
- 12. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 19. Click **Details**
- 20. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 21. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 22. Provide your verification code and click **Start your free trial period**.
- 23. Click Try now.
- 24. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

25. Expand Billing and click Licenses.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.





Add the Admin account to the Edge Browser

- 1. In the **search bar** at the top of the Azure Portal, type "aad".
- 2. In the **search results**, click "**Azure Active Directory**" under "Services", the Azure Active Directory page will open.
- 3. On the Azure Active Directory page, in the left-hand navigation, under manage, click **Security**.
- 4. On the Security | Getting started page, in the left-hand navigation, under Protect, click **Conditional Access**.
- 5. Click Create new policy.
- 6. Name: MFA for admins.
- 7. Assignments>Users, click **0 users and groups selected**.
- 8. On the **Include** tab, select **Select users and groups** and check the box in front of **Directory roles**.
- 9. Select all roles on which you like to enable MFA. As a bare minimum select at least the Global Administrator role.
- 10. Under "Cloud apps or actions" click **No cloud apps, actions, or authentication** contexts selected.
- 11. On the **Include** tab, select **All cloud apps**.
- 12. Access control>Grant, click **0 controls selected**.
- 13. Under the section "Access controls" click on the option **Grant access**.
- 14. Check the box in front of **Require multifactor authentication**.
- 15. Confirm at the bottom, click **Select**.
- 16. Under the section "Session" click **0 controls selected**.
- 17. Select **Persistent browser session > Never persistent**.

Note: for safety reasons, you don't want to allow permanent browser sessions as these browser sessions can remain active even when the browser is restarted.

- 18. Confirm at the bottom, click **Select**.
- 19. Confirm that the Enable policy is set to **Report only**.
- 20. Click Create.

Note: the conditional access policy can exclude users from signing in. By default the user configuring the policy will be excluded from the policy to prevent a lockout of the tenant.

- 21. Click I understand that my account will be impacted by this policy. Proceed anyway.
- 22. Confirm at the bottom, click **Create**.



As an example this policy will be configured as Report only. The next policy for the users will be configured as enforce..

8.7 Conditional access - enforce MFA for all users

This second policy will enforce conditional access for all users who sign in on the M365 applications, like Exchange Online and Microsoft Teams as well as the Azure portal.

- 1. We assume you are still in the Azure Active Directory portal on the Conditional Access policy page. If this is not the case please follow step 1-5 from the previous section 8.4, Conditional access enforce MFA for
- 2. Click Create new policy.
- 3. Name: MFA for users.
- 4. Assignments>Users, click **0 users and groups selected**.
- 5. On the **Include** tab, select **Select users and groups** and check the box in front of **All Users**.
- 6. Assignments>Cloud apps or actions, click **No cloud apps, actions, or authentication contexts selected**.
- 7. On the **Include** tab, select **Select apps**.
- 8. Click **None** under Select
- 9. Select Office 365
- 10. Confirm at the bottom, click **Select**.
- 11. Access control>Grant, click **0 controls selected**.
- 12. Select **Grant access**.
- 13. Check the box in front of **Require multifactor authentication**.
- 14. Confirm at the bottom, click **Select**.
- 15. Toggle the Enable policy switch to **On**.
- 16. Click **Create**.
- 17. Click I understand that my account will be impacted by this policy. Proceed anyway.
- 18. Confirm at the bottom, click **Create**.

9 Prerequisites – Virtual network

To be able to set up a Azure Virtual Desktop environment, an Azure Virtual Network (vnet) is required. For every network it is important to use a range of unique IP addresses. Connected networks cannot use the same IP address ranges. As this hands-on lab is a green field situation, no interference is expected but in a customer environment you most likely enter a brownfield situation.



9.1 Create an Azure Virtual Network

9.2 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote Desktop client

To be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 19. In the search bar in your Windows task bar, type "Remote Desktop"
- 20. If installed the application will be available in the search results
- 21. Open the application
- 22. Click the ellipses (...) in the right upper hand corner and select **About**
- 23. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 24. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 10. Use the following link to download the Windows 64-bit version of the application.
- 11. Click on the downloaded file to install the application
- 12. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

9.3 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 13. Go to the https://admin.microsoft.com web page.
- 14. Click **Billing** in the Microsoft 365 admin center.
- 15. Under Billing click **Purchase Services**.
- 16. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.





- 26. Click **Details**
- 27. On the Microsoft 365 Business Premium page click Start free trial version.
- 28. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 29. Provide your verification code and click **Start your free trial period**.
- 30. Click Try now.
- 31. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

32. Expand Billing and click Licenses.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser

- 1. In the **search bar** at the top of the Azure Portal, type "vnet".
- 2. In the **search results**, click "**Virtual Networks**" under "Services", the virtual networks page will open
- 3. On the Virtual Networks page, click "**Create**" in the menu bar to start the creation of a new Virtual Network.
- 4. In the "Create Virtual Network wizard" select the **subscription** in which this Virtual Network will reside.



- 5. For the Resource group, select "**Create new**" and fill in the name of the Resource Group, e.g. "rg-p-we-network-01"
- 6. On the Instance details, fill in the **Name** of the Virtual Network, e.g. "vnet-p-we-01".
- 7. Select the **Region** in which the Virtual Network will be created, "West Europe".
- 8. Click **Next: IP Addresses**, to continue to the next tab in the wizard.
- 9. In the **IPv4 address space**, fill in the IP range for this Virtual Network, e.g. 10.0.0.0/24. By default the wizard will propose an IP range. You are able to adjust the range or remove it for the IP ranges for this network by using the recycle bin icon behind the range. Make sure you have an appropriate amount of IP addresses available within the network. How many is dependent on which workloads will land in this virtual network. Proper network planning is just as important for Azure as it is for an on-premises environment.
- 10. Every Virtual Network, needs one or more subnets. The wizard already proposes a default subnet for this network. You are able to adjust the configuration of this subnet by clicking it. You can add more than one subnet at this moment or add more in a later stage. For now we will adjust the default subnet, containing all ipaddresses in the Virtual Network, without a NAT gateway or Service Endpoints selected and give it a name following our naming conventions, e.g. "snet-p-we-01".

NOTE: If the wizard does not propose a default subnet then click on "**Add subnet**" and give the subnet the same range as the IPv4 address space as you added in the previous step.

- 11. Click Next: Security to continue to the next tab in the wizard
- 12. For now a **BastionHost** is not necessary, select "Disable".
- 13. **DDoS Network Protection** is a valuable service to protect resources exposed to the internet. However this also is a more expensive service, so be conscious if the risk is worth the costs. For this lab we will leave the option for DDoS Network Protection disabled.
- 14. In a real-life scenario it is recommended to consider the usage of an <u>Azure Firewall</u> in your Virtual Network. As the focus of the hands-on-lab is on the Azure Virtual Desktop we select "Disable".
- 15. Click **Next: Tags** to continue to the next tab in the wizard
- 16. Optionally add one or more tags to this resource. Tags can be used for all kind of purposes but are mostly configured to associate resources to a cost center to enable the split of costs.
- 17. Click Next: Review + Create to continue to the next tab in the wizard
- 18. Review all selections and if all is well, click **Create** to deploy the Virtual Network and its subnet
- 19. A notification will be displayed when the deployment of the resources has been completed.



10 Prerequisites – Log Analytics workspace

To create an Azure Virtual Desktop environment we first need a Log Analytics workspace. A Log Analytics workspace is a unique environment that logs data from Azure Monitor and other Azure services, such as Azure Virtual Desktop, but it is also used by Microsoft Sentinel and Microsoft Defender for Cloud. Each workspace has its own data repository and configuration but might combine data from multiple services. It is recommended to centralize the usage of Log Analytics workspaces, as the power of the data resides in the ability to combine the data and find correlations. In many SMB Azure environments, only one Log Analytics workspace will be needed within the Azure environment.

10.1 Create a Log Analytics workspace

10.2 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote Desktop client

To be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 25. In the search bar in your Windows task bar, type "Remote Desktop"
- 26. If installed the application will be available in the search results
- 27. Open the application
- 28. Click the ellipses (...) in the right upper hand corner and select **About**
- 29. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 30. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 13. Use the following link to download the Windows 64-bit version of the application.
- 14. Click on the downloaded file to install the application
- 15. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

10.3 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 17. Go to the https://admin.microsoft.com web page.
- 18. Click **Billing** in the Microsoft 365 admin center.
- 19. Under Billing click Purchase Services.
- 20. Search for Microsoft 365 Business Premium.



Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 33. Click **Details**
- 34. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 35. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 36. Provide your verification code and click Start your free trial period.
- 37. Click **Try now**.
- 38. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

39. Expand Billing and click Licenses.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "log".
- 2. In the **search results**, click "**Log Analytics workspaces**" under "Services", the Log Analytics workspaces page will open
- 3. On the Log Analytics workspaces page, click "**Create**" in the menu bar to start the creation of a new Log Analytics workspace.



- 4. In the "Create Log Analytics workspace wizard" select the **subscription** in which this Log Analytics workspace will reside.
- 5. For the Resource group, select "**Create new**" and fill in the name of the Resource Group, e.g. "rg-p-we-management-01"
- 6. On the Instance details, fill in the **Name** of the Log Analytics workspace, e.g. "law-p-we-01".
- 7. Select the **Region** in which the Virtual Network will be created, "West Europe".
- 8. Click **Next: Tags** to continue to the next tab in the wizard
- 9. Optionally add one or more tags to this resource. Tags can be used for all kind of purposes but are mostly configured to associate resources to a cost center to enable the split of costs.
- 10. Click **Next : Review + Create** to continue to the next tab in the wizard
- 11. Review all selections and if all is well, click **Create** to deploy the Log Analytics workspace.
- 12. A notification will be displayed when the deployment of the resource has been completed.

11 Users and groups

When deploying an Azure Virtual Desktop environment this usually is to support a particular set of users within an organization. In a real-life scenario, you will need to investigate which users have what requirements and specifications and then design the solution for the different user types. In this hands-on-lab we assume we will have a user base for a workspace environment and a user base for the availability of specific applications via Azure Virtual Desktop.

In this hands-on-lab, we will create 2 groups of users to represent this user base and grant access to the solution.

11.1 Create users

In this section 3 users will be created which will be used in this hands-on-lab.

- AdeleV
- MeganB
- NestorW

11.2 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

31. In the search bar in your Windows task bar, type "Remote Desktop"



- 32. If installed the application will be available in the search results
- 33. Open the application
- 34. Click the ellipses (...) in the right upper hand corner and select **About**
- 35. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
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- 23. Under Billing click Purchase Services.
- 24. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 40. Click **Details**
- 41. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 42. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 43. Provide your verification code and click **Start your free trial period**.
- 44. Click Try now.
- 45. Click Continue.



You return to the homepage of the Microsoft 365 admin center.

46. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser

- 1. In the **search bar** at the top of the Azure Portal, type "aad".
- 2. In the **search results**, click "**Azure Active Directory**" under "Services", the Azure Active Directory page will open
- 3. On the Azure Active Directory page, in the left hand navigation, under manage, click "**Users**".
- 4. Click New user.
 - a. Username: AdeleV
 - b. Name: Adele Vance
 - c. Configure password: be creative and write the password down
 - d. Uncheck the box that users should update the password on next logon
- 5. Click **Create**.
- 6. Repeat steps 4 and 5 for, Nestor Wilkens & Megan Bowen

11.4 Create groups

In this section 2 groups which will be created which each represent a user base.

- SG-AVD workspace users
- SG-AVD application users

11.5 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.



Check if the application has been installed on your computer:

- 37. In the search bar in your Windows task bar, type "Remote Desktop"
- 38. If installed the application will be available in the search results
- 39. Open the application
- 40. Click the ellipses (...) in the right upper hand corner and select **About**
- 41. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 42. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

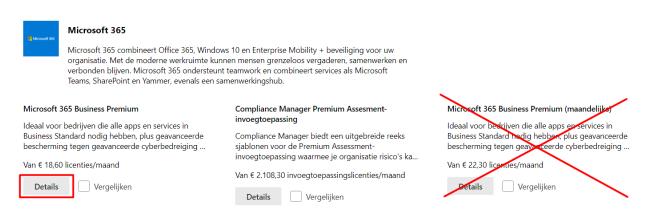
- 19. Use the following link to download the Windows 64-bit version of the application.
- 20. Click on the downloaded file to install the application
- 21. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

11.6 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 25. Go to the https://admin.microsoft.com web page.
- 26. Click Billing in the Microsoft 365 admin center.
- 27. Under Billing click **Purchase Services**.
- 28. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 47. Click **Details**
- 48. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 49. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 50. Provide your verification code and click **Start your free trial period**.



- 51. Click **Try now**.
- 52. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

53. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser.

- 7. In the **search bar** at the top of the Azure Portal, type "aad".
- 8. In the **search results**, click "**Azure Active Directory**" under "Services", the Azure Active Directory page will open
- 9. On the Azure Active Directory page, in the left hand navigation, under manage, click "**Groups**".
- 10. Click **New group**.
- 11. Group type: **Security**

Group name: **SG-AVD workspace users**

Group description: Security group for all users which use the Azure Virtual

Desktop workspace

Azure AD roles can be assigned to the group: **No**

Membership type: Assigned

- 12. Owner: Select yourself as an owner.
- 13. Members: Select the users:

AdeleV

MeganB

- 14. Click **Create**.
- 15. Click **New group** .
- 16. Group type: **Security**

Group name: SG-AVD application users

Group description: Security group for all users which use the Azure Virtual

Desktop applications

Azure AD roles can be assigned to the group: **No**

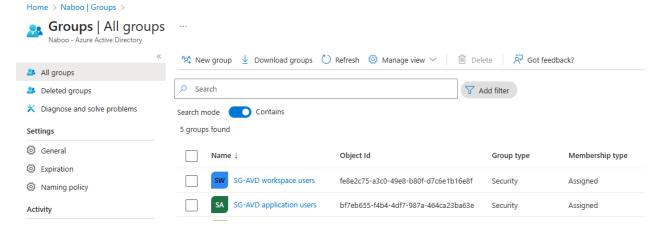


Membership type: Assigned

- 17. Owner: Select yourself as an owner.
- 18. Members: Select the users

MeganB NestorW

- 19. Click Create.
- 20. Click **Refresh** to view the 2 newly created Security groups.



12 Azure Virtual Desktop

12.1 Create a Host pool

12.2 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote Desktop client

To be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 43. In the search bar in your Windows task bar, type "Remote Desktop"
- 44. If installed the application will be available in the search results
- 45. Open the application
- 46. Click the ellipses (...) in the right upper hand corner and select **About**
- 47. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 48. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 22. Use the following link to download the Windows 64-bit version of the application.
- 23. Click on the downloaded file to install the application
- 24. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.



12.3 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 29. Go to the https://admin.microsoft.com web page.
- 30. Click **Billing** in the Microsoft 365 admin center.
- 31. Under Billing click Purchase Services.
- 32. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 54. Click **Details**
- 55. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 56. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 57. Provide your verification code and click **Start your free trial period**.
- 58. Click **Try now**.
- 59. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

60. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Gegevens vereist	
Er wordt gecontroleerd of we u Microsoft-producten en-services kunnen aanbieden. Als u een nieuwe proefperiode wilt starten, moet u een geldig verkocht-aan-adres of registratienummer opgeven voor uw betaalaccount.	
Doorgaan	

Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "avd".
- 2. In the **search results**, click "**Azure Virtual Desktop**" under "Services", the Azure Virtual Desktop page will open.
- 3. On the Azure Virtual Desktop page, click the "**Create a host pool**" button to start the creation of a new Host pool.
- 4. In the "Create a host pool wizard" select the **subscription** in which this Azure Virtual Desktop Host pool will reside.
- 5. For the Resource group, select "**Create new**" and fill in the name of the Resource Group, e.g. "rg-p-we-avd-01".
- 6. On the Instance details, fill in the **Name** of the host pool, e.g. "hp-p-we-01".
- 7. Select the **Region** in which the Virtual Network will be created, "West Europe".
- 8. Validation environment: This setting is used for testing configuration changes ie. a production environment. As this is an initial deployment, Select **No**.
- 9. Preferred app group type: You can choose here whether you want a full Azure Virtual Desktop available to your users on only want to make applications available. In this lab we start with a Azure Virtual desktop, so select **Desktop**.
- 10. Host pool type, in most SMB cases you want users to share the host pool to be as efficient with the resources as possible. In some cases you need dedicated resources for users and in that case you can decide to use a personal host pool. For this hands-on-lab, select **Pooled**.
- 11. Load balancing algorithm, keep the selected **Breadth-first**.
- 12. Max session limit, set to 2 users per session host.
- 13. Click **Next: Virtual Machines** to continue to the next tab in the wizard.
- 14. On the Virtual Machines page in the wizard, there is the ability to configure the Virtual Machines used in the host pool. The advantage of adding the Virtual Machines here is that the Azure Virtual Desktop agent will already be installed on the Virtual Machines. For **Add Azure virtual machines**, select **Yes**.
- 15. Resource group for the virtual machines, keep the default value (displayed already in grey) in which the resource group of the host pool will be used.
- 16. Name prefix, type the prefix which will be used for these virtual machines, e.g. "avd".
- 17. Virtual machine location, select **West Europe**.



- 18. Availability options, select for this hands-on-lab **No infrastructure redundancy required**. In a real-life scenario, this setting will depend on the level of availability necessary. A higher level of availability will impact the costs.
- 19. Security type, select for this hands-on-lab **Standard**. In a real-life scenario, this setting will depend on the level of security the service needs to enforce.
- 20. Image, select the most recent image for this hands-on-lab, Windows 11.
 Enterprise multi-session + M365 Apps, version 22H2.
 Note: Because you have the Microsoft Business Premium licenses in your tenant, the Windows 11 Enterprise license is available to you.
- 21. Select the required Virtual Machine size: e.g. **D4as_v5**. Please note that by default quotas are applied on your Azure tenant, also with regards to the amount of CPUs per region per subscription. In many cases this quota can be adjusted when there is a need for more than the current quota allows. Some quotas can be adjusted by the global administrator of your tenant, but for others a support ticket is needed.
- 22. Number of VMs, type **2** for this hands-on-lab.
- 23. OS disk type, keep the preselected **Standard SSD**.
- 24. Boot diagnostics, for this hands-on-lab, select **Disable**.
- 25. Virtual Network, select here the Virtual Network created in paragraph 9.1 Create an Azure Virtual Network.
- 26. Subnet, select here the subnet created in paragraph 9.1 Create an Azure Virtual Network.
- 27. Network Security Group, for this hands-on-lab, select **None**. In a real-life scenario, plan for security using Network Security Groups, Firewalls etcetera.
- 28. Select which directory you would like to join, select **Azure Active Directory**.
- 29. Enroll VM in Intune, for this hands-on-lab, select **No**, in a real-life scenario enrolling the VMs in Intune is a cloud native way to manage these devices.
- 30. Fill in your own Virtual Machine Administrator account and password, e.g. account avdadmin and make a note of the username and password.
- 31. Custom Configuration script URL, is not applicable for this hands-on-lab.
- 32. Click **Next : Workspace** to continue to the next tab in the wizard.
- 33. On the workspace page, select **Yes** for Register desktop app group.
- 34. To this workspace, click **Create new** and type a name, e.g. wsp-p-we-01
- 35. Click **Next: Advanced** to continue to the next tab in the wizard.
- 36. Enable diagnostic settings, for this hands-on-lab, keep the box **unchecked**. In a real-life scenario these diagnostics logs can be stored in the Log Analytics workspace. However you need to be aware that data that you store will have a cost associated with that.
- 37. Click **Next: Tags** to continue to the next tab in the wizard.
- 38. Optionally add one or more tags to this resource. Tags can be used for all kind of purposes but are mostly configured to associate resources to a cost center to enable the split of costs.
- 39. Click Next: Review + Create to continue to the next tab in the wizard



- 40. Review all selections and if all is well, click **Create** to deploy the host pool, Virtual Machines and workspace.
- 41. A notification will be displayed when the deployment of the resources has been completed. **Please wait until the deployment succeeds before moving to the next step.**

12.4 Configure the Application group for the workspace

An application group can be used to assign users and/or groups to workspaces.

12.5 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote Deskton client

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 49. In the search bar in your Windows task bar, type "Remote Desktop"
- 50. If installed the application will be available in the search results
- 51. Open the application
- 52. Click the ellipses (...) in the right upper hand corner and select **About**
- 53. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 54. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 25. Use the following link to download the Windows 64-bit version of the application.
- 26. Click on the downloaded file to install the application
- 27. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

12.6 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 33. Go to the https://admin.microsoft.com web page.
- 34. Click **Billing** in the Microsoft 365 admin center.
- 35. Under Billing click Purchase Services.
- 36. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.





- 61. Click **Details**
- 62. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 63. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 64. Provide your verification code and click **Start your free trial period**.
- 65. Click Try now.
- 66. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

67. Expand Billing and click Licenses.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.

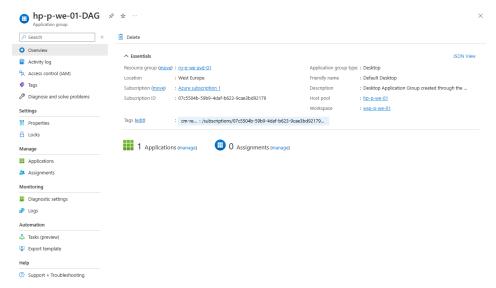


Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "avd".
- 2. In the **search results**, click "**Azure Virtual Desktop**" under "Services", the Azure Virtual Desktop page will open.
- 3. On the Azure Virtual Desktop page, in the left hand navigation click "**Application groups**" under Manage.
- 4. See that the creation of the host pool also created a matching application group named <host pool name>-DAG. Click on this resource.



5. In the middle of the page you see that one applications is part of the application group and this application group has no assignments for now.



- 6. Click on the **(manage)** link under Applications in the middle of the page and see that the Desktop is available in this Application group.
- 7. Click the X icon in the upper right corner to close the page and go back to the Application group page.
- 8. Click on the **(manage)** link under Assignments in the middle of the page and see that no users or groups have been assigned to this Application group.
- 9. Click Add.
- 10. Search for the **SG-AVD workspace users** group, select the group and confirm the selection by clicking the **Select** button at the bottom of the page.
- 11. Click the X icon in the upper right corner to close the page and go back to the Assignments page.
- 12. Click the X icon in the upper right corner to close the page and go back to the Application group page.

12.7 Create an Application group for Azure Virtual Desktop Applications

You can also publish an (line of business) application instead of a full desktop for specific users. To configure this we will create a new Application group. After the creation of the new Application Group, it will be associated with the existing "wsp-p-we-01" resource.

12.8 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

55. In the search bar in your Windows task bar, type "Remote Desktop"



- 56. If installed the application will be available in the search results
- 57. Open the application
- 58. Click the ellipses (...) in the right upper hand corner and select **About**
- 59. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 60. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 28. Use the following link to download the Windows 64-bit version of the application.
- 29. Click on the downloaded file to install the application
- 30. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

12.9 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 37. Go to the https://admin.microsoft.com web page.
- 38. Click **Billing** in the Microsoft 365 admin center.
- 39. Under Billing click Purchase Services.
- 40. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 68. Click **Details**
- 69. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 70. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 71. Provide your verification code and click **Start your free trial period**.
- 72. Click **Try now**.
- 73. Click **Continue**.



You return to the homepage of the Microsoft 365 admin center.

74. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "avd".
- 2. In the **search results**, click "**Azure Virtual Desktop**" under "Services", the Azure Virtual Desktop page will open.
- 3. On the Azure Virtual Desktop page, in the left hand navigation click "**Application groups**" under Manage.
- 4. Click Create.
- 5. In the "Create an application group" wizard select the **subscription** in which this Azure Virtual Desktop Application Group will reside.
- 6. For the Resource group, select the Resources group newly created in 12.1, Create a Host pool", e.g. "rg-p-we-avd-01".
- 7. For the Host pool, select the Host pool newly created in 12.1, Create a Host pool", e.g. hp-p-we-avd-01. After the selection the Location will be prefilled and cannot be adjusted.
- 8. For Application group type, select **Remote App (RAIL)**.
- 9. For Application group type, add the abbreviation AAG (For Applications Application Group) to the host pool name to be consistent with the naming of the Desktop Application Group, e.g. "hp-p-we-avd-01-AAG".
- 10. Click **Next**: **Applications** to continue to the next tab in the wizard.
- 11. On the Applications in the wizard, there is the ability to add Applications, click +Add applications link to select applications.

Note: Under **Application Source** you can select the option Start Menu, File path or MSIX Packadge for various scenarios. For this lab we focus on Start Menu applications.



- 12. Select some of the M365 Apps (at least Word), by selecting the app and to confirm using the Save button at the bottom of the page. Repeat step 11-12 for all apps you want to include.
- 13. Click **Next**: **Assignments** to continue to the next tab in the wizard.
- 14. On the Assignments tab in the wizard, click the **+ Add Azure AD users or user groups** link.
- 15. Search for the **SG-AVD application users** group, select the group and confirm the selection by clicking the **Select** button at the bottom of the page.
- 16. Click the X icon in the upper right corner to close the page and go back to the Assignments page.
- 17. Click **Next: Workspace** to continue to the next tab in the wizard.
- 18. Set Register application group to **Yes**, the Workspace name will be prefilled as there can only be one Workspace been registered per Azure Virtual Desktop host pool.
- 19. Click **Next: Advanced** to continue to the next tab in the wizard.
- 42. On the Advanced tab in the wizard, you can enable diagnostic settings. For this hands-on-lab, keep the box **unchecked**. In a real-life scenario these diagnostics logs can be stored in the Log Analytics workspace. But be conscious of what to log as the amount of data has cost impact.
- 43. Click **Next**: **Tags** to continue to the next tab in the wizard.
- 44. Optionally add one or more tags to this resource. Tags can be used for all kind of purposes but are mostly configured to associate resources to a cost center to enable the split of costs.
- 45. Click **Next**: **Review** + **Create** to continue to the next tab in the wizard.
- 46. Review all selections and if all is well, click **Create** to deploy the Application group.
- 47. A notification will be displayed when the deployment of the resource has been completed.

12.10 Check the Workspace settings

In the previous section in this chapter, we've created and added Application groups to the Azure Virtual Desktop Workspace. In this section, just for reference we'll look into the settings of the Azure Virtual Desktop Workspace, named wsp-p-we-01 associated with the Azure Virtual Desktop host pool.

12.11 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

61. In the search bar in your Windows task bar, type "Remote Desktop"



- 62. If installed the application will be available in the search results
- 63. Open the application
- 64. Click the ellipses (...) in the right upper hand corner and select **About**
- 65. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 66. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 31. Use the following link to download the Windows 64-bit version of the application.
- 32. Click on the downloaded file to install the application
- 33. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

12.12 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 41. Go to the https://admin.microsoft.com web page.
- 42. Click **Billing** in the Microsoft 365 admin center.
- 43. Under Billing click Purchase Services.
- 44. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 75. Click **Details**
- 76. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 77. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 78. Provide your verification code and click **Start your free trial period**.
- 79. Click **Try now**.
- 80. Click Continue.



You return to the homepage of the Microsoft 365 admin center.

81. Expand Billing and click Licenses.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "avd".
- 2. In the **search results**, click "**Azure Virtual Desktop**" under "Services", the Azure Virtual Desktop page will open.
- 3. On the Azure Virtual Desktop page, in the left hand navigation click "**Workspaces**" under Manage.
- 4. Click on the wsp-p-we-01 resource, the wsp-p-we-01 page opens.
- 5. On the Workspace page, in the left hand navigation click "**Application groups**" under Manage.
- 6. Note that the 2 Application groups (DAG and AAG) are associated with this workspace.

13 Additional configuration for Azure Active Directory Azure Virtual Desktop

To support Azure Virtual Desktop with Azure Active Directory as authentication provider without any Directory Services some additional configuration is needed. This chapter describes these additional configuration items.

- Host pool configuration
- Permissions on the Virtual Machine
- Active Directory joined hosts
- User licensing
- Conditional Access policy exception



13.1 Host pool configuration

In the Host pool properties, the RDP properties need to be set to use Azure Active Directory to sign in for RDP.

13.2 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 67. In the search bar in your Windows task bar, type "Remote Desktop"
- 68. If installed the application will be available in the search results
- 69. Open the application
- 70. Click the ellipses (...) in the right upper hand corner and select **About**
- 71. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 72. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 34. Use the following link to download the Windows 64-bit version of the application.
- 35. Click on the downloaded file to install the application
- 36. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

13.3 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 45. Go to the https://admin.microsoft.com web page.
- 46. Click **Billing** in the Microsoft 365 admin center.
- 47. Under Billing click Purchase Services.
- 48. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.





- 82. Click **Details**
- 83. On the Microsoft 365 Business Premium page click Start free trial version.
- 84. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 85. Provide your verification code and click **Start your free trial period**.
- 86. Click Try now.
- 87. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

88. Expand Billing and click Licenses.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "avd".
- 2. In the **search results**, click "**Azure Virtual Desktop**" under "Services", the Azure Virtual Desktop page will open.
- 3. On the Azure Virtual Desktop page, in the left hand navigation click "**Host pools**" under Manage.
- 4. On the Azure Virtual Desktop page, click on the host pool created in 12.1
- 5. Click **RDP Properties** in the left hand navigation under Settings.



- 6. On the Connection information tab, set the Azure AD authentication from "Not configured" to "Connections will use Azure AD authentication to provide Single sign-on".
- Leave the next option "Credential Security Support Provider" to the default "RDP will use CredSSP if the operating system supports CredSSP"
- 8. Check the options available under the tabs "Session behaviour", "Device Redirection", "Display Settings" and "Advanced".
- 9. Leave all other options as is;
- 10. Click **Save** to confirm the new setting.

13.4 Permissions on the Virtual Machines & AADJoined check

As Azure Active Directory is used as authentication and authorization provider, the users who will use the Azure Virtual Desktop Virtual Machines need permissions to logon to these Virtual Machines. The minimal set of permissions needed for is the "Virtual Machine User Login" role.

The following instructions on assigning permissions to the Virtual Machines in the host pools needs to be performed for every Azure Virtual Desktop Virtual Machine.

Next to this the Virtual Machines need to be Azure Active Directory joined, as this configuration check has to be performed on every Virtual Machine, these steps will be combined to reduce clicking in the Azure Portal.

13.5 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 73. In the search bar in your Windows task bar, type "Remote Desktop"
- 74. If installed the application will be available in the search results
- 75. Open the application
- 76. Click the ellipses (...) in the right upper hand corner and select **About**
- 77. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 78. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 37. Use the following link to download the Windows 64-bit version of the application.
- 38. Click on the downloaded file to install the application



39. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

13.6 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 49. Go to the https://admin.microsoft.com web page.
- 50. Click **Billing** in the Microsoft 365 admin center.
- 51. Under Billing click Purchase Services.
- 52. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 89. Click **Details**
- 90. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 91. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 92. Provide your verification code and click **Start your free trial period**.
- 93. Click Try now.
- 94. Click Continue.

You return to the homepage of the Microsoft 365 admin center.

95. Expand Billing and click Licenses.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.





Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "avd".
- 2. In the **search results**, click "**Azure Virtual Desktop**" under "Services", the Azure Virtual Desktop page will open.
- 3. On the Azure Virtual Desktop page, in the left hand navigation click "**Host pools**" under Manage.
- 4. On the Azure Virtual Desktop page, click on the host pool created in 12.1
- 5. Under Virtual Machines in the middle of the page, Click on **Total machines**, a screen with an overview of the Virtual Machines in the host pool is displayed.
- 7. On the summary page, **click again on the name of the Virtual Machine**, which leads you to its homepage.
- 8. Click **Access Control (IAM)** in the left hand navigation.
- 9. Click on the "Add" button and choose "Add role assignment"
- 10. On the Add role assignment wizard, search for the **Virtual Machine User login** role, select this role and click **Next**.
- 11. On the Members tab, keep Assign Access to on User, group, or service principal
- 12. Click + Select members.

13.7 Search for "SG-AVD" this will retrieve both AVD related groups created in section 11.1, Create users

In this section 3 users will be created which will be used in this hands-on-lab.

- AdeleV
- MeganB
- NestorW

13.8 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote Desktop client

To be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

79. In the search bar in your Windows task bar, type "Remote Desktop"



- 80. If installed the application will be available in the search results
- 81. Open the application
- 82. Click the ellipses (...) in the right upper hand corner and select **About**
- 83. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 84. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 40. Use the following link to download the Windows 64-bit version of the application.
- 41. Click on the downloaded file to install the application
- 42. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

13.9 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 53. Go to the https://admin.microsoft.com web page.
- 54. Click **Billing** in the Microsoft 365 admin center.
- 55. Under Billing click Purchase Services.
- 56. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 96. Click **Details**
- 97. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 98. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 99. Provide your verification code and click **Start your free trial period**.
- 100. Click **Try now**.
- 101. Click **Continue**.



You return to the homepage of the Microsoft 365 admin center.

102. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

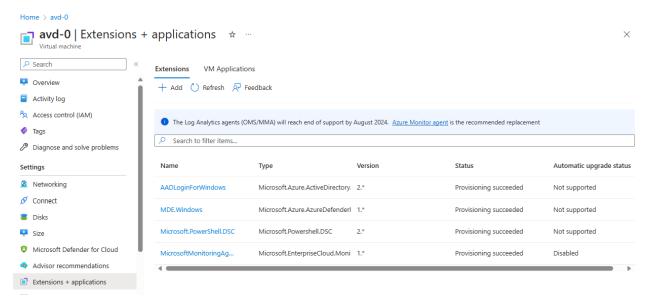
Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.



Add the Admin account to the Edge Browser

- 21. In the **search bar** at the top of the Azure Portal, type "aad".
- 22. In the **search results**, click "**Azure Active Directory**" under "Services", the Azure Active Directory page will open
- 23. On the Azure Active Directory page, in the left hand navigation, under manage, click "**Users**".
- 24. Click New user.
 - a. Username: AdeleV
 - b. Name: Adele Vance
 - c. Configure password: be creative and write the password down
 - d. Uncheck the box that users should update the password on next logon
- 25. Click Create.
- 26. Repeat steps 4 and 5 for, Nestor Wilkens & Megan Bowen
- 13. Create groups. Select both **groups** and confirm by clicking the **Select**-button at the bottom of the page.
- 14. Click Next.
- 15. Click the **Review + assign** button.
- 16. A notification will be displayed when the assignments have been completed.
- 17. Click **Extensions** + applications in the left-hand navigation under Settings.
- 18. Check or the AADLoginforWindows extension is available.
- 19. Repeat steps 5 18 for every other Virtual Machine in the host pool.





In case the installation of the Virtual Machine extension has failed, use the following link <u>Troubleshoot deployment problems</u>.

13.10 Assign licenses

Although it is possible to assign licenses to individuals, it is easier to assign the licenses to a group. In this hands-on-lab we will assign the license for the usage of Windows Enterprise to the groups "SG-AVD workspace users" and "SG-AVD application users".

13.11 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 85. In the search bar in your Windows task bar, type "Remote Desktop"
- 86. If installed the application will be available in the search results
- 87. Open the application
- 88. Click the ellipses (...) in the right upper hand corner and select **About**
- 89. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 90. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

- 43. Use the following link to download the Windows 64-bit version of the application.
- 44. Click on the downloaded file to install the application
- 45. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.



13.12 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 57. Go to the https://admin.microsoft.com web page.
- 58. Click **Billing** in the Microsoft 365 admin center.
- 59. Under Billing click **Purchase Services**.
- 60. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 103. Click **Details**
- 104. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 105. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 106. Provide your verification code and click **Start your free trial period**.
- 107. Click **Try now**.
- 108. Click **Continue**.

You return to the homepage of the Microsoft 365 admin center.

109. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.





Add the Admin account to the Edge Browser.

- 1. In the **search bar** at the top of the Azure Portal, type "aad".
- 2. In the **search results**, click "**Azure Active Directory**" under "Services", the Azure Active Directory page will open.
- 3. On the Azure Active Directory page, in the left hand navigation, under manage, click "**Groups**".
- 4. Click **SG- AVD workspace users**.
- 5. In the left hand navigation, under manage, click **Licenses**.
- 6. Click **Assignments** in the top menu bar.
- 7. Select Windows 10/11 Enterprise.
- 8. Click Save.
- 9. Click twice on the X icon in the upper right corner.
- 10. Repeat step 4-9 voor **SG-AVD application users**.

13.13 Conditional Access policy exception

13.14 Go to the Azure Portal (https://portal.azure.com) using the Edge browser profile attached to your administrator account as created in paragraph 7.1 Remote

Desktop clientTo be able to connect to the Azure Virtual Desktop as a user, the Remote Desktop client needs to be installed on your computer.

Check if the application has been installed on your computer:

- 91. In the search bar in your Windows task bar, type "Remote Desktop"
- 92. If installed the application will be available in the search results
- 93. Open the application
- 94. Click the ellipses (...) in the right upper hand corner and select **About**
- 95. Check the version number of your application, this should be 1.2.4240.0 or higher. There should as well be a green checkmark with the text "You're up to date".
- 96. If you are up to date, no further action is necessary, if not please follow the next steps to install the correct Remote Desktop application

Install the Remote Desktop application:

46. Use the following link to download the Windows 64-bit version of the application.



- 47. Click on the downloaded file to install the application
- 48. After the install, follow the steps in the previous paragraph, to ensure the application installed successfully.

13.15 Add Microsoft Business Premium Licenses

Time to add the Microsoft 365 Business Premium-licenses to the tenant. These licenses are trial licenses and can be used for a one-month period.

- 61. Go to the https://admin.microsoft.com web page.
- 62. Click **Billing** in the Microsoft 365 admin center.
- 63. Under Billing click Purchase Services.
- 64. Search for Microsoft 365 Business Premium.

Note: There are different offerings Microsoft 365. Please select the **Microsoft 365 Business Premium**. Make sure not to select the (month to month) offering.



- 110. Click **Details**
- 111. On the Microsoft 365 Business Premium page click **Start free trial version**.
- 112. Prove you are not a robot by providing your cell phone number. Click **Sms me**.
- 113. Provide your verification code and click **Start your free trial period**.
- 114. Click **Try now**.
- 115. Click **Continue**.

You return to the homepage of the Microsoft 365 admin center.

116. Expand **Billing** and click **Licenses**.

Check or the Microsoft 365 Business Premium licenses are available to you

Note: In case the following message will appear, click **Continue** and take a close look the steps in this section.





Add the Admin account to the Edge Browser.

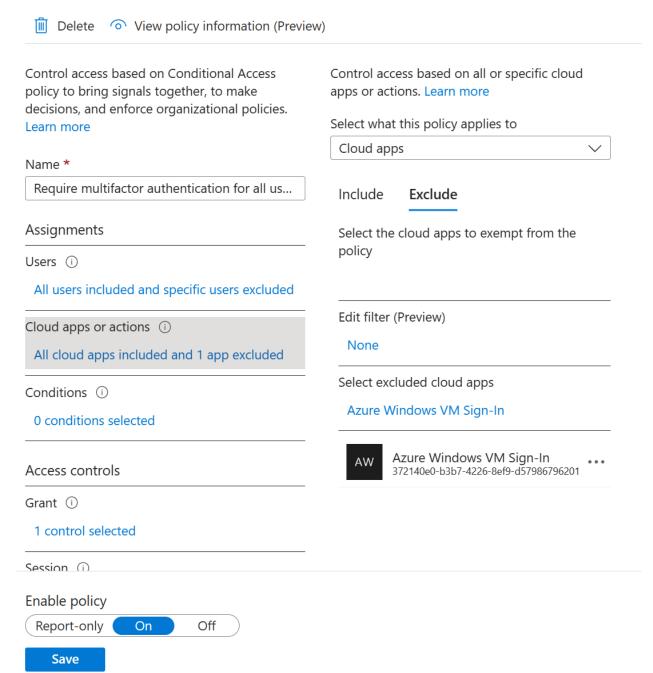
- 1. In the **search bar** at the top of the Azure Portal, type "aad".
- 2. In the **search results**, click "**Azure Active Directory**" under "Services", the Azure Active Directory page will open.
- 3. On the Azure Active Directory page, in the left hand navigation, under manage, click **Security**.
- 4. On the Security page, in the left hand navigation, under Protect, click **Conditional Access**.
- 5. On the **Conditional Access** page, click **Policies** in the left hand menu.
- 6. Click the policy **MFA for users** created in 8.7, Conditional access enforce MFA for all users, to adjust the policy.
- 7. On the Assignments>Cloud apps or actions, click **All cloud apps**.
- 8. On the **Exclude** tab, on the Select excluded cloud apps click **None**.
- 9. In the search bar, type Azure Windows VM Sign-In.
- 19. Select this Azure Windows VM Sign-In app. Confirm at the bottom, click Select.
- 20. Click Save.



Home > Naboo | Security > Security | Conditional Access > Conditional Access | Policies >

Require multifactor authentication for all users

Conditional Access policy



14 Azure Virtual Desktop workspace

The Azure Virtual Desktop environment for the workspace is now available and can be used. This chapter will test the workspace functionality.

The user used to login cannot be a Guest user in the Azure Active Directory tenant and needs to have MFA setup to be able to access the workspace.



Make sure you performed section 7.1, Remote Desktop client before attempting to start this chapter.

14.1 Connect to the Azure Virtual Desktop environment with the Remote Desktop application

- 1. In the search bar in your Windows task bar, type "Remote Desktop".
- 2. Open the application.
- Click the ellipses (...) in the right upper hand corner and select **Subscribe.** If you want to use the **Subscribe with URL**, use the following URL https://rdweb.wvd.microsoft.com.
- 4. Fill in the email address of the user AlexW and sign in.
- 5. As AlexW is member of only the SG-AVD workspace users group, he will only see the Workspace being available. Open the desktop and see a desktop available for this user while logging in with Azure Active Directory credentials.
- 6. Click the ellipses (...) in the right upper hand corner and select **Subscribe.** If you want to use the **Subscribe with URL**, use the following URL https://rdweb.wvd.microsoft.com.
- 7. Fill in the email address of the user MiriamG and sign in.
- 8. As MiriamG is member of only the SG-AVD applications users group, she will only see the Applications (at least Word) being available. Open the Word application and see the app available for this user while logging in with Azure Active Directory credentials.
- Click the ellipses (...) in the right upper hand corner and select **Subscribe.** If you want to use the **Subscribe with URL**, use the following URL https://rdweb.wvd.microsoft.com.
- 10. Fill in the email address of the user MeganB and sign in.
- 11. As MeganB is member of both SG-AVD users group, she will see as well the the Applications (at least Word) as the Desktop being available. Open the Word application and see the app available for this user while logging in with Azure Active Directory credentials.. Open the desktop and see a desktop available for this user while logging in with Azure Active Directory credentials.

14.2 Connect to the Azure Virtual Desktop environment with the browser

- 1. Open an InPrivate browser session in Microsoft Edge.
- 2. Open the following URL Remote Desktop Web Client (microsoft.com)
- 3. Login with the email address of the user AdeleV and sign in.
- 4. As AdeleV is member of only the SG-AVD workspace users group, he will only see the Workspace being available. Open the desktop and see a desktop available for this user while logging in with Azure Active Directory credentials.



- 5. Close the browser and open a new InPrivate browser session in Microsoft Edge.
- 6. Login with the email address of the user MarianG and sign in.
- 7. As MiriamG is member of only the SG-AVD application users group, she will only see the Applications (at least Word) being available. Open the Word application and see the app available for this user while logging in with Azure Active Directory credentials.
- 8. Close the browser and open a new InPrivate browser session in Microsoft Edge.
- 9. Login with the email address of the user MeganB and sign in.
- 10. As MeganB is member of both SG-AVD users group, she will see as well the the Applications (at least Word) as the Desktop being available. Open the Word application and see the app available for this user while logging in with Azure Active Directory credentials.. Open the desktop and see a desktop available for this user while logging in with Azure Active Directory credentials.



15 Best Practice 1: Scale the host pool for demand

To only pay for the resources needed, make sure you scale your host pool.

Create an autoscale scaling plan for Azure Virtual Desktop | Microsoft Learn

16 Best Practice 2: Hybrid Scenarios

17 Appendix 1 – Language settings

17.1 Language settings in the Azure portal

In the Azure (Active Directory) portal in the upper right hand corner, click on the clog icon. Go to Language and region settings. Select here your preferred language and the regional settings.



18 Appendix 2 – Resources

Azure Virtual Desktop documentation | Microsoft Learn