Lab 2: Create a Secure Azure App Service

Objective

1. Create an Azure App Service.
2. Create an Azure Key Vault
3. Upload the certificate in Azure Key Vault
4. Configure custom domain in App Service
5. Enable TLS on the custom domain.

Note:

1. All the steps are to be done within Azure Portal.
2. There will be breakout rooms assigned and each room will have a group number [1-5]
3. Login into Azure Portal
    a. Go to https://portal.azure.com
    b. Login with the supplied credentials (username and password).
        i. Each group has a unique integer for their login [1-5] eg. usergroup[1-5]
        ii. For example, group number 5 will have
            1. Username: usergroup5@makecloudwork.com
            2. Password: will be provided during the class.
    c. You will then see the landing Azure homepage. Dismiss any popups/message boxes

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It's important that you enter all the resource names same as mentioned.

Section 1: Create an Azure App Service

Steps

1. Login into Azure Portal
2. Type **"App service"** on the search bar and select **"App Services"** from the drop down. You will be redirected to **"App Services"** page.
3. Click on **"+Create"** button
4. **Basics Tab**
    a. Resource group: Select from the drop down.
    b. Give the Web App name as "**demowebappsb"+"group number".** Add your group number as suffix e.g. if your group number is 4, name the resource as **"demowebappsb4"**
    c. Publish: Select **"Docker Container"**

d. Operating System: Select **"Linux"**
e. Region: Choose **"East US"**
f. App Service Plan
    i. Accept the default App Service plan name
    ii. SKU and size: Ensure that it's **"Premium V2 P1v2"** otherwise click on Change size and select the mentioned Sku.
g. Zone redundancy: Select the default **"Disabled"**
h. Click on **"Next : Docker"**

5. **Docker Tab**
    a. Options: Select **"Single Container"**
    b. Image Source: Select **"Quick start"**
    c. Sample: Select **"NGINX"**
    d. Leave all the other defaults and click on **"Review + create"**
6. **Review+Create Tab**
    a. Let the validation run and pass.
    b. Click on **"Create"** and wait for the deployment to complete
        c. Click on **"Go to resource"**. This will take you to the overview page of the newly created Web App Resource

Observations

1. Check the URL (https://demowebappsb[1-5].azurewebsites.net) on the overview menu and click on it to go the default page.

Section 2: Create a Key Vault

Steps

1. Login into Azure Portal
2. Type **"Key Vault"** on the search bar and select **"Key Vaults"** from the drop down. You will be redirected to **"Key Vaults"** page.
3. Click on **"+Create"** button
4. **Basics Tab**
    a. Select the resource group from the dropdown.
    b. Give unique name to Key vault name as **"keyvaultsb"+"group number"** add your group number as suffix e.g. if your group number is 4, name the key vault as **"keyvaultsb4" .**
    c. Region: Select **"East US"**
    d. Pricing Tier: Select **"Standard"**
    e. Days to retain deleted vaults: Enter **"7"**
    f. Click on **"Next: Access policy"**
5. **Access policy Tab**
    a. Under Current Access Policies, check the default
        i. Key Permissions
        ii. Secret Permissions
        iii. Certificate Permissions

    b. Don't change the other defaults and click on **"Review + create"**
6. **Review+Create Tab**
    a. Let the validation run and pass.
    b. Click on **"Create"** and wait for the deployment to complete
    c. Click on **"Go to resource"**. This will take you to the overview page of the newly created Key Vault
7. Click on **Secrets** under Settings
8. Click on **"+Generate/import"**
    a. Upload Options: "Manual"
    b. Name: "secretname"
    c. Value: "*Any value that you want*"
    d. Leave the other defaults and click on create.
9. You will see the secret created and with the status as enabled.
10. Click on **"secretname"** and again click on the current version.
11. Click on **"Show Secret Value"** to reveal the secret value.

Section 3: Upload the certificate in Azure Key Vault

Steps

1. Login into Azure Portal
2. Type **"Key Vault"** on the search bar and select **"Key Vaults"** from the drop down. You will be redirected to **"Key Vaults"** page.
3. Select the newly created Key Vault
4. Click on **Certificates** under Settings
5. Click on **"+Generate/import"**
    a. Method of Certificate Creation: **"Import"**
    b. Certificate Name: Enter **"app[1-5]cert"** eg. if your group number is 4, then give the name as "app4cert"
    c. Upload Certificate File: From the Github repo, download the cert file with the same name as above and upload it on Azure portal.
        i. Github Repo: https://github.com/AshMinDI/SecureAzureApps
    d. Password: Enter **"Welcome123"**
6. Click on **"Create"**
7. You will see the certificate under the Completed section with status as Enabled.

Section 4: Configure custom domain in App Service

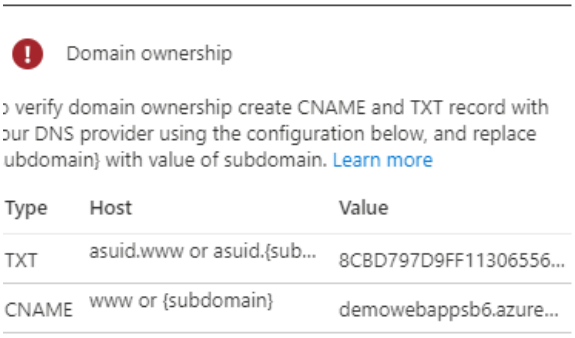
Steps

1. Login into Azure Portal

2. Type **“App service”** on the search bar and select **“App Services”** from the drop down. You will be redirected to **“App Services”** page.
3. Select the newly created App Service
4. Click on **“Custom Domains”** under Settings
5. Click on **“+ Add custom domain”**
    a. Under Custom domain: Enter **“app[1-5].makecloudwork.com”.** For example if you group number is 4 then enter “app4.makecloudwork.com”

    ENSURE THAT YOU ENTER THE DOMAIN NAME EXACTLY AS MENTIONED.

6. Click on **“Validate”**
7. CNAME configuration -> Domain Ownership, copy both the TXT and CNAME values and **provide them back to me** in the chat so that I can add that to the DNS manager for domain “makecloudwork.com”



8. After few mins, click on Validate again and you should see the green check for **“Hostname availability”** and **“Domain ownership”**.
9. Click on **“Add custom domain”**
10. Click on “Refresh” and you will see the new domain added.

Section 5: Enable TLS on the custom domain

Steps

1. Within your App Service, under Settings, click on **“TLS/SSL settings”**
2. Select **“Private Key Certificates (.pfx)”** from the top options.
3. Click on **“+ Import Key Vault Certificate”**
    a. Key Vault: Select the existing key vault**.**
    b. Certificate: Select the certificate from the drop down. The cert name would be the same as the one you have uploaded in earlier section.
4. Click on **“Select”**
5. Select **“Bindings”** from the top options.
6. Ensure that HTTPS Only is **“On”**
7. Ensure that the minimum TLS version is **“1.2”**
8. Click on **“+ Add TLS/SSL Binding”**
    a. Custom domain: Select the one in the dropdown**.**
    b. Private Certificate Thumbprint: Select from the drop down.
    c. TLS/SSL Type: Select **“SNI SSL”**
9. Click on “**Add Binding”**

Observations

1. Check the changed URL (https://app[1-5].makecloudwork.com) on the overview menu for App Service and click on it to go the default page.
2. Open Browser and enter http://app[1-5].makecloudwork.com to be redirected to https
3. Open https://www.ssllabs.com/ssltest/ and enter the URL under Hostname and click on submit. Verify the results

End of Lab.