# Module 8: Implementing PaaS cloud services

# Lab: Implementing PaaS cloud services

### Scenario

You want to evaluate the capabilities of PaaS cloud services to host A. Datum web applications. Your development team has provided a simple cloud service project that you can use to test its functionality in Azure. You want to show how staging and production slots can be used to simplify the deployment of new versions of the cloud service. You also want to determine whether you can monitor the service to get clear information on resource usage.

### Objectives

At the end of this lab, you will be able to:

* Configure and deploy a PaaS cloud service to Azure.
* Deploy a PaaS cloud service for staging and enable Remote Desktop Protocol (RDP) access.
* Configure metrics and alerts to monitor PaaS cloud service behavior.

### Lab Setup

Estimated Time: 60 minutes

Virtual machine: **20533C-MIA-CL1**

User name: **Student**

Password: **Pa$$w0rd**

## Exercise 1: Deploying a PaaS cloud service

### Scenario

You have been asked to test the deployment of the sample PaaS cloud service to Azure.

The main tasks for this exercise are as follows:

1. Create a linked resource for a PaaS cloud service
2. Configure the service definition file
3. Deploy the PaaS cloud service

#### Task 1: Create a linked resource for a PaaS cloud service

1. Sign in to the MIA-CL1 lab virtual machine as **Student** with the password **Pa$$w0rd**
2. Start Windows PowerShell as an Administrator.
3. Sign in to your Azure subscription from the Windows PowerShell window.
4. Identify the Azure region closest to your location, where you can create a storage account and a SQL database.
5. From the Windows PowerShell session, create a new Azure SQL Database server. Set the name of the Administrator account to match your name. Set the password to **Pa$$w0rd.** Set the location to the Azure region you identified in the previous step.
6. From the Azure portal, create a new Azure SQL Database named **CloudServiceProdDB** on the newly created server. Use the default settings.
7. From the Windows PowerShell session, create a new IaaS V1 storage account with default settings. Name the account **cloudappprod *xxx***, where *xxx* is a unique sequence of characters (digits or lowercase letters). Use the same region you identified in step 4.

#### Task 2: Configure the service definition file

1. Launch Visual Studio 2015, and then open the **ServiceConfiguration.Cloud.cscfg** file located in **D:08\*\*** Package.\*\*
2. In the file, set the **Instance count** attribute for the **AdatumAdsWebRole** and **AdatumAdsWorkerRole** roles to **2**.
3. Launch Internet Explorer, and then sign in to the Azure classic portal with the service administrator account of your Azure subscription.
4. Locate the storage account created in the previous task, and then copy its Primary Access Key to the Clipboard.
5. Switch back to Visual Studio, and then replace every occurrence of the following string.

UseDevelopmentStorage=true

Use the following string (on a single line) as the replacement.

DefaultEndPointsProtocol=https; AccountName=cloudappprodxxx;AccountKey=keyvalue

In the replacement, **cloudappprod***xxx*\*\*\*\*is the name of the storage account you created in the previous task, and *keyvalue*\*\*\*\*is the Primary Access Key you copied to the Clipboard

1. Launch Internet Explorer, and then sign in to the Azure portal with the service administrator account of your Azure subscription.
2. Identify the ADO.NET connection string for the **CloudServiceProdDB** SQL database you created in the first task of this exercise.
3. Copy the connection string to the Clipboard.
4. Locate the value of the **Microsoft.WindowsAzure.Plugins.Diagnostics.ConnectionString** element of the **AdatumAdsWebRole** role in the **ServiceConfiguration.Cloud.cscfg** file.
5. Replace the file of the **Microsoft.WindowsAzure.Plugins.Diagnostics.ConnectionString** element with the ADO.NET connection string copied to the Clipboard.
6. In the connection string you just pasted, locate the text **{your\_password\_here}**.
7. Delete the located text, and then replace it with **Pa$$w0rd**.
8. Save **ServiceConfiguration.Cloud.cscfg**.

#### Task 3: Deploy the PaaS cloud service

1. From the Azure classic portal, create a new, PaaS cloud service in the same region you identified in the first task of this lab. Set the name to that of the cloud service matching your name, followed by today's date in the MMDDYY format. Use the **Deploy a cloud service package** option.
2. Set the production deployment name to AdatumAdsProd.
3. Upload the package AdatumAds.cspkg from D:08.
4. Upload the configuration file ServiceConfiguration.Cloud.cscfg from D:08.
5. Wait for the deployment to take effect.

**Note:** The deployment process for the PaaS cloud service can take several minutes to complete. Watch the **cloud services** page. Wait for the **Service Status** column to display **Created** and the **Production** column to display **Running** before you continue to the next task.

**Result**: You created a storage account and a SQL database, edited the service configuration file, and deployed the cloud service to the production slot.

## Exercise 2: Configuring deployment slots and RDP

### Scenario

The development team has provided a second version of the PaaS cloud service you deployed. You want to determine how you can use deployment slots to stage and deploy new versions of cloud services. You will use the same configuration you used for the production service.

The main tasks for this exercise are as follows:

1. Perform a staged deployment of a PaaS cloud service
2. Configure RDP access
3. Test connectivity

#### Task 1: Perform a staged deployment of a PaaS cloud service

1. From the Azure classic portal, add a new staging deployment to the newly created PaaS cloud service by uploading package and configuration files.
2. Set the staging deployment name to **AdatumAdsStage**.
3. Upload the package **AdatumAds.cspkg** from \*\*D:08\*.
4. Upload the configuration file **ServiceConfiguration.Cloud.cscfg** from \*\*D:08\*.
5. Wait for the deployment to take effect

**Note:** The deployment process for the PaaS cloud service can take several minutes to complete. Watch the **cloud services** page. Wait for the **Staging** column to display **Running** before you continue to the next task.

#### Task 2: Configure RDP access

1. From the Azure classic portal, enable Remote Desktop for all the roles of the production deployment of the PaaS cloud service created in the previous exercise of this lab.
2. Set the Remote Desktop user name to **RDPAdmin**
3. Set the Remote Desktop password to **Pa$$w0rd.**
4. Set the expiration date to one month from today's date.

#### Task 3: Test connectivity

1. From the Azure classic portal, identify the URL of the production deployment of the PaaS cloud service you deployed in the previous exercise.
2. Use Internet Explorer to navigate to the URL representing the production deployment of the PaaS cloud service.
3. Leave the Internet Explorer window open. You will use it later in this exercise.
4. From the Azure classic portal, identify the URL of the staging deployment of the PaaS cloud service you deployed in the previous exercise.
5. Navigate to the URL representing the staging deployment of the PaaS cloud service by using Internet Explorer.
6. Close the Internet Explorer tab showing the staging deployment.
7. Connect via Remote Desktop to the **AdatumAdsWebRole\_IN\_0** instance of the production deployment.
8. Close the remote desktop connection.

**Results**: At the end of this exercise, you will be able to: - Perform a staging deployment of a PaaS cloud service. - Enable RDP access to a PaaS cloud service. - Connect to production and staging instances via HTTP and via RDP.

## Exercise 3: Monitoring cloud services

### Scenario

You have been asked to evaluate the network traffic used by the new version of the PaaS cloud service that you deployed to the production environment. To accomplish this, you will start collecting network-related monitoring metrics and configure an alert.

The main tasks for this exercise are as follows:

1. Add metrics to the PaaS cloud service monitoring
2. Create an alert
3. Monitor an active cloud service
4. Reset the environment

#### Task 1: Add metrics to the PaaS cloud service monitoring

1. In the Azure classic portal, navigate to the **MONITOR** tab of the production deployment of the PaaS cloud service created in the first exercise of this lab.
2. Add the **Network In** metric of the aggregate for AdatumAdsWebRole to the list of metrics displayed on the **MONITOR** tab in the portal.

#### Task 2: Create an alert

1. From the Azure classic portal, add a rule for the **Network In** metric for the aggregate of AdatumAdsWebRole.
2. Name the rule **Network In Alert**.
3. Set the threshold value of the rule to 1.
4. Configure the rule to send alerts to the email address of the service administrator account of your Azure subscription.
5. Keep the remaining values at their defaults.
6. Generate network traffic to the production deployment by accessing it via HTTP, using its webpage displayed in Internet Explorer, which you opened earlier in this exercise.

**Note:** It might take a few minutes before the alert is triggered.

#### Task 3: Monitor an active cloud service

1. From the Azure classic portal, navigate to **MANAGEMENT SERVICES**, and then view the **Network In Alert** rule you created in the previous task.
2. Review the alerts generated by the rule.
3. From Internet Explorer, navigate to the Microsoft Outlook mailbox of the service administrator account of your Azure subscription.
4. Review the email alerts generated the rule.
5. Close Internet Explorer, which is displaying the content of the Outlook mailbox.

#### Task 4: Reset the environment

1. Launch Windows PowerShell as an Administrator.
2. From the **Windows PowerShell** prompt, run the following command.

Reset-Azure

1. When prompted, sign in by using the Microsoft account associated with your Azure subscription.
2. If you have multiple Azure subscriptions, select the one you want the script to target.
3. When prompted for confirmation, type **y**.

**Note:** This script removes Azure services from your subscription. It is therefore recommended that you use an Azure trial pass that was provisioned specifically for this course and not your own Azure account. The script takes 5-10 minutes to reset your Azure environment so that it is ready for the next lab. The script removes all storage, virtual machines, VNETs, cloud services, and resource groups.

**Important**: The script might not be able to get exclusive access to a storage account to delete it. (If this occurs, you will see an error.) If you find objects remaining after the reset script is complete, you can rerun the **Reset-Azure** script or use the Azure portal and the Azure classic portal to manually delete all the objects in your Azure subscriptionâ€”with the exception of the default directory.

**Results**: At the end of this exercise, you will have configured monitoring for a PaaS cloud service with new metrics and an alert.

**Question** In Exercise 2, you enabled RDP access and used the RDP client to connect to an instance of a web role. Why would administrators connect to cloud service role instances with RDP?

**Question** You want to ensure you can identify the volume of network traffic your PaaS cloud service has received over the last hour. Should you configure a monitoring metric or an alert?

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