




Module 10 - Lab 2: Define and assign a blueprint in the portal

? Scenario

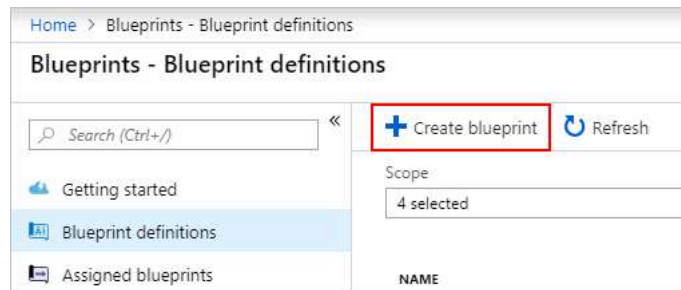
When you learn how to create and assign blueprints, you can define common patterns to develop reusable and rapidly deployable configurations based on Azure Resource Manager templates (ARM templates), policy, security, and more. In this tutorial, you learn to use Azure Blueprints to do some of the common tasks related to creating, publishing, and assigning a blueprint within your organization.


Task 1: Create a blueprint

- ? The first step in defining a standard pattern for compliance is to compose a blueprint from the available resources. In this example, create a new blueprint named **MyBlueprint** to configure role and policy assignments for the subscription. Then add a new resource group, and create a Resource Manager template and role assignment on the new resource group.

- ☐ 1. Login to the Azure Portal with the username  **sheikhnasirBJO4P@gdcs0.com** and password  **aLEe3Op8Y1gANLby**
- ☐ 2. In the search bar at the top of the Azure Portal, search for and select  **Blueprints**.
- ☐ 3. Select **Blueprint definitions** from the page on the left and select the **+ Create blueprint** button at the top of the page.




Or, select **Create** from the **Getting started** page to go straight to creating a blueprint.

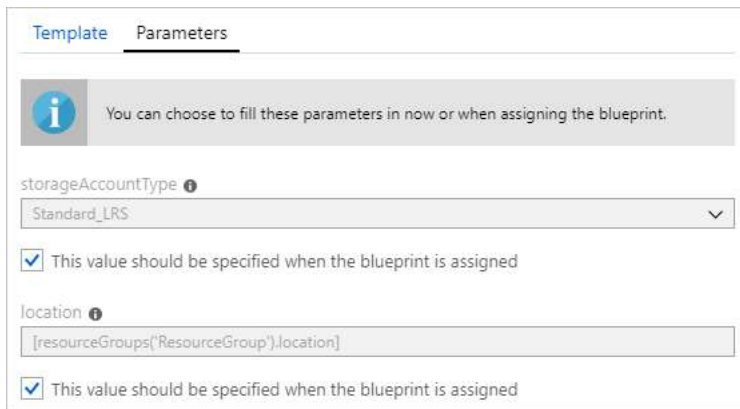


- ☐ 4. Select **Start with blank blueprint** from the card at the top of the built-in blueprints list.
- ☐ 5. Provide a **Blueprint name** such as  **MyBlueprint**. (Use up to 48 letters and numbers, but no spaces or special characters). Leave **Blueprint description** blank for now.
- ☐ 6. In the **Definition location** box, select the ellipsis on the right, select your subscription and choose **Select**.
- ☐ 7. Verify that the information is correct. The **Blueprint name** and **Definition location** fields can't be changed later. Then select **Next : Artifacts** at the bottom of the page or the **Artifacts** tab at the top of the page.
- ☐ 8. Add a role assignment at the subscription level:
 - 1. Select the **+ Add artifact** row under **Subscription**. The **Add artifact** window opens on the right side of the browser.
 - 2. Select **Role assignment** for **Artifact type**.
 - 3. Under **Role**, select **Contributor**. Leave the **Add user, app or group** box with the check box that indicates a dynamic parameter.
 - 4. Select **Add** to add this artifact to the blueprint.

 **Note:** Most artifacts support parameters. A parameter that's assigned a value during blueprint creation is a *static parameter*. If the

parameter is assigned during blueprint assignment it's a *dynamic parameter*.

- ☐ 9. Add a policy assignment at the subscription level:
 1. Select the **+ Add artifact** row under the role assignment artifact.
 2. Select **Policy assignment** for **Artifact type**.
 3. Change **Type** to **Built-in**. In **Search**, enter  **tag**.
 4. Click out of **Search** for the filtering to occur. Select **Append tag and its value to resource groups**.
 5. Select **Add** to add this artifact to the blueprint.
- ☐ 10. Select the row of the policy assignment **Append tag and its value to resource groups**.
- ☐ 11. The window to provide parameters to the artifact as part of the blueprint definition opens and allows setting the parameters for all assignments (static parameters) based on this blueprint instead of during assignment (dynamic parameters). This example uses dynamic parameters during blueprint assignment, so leave the defaults and select **Cancel**.
- ☐ 12. Add a resource group at the subscription level:
 1. Select the **+ Add artifact** row under **Subscription**.
 2. Select **Resource group** for **Artifact type**.
 3. Leave the **Artifact display name**, **Resource Group Name**, and **Location** boxes blank, but make sure that the check box is checked for each parameter property to make them dynamic parameters.
 4. Select **Add** to add this artifact to the blueprint.
- ☐ 13. Add a template under the resource group:
 1. Select the **+ Add artifact** row under the **ResourceGroup** entry.
 2. Select **Azure Resource Manager template** for **Artifact type**, set **Artifact display name** to  **StorageAccount**, and leave **Description** blank.
 3. Open a new tab and navigate to the following URL:  <http://aka.gd/az303bptemplate>
 4. Copy the entire JSON template to the clipboard.
 5. On the **Template** tab in the editor box, paste the JSON template you copied in the previous step. After you paste the template, select the **Parameters** tab and note that the template parameters **storageAccountType** and **location** were detected.
 6. Clear the **storageAccountType** check box and note that the drop-down list contains only values included in the ARM template under **allowedValues**. Select the box to set it back to a dynamic parameter.
 7. Select **Add** to add this artifact to the blueprint.



The screenshot shows the 'Parameters' tab of a blueprint configuration. It contains two parameters:

- storageAccountType**: A dropdown menu with 'Standard_LRS' selected. Below it is a checked checkbox labeled 'This value should be specified when the blueprint is assigned'.
- location**: A text box containing the expression '[resourceGroups('ResourceGroup').location]'. Below it is a checked checkbox labeled 'This value should be specified when the blueprint is assigned'.

- ☐ 14. Your completed blueprint should look similar to the following. Notice that each artifact has **x out of y parameters populated** in the **Parameters** column. The dynamic parameters are set during each assignment of the blueprint.

Create blueprint

Basics **Artifacts**

Add artifacts to the blueprint. Add resource groups to organize where the artifacts should be deployed and assigned.

NAME	ARTIFACT TYPE	PARAMETERS
▼ Subscription		
[User group or application name] : Contributor	Role assignment	0 out of 1 parameters populated
Apply tag and its default value to resource groups	Policy assignment	0 out of 2 parameters populated
+ Add artifact...		
▼ ResourceGroup		
StorageAccount	Azure Resource Manager template	0 out of 2 parameters populated
+ Add artifact...		

- ☐ 15. Now that all planned artifacts have been added, select **Save Draft** at the bottom of the page.

Task 2: Edit a blueprint

In Create a blueprint you didn't provide a description or add the role assignment to the new resource group.

You can fix both by following these steps:

- ☐ 1. Select **Blueprint definitions** from the page on the left.
- ☐ 2. In the list of blueprints, right-click the one that you previously created and select **Edit blueprint**.
- ☐ 3. In **Blueprint description**, provide some information about the blueprint and the artifacts that compose it. In this case, enter something like: [This blueprint sets tag, policy and role assignment on the subscription, creates a ResourceGroup, and deploys a resource template and role assignment to that ResourceGroup.](#)
- ☐ 4. Select **Next : Artifacts** at the bottom of the page or the **Artifacts** tab at the top of the page.
- ☐ 5. Add a role assignment under the resource group:
 1. Select the **+ Add artifact** row directly under the **ResourceGroup** entry.
 2. Select **Role assignment** for **Artifact type**.
 3. Under **Role**, select **Owner**, and clear the check box under the **Add user, app or group** box.
 4. Search for and select a user, app, or group to add. This artifact uses a static parameter set the same in every assignment of this blueprint.
 5. Select **Add** to add this artifact to the blueprint.

* Artifact type

Role assignment

You can choose to fill these parameters in now or when assigning the blueprint.

Role

Owner

Add user, app or group

Contoso

☐ This value should be specified when the blueprint is assigned

- ☐ 6. Your completed blueprint should look similar to the following. Notice that the newly added role assignment shows **1 out of 1 parameters populated**. That means it's a static parameter.

Edit blueprint

Basics **Artifacts**

Add artifacts to the blueprint. Add resource groups to organize where the artifacts should be deployed and assigned.

NAME	ARTIFACT TYPE	PARAMETERS
▼ Subscription		
[User group or application name] : Contributor	Role assignment	0 out of 1 parameters populated
Apply tag and its default value to resource groups	Policy assignment	0 out of 2 parameters populated
+ Add artifact...		
▼ ResourceGroup		
StorageAccount	Azure Resource Manager template	0 out of 2 parameters populated
Contoso : Owner	Role assignment	1 out of 1 parameters populated
+ Add artifact...		

- ☐ 7. Select **Save Draft** now that it has been updated.

Task 3: Publish a blueprint

Now that all the planned artifacts have been added to the blueprint, it's time to publish it. Publishing makes the blueprint available to be assigned to a subscription.

- ☐ 1. Select **Blueprint definitions** from the page on the left.
- ☐ 2. In the list of blueprints, right-click the one you previously created and select **Publish blueprint**.
- ☐ 3. In the pane that opens, provide a **Version** (letters, numbers, and hyphens with a maximum length of 20 characters), such as **v1**. Optionally, enter text in **Change notes**, such as **First publish**.
- ☐ 4. Select **Publish** at the bottom of the page.

Task 4: Assign a blueprint

After a blueprint has been published, it can be assigned to a subscription. Assign the blueprint that you created to one of the subscriptions under your management group hierarchy. If the blueprint is saved to a subscription, it can only be assigned to that subscription.

- ☐ 1. Select **Blueprint definitions** from the page on the left.
- ☐ 2. In the list of blueprints, right-click the one that you previously created (or select the ellipsis) and select **Assign blueprint**.
- ☐ 3. On the **Assign blueprint** page, in the **Subscription** drop-down list, select your subscriptions.
- ☐ 4. For **Assignment name**, provide a unique name for this assignment.
- ☐ 5. In **Location**, select a region for the managed identity and subscription deployment object to be created in. Azure Blueprint uses this managed identity to deploy all artifacts in the assigned blueprint.
- ☐ 6. Leave the **Blueprint definition version** drop-down selection of **Published** versions on the **v1** entry. (The default is the most recently published version.)
- ☐ 7. For **Lock Assignment**, leave the default of **Don't Lock**.

Lock Assignment

Don't Lock **Read Only** **Do Not Delete**

The assignment is not locked. Users, groups, and service principals with permissions can modify and delete deployed resources. [Learn more](#)

Managed Identity ⓘ

☒ System assigned
☐ User assigned

- ☐ 8. Under **Managed Identity**, leave the default of **System assigned**.
- ☐ 9. For the subscription level role assignment **[User group or application name] : Contributor**, search for and select a user, app, or group.
- ☐ 10. For the subscription level policy assignment, set **Tag Name** to **CostCenter** and the **Tag Value** to **ContosoIT**.

- ☐ 11. For **ResourceGroup**, provide a **Name** of **StorageAccount** and a **Location** of **East US 2** from the drop-down list.
- ☐ 12. On the ARM template **StorageAccount**, select **Standard_GRS** for the **storageAccountType** parameter.
- ☐ 13. Read the information box at the bottom of the page, and then select **Assign**.

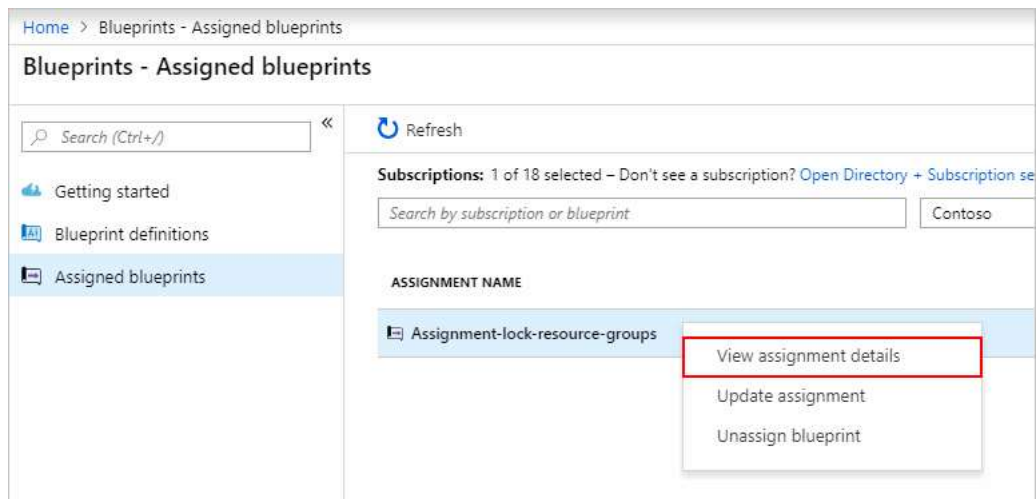
Task 5: Track deployment of a blueprint

When a blueprint has been assigned to one or more subscriptions, two things happen:

- The blueprint is added to the **Assigned blueprints** page for each subscription.
- The process of deploying all the artifacts defined by the blueprint begins.

Now that the blueprint has been assigned to a subscription, verify the progress of the deployment:

- ☐ 1. Select **Assigned blueprints** from the page on the left.
- ☐ 2. In the list of blueprints, right-click the one that you previously assigned and select **View assignment details**.



- ☐ 3. On the **Blueprint assignment** page, validate that all artifacts were successfully deployed and that there were no errors during the deployment.

Task 5: Unassign a blueprint

As you no longer need a blueprint assignment, remove it from a subscription. The blueprint might have been replaced by a newer blueprint with updated patterns, policies, and designs. When a blueprint is removed, the artifacts assigned as part of that blueprint are left behind. To remove a blueprint assignment, follow these steps:

- ☐ 1. Select **Assigned blueprints** from the page on the left.
- ☐ 2. In the list of blueprints, select the blueprint that you want to unassign. Then select the **Unassign blueprint** button at the top of the page.
- ☐ 3. Read the confirmation message and then select **OK**.

Task 6: Delete a blueprint

- ☐ 1. Select **Blueprint definitions** from the page on the left.
- ☐ 2. Right-click the blueprint that you want to delete, and select **Delete blueprint**. Then select **Yes** in the confirmation dialog box.

✓ In this lab, you've created, assigned, and removed a blueprint with Azure portal.