# Stories 22 : Azure ARM(Azure Resource Manager) Templates

Azure Resource Manager (ARM) templates are JSON files that define the resources you need to deploy for your solution in Azure. These templates are used to automate the deployment and configuration of Azure resources. ARM templates describe the resources you want to deploy, their dependencies, and various configuration settings.

ARM Templates
{

**schema** : which scheme we re using

**content version**: 1.0.0.0

**Parameters**: to define values or  pass values

**variables**: combines two values

**resources**: What type of resource we are creating

**Output**: it show the values which we have created

}

**ARM Templates Overview**

**Schema**:
Specifies the version of the ARM template schema being used.

**Content Version**:
Indicates the version of the content within the ARM template.

**Parameters**:
Used to define or pass values to the template, enabling customization and flexibility.

**Variables**:
Allows the combination of multiple values for reuse within the template.

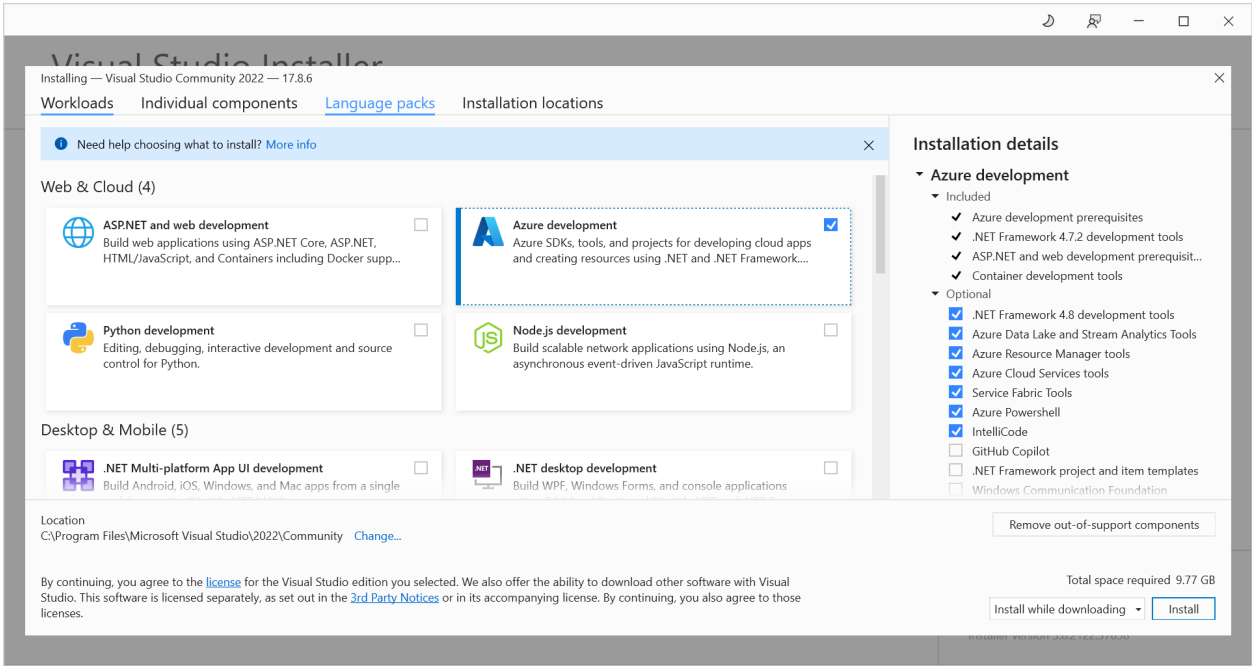
**Resources**:
Specifies the type of Azure resources being created or configured by the template.

**Outputs**:
Displays the values or resources that have been created or modified by the template, facilitating easy access to important information post-deployment.

## Prerequisites:

Install Visual Studio

https://visualstudio.microsoft.com/thank-you-downloading-visual-studio/?sku=Community&channel=Release&version=VS2022&source=VSLandingPage&cid=3600&passive=false



Deployment

Method 1 :

Visual Studio

Method 2 :

Azure ARM Template with azure portal

azure will provide template in

https://github.com/Azure/azure-quickstart-templates

example to create a storage account

https://github.com/Azure/azure-quickstart-templates/blob/master/quickstarts/microsoft.storage/storage-account-create/azuredeploy.json

```
{
  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTe
  "contentVersion": "1.0.0.0",
  "resources": [
    {
      "type": "Microsoft.Compute/virtualMachines",
      "apiVersion": "2019-03-01",
      "name": "myVM",
      "location": "East US",
      "properties": {
        // VM properties and configurations go here
```

```
        }
      }
    ]
  }
```

`$schema`: Specifies the URI of the JSON schema that the template adheres to. In this case, it points to the Azure Resource Manager (ARM) schema for deployment templates with a version of 2019-04-01.

`contentVersion`: Indicates the version of the template. It is set to "1.0.0.0" in this example.

`resources`: An array that contains the definition of Azure resources to be deployed. In this case, there is one resource defined inside the array.

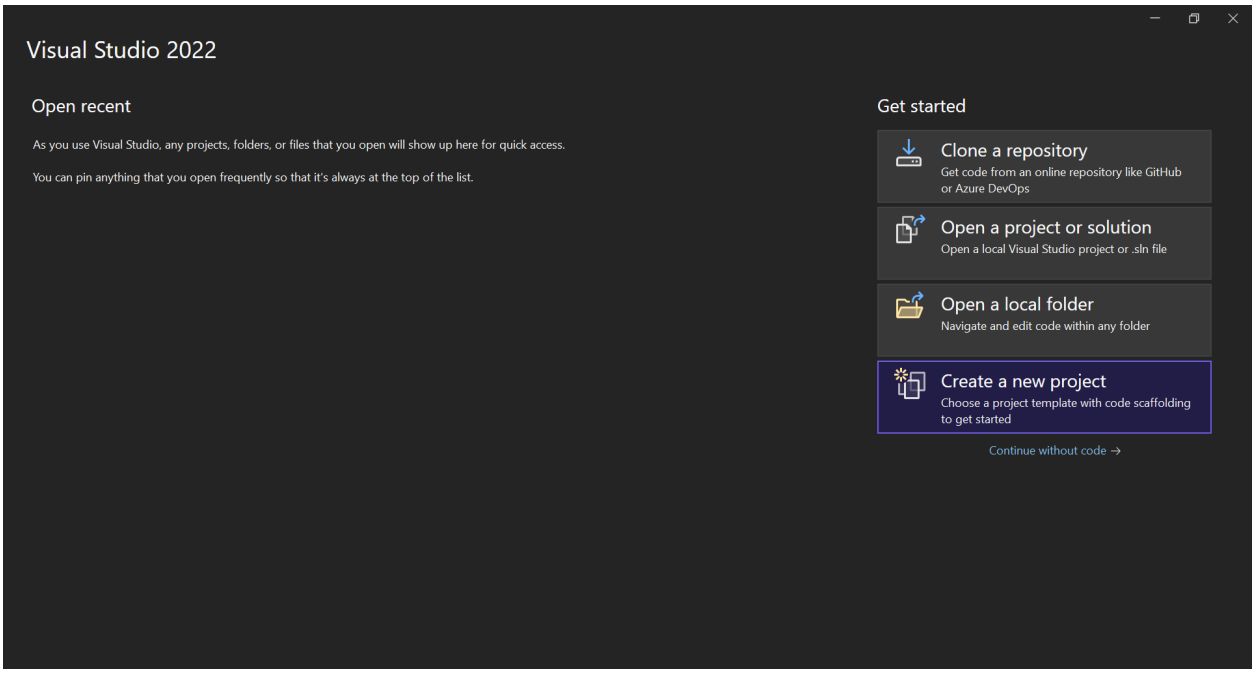
**Resource Definition:**

- `type`: Specifies the type of the Azure resource to be deployed. Here, it's a virtual machine under the `Microsoft.Compute` namespace.
- `apiVersion`: Specifies the version of the API to use for deploying this resource. In this case, it's set to "2019-03-01," indicating the API version released in March 2019.
- `name`: Specifies the name for the virtual machine, set as "myVM" in this example.
- `location`: Specifies the Azure region where the resource should be deployed. Here, it's set to "East US."
- `properties`: This is a placeholder where you would include specific properties and configurations for the virtual machine. For instance, it would contain details like the VM size, operating system, network configuration, etc. The comment "// VM properties and configurations go here" indicates where you would fill in these details.

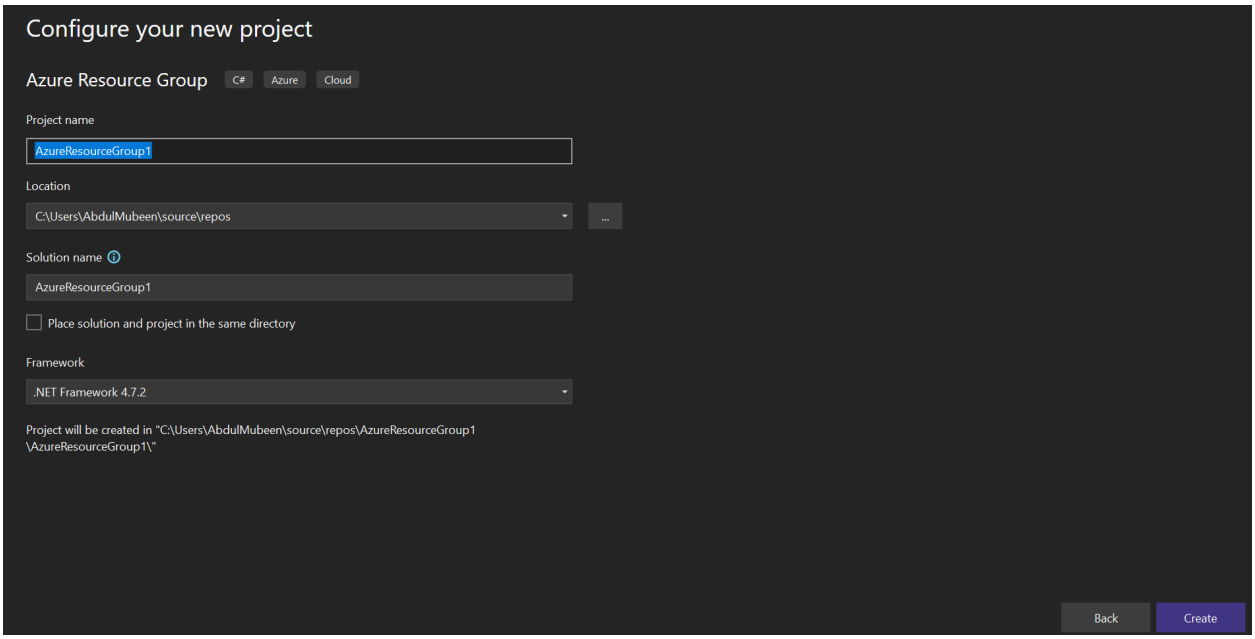
## Lab:  Deploy Storage account using ARM Templates

Solution :

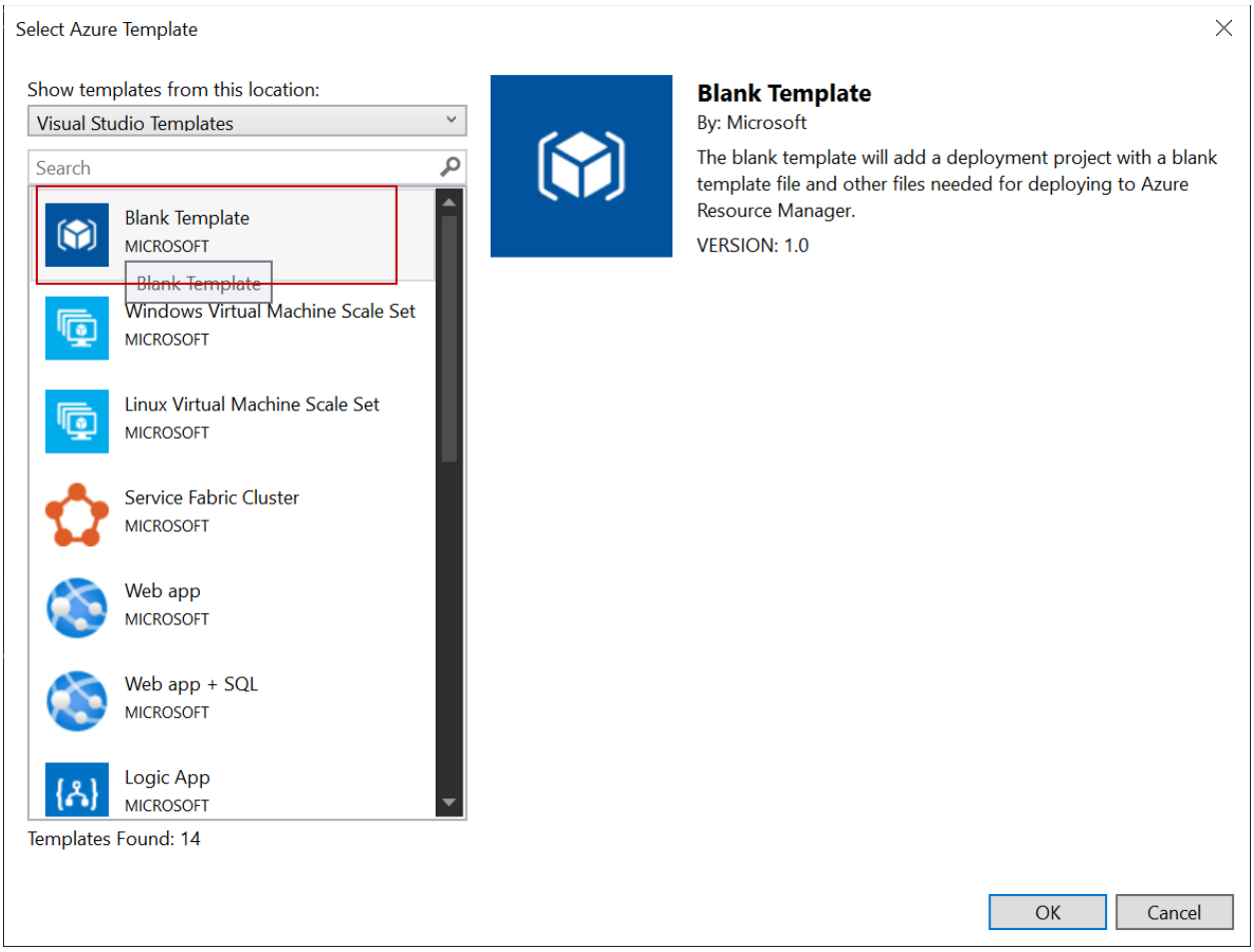
step1 : Navigate to visual studio and create a project



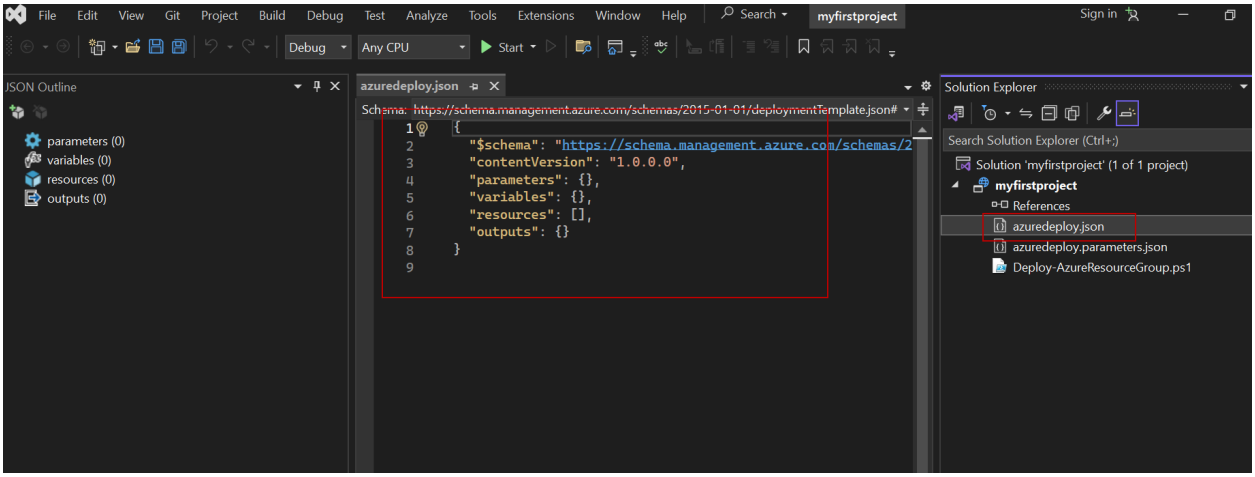

Step 2: Name any project



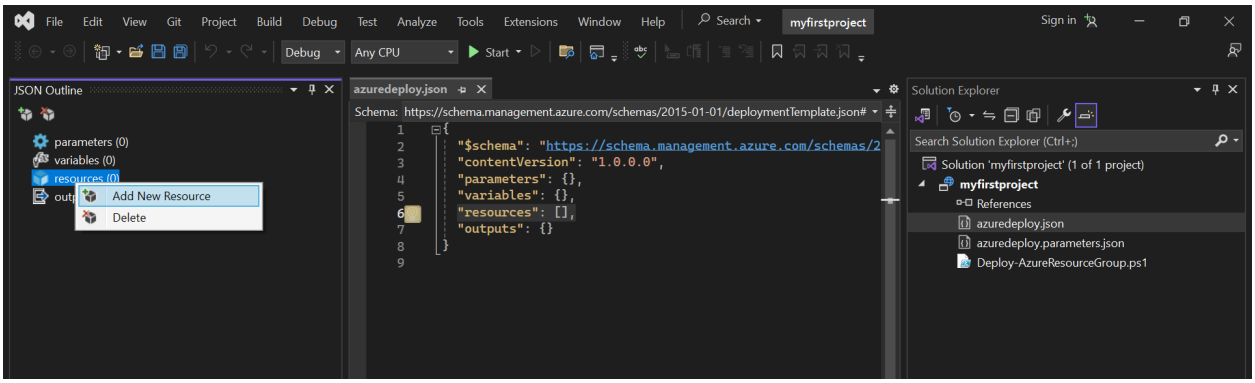

Step 3 : Create a Blank template



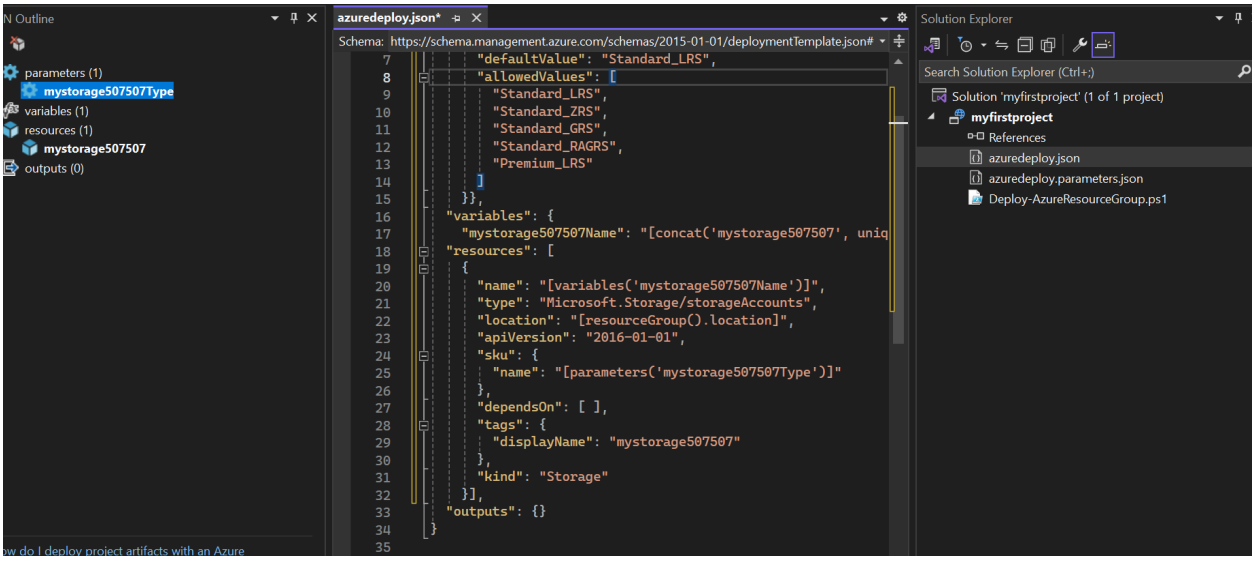

Step 4: Once the project is created i will load default files as shown in pic below



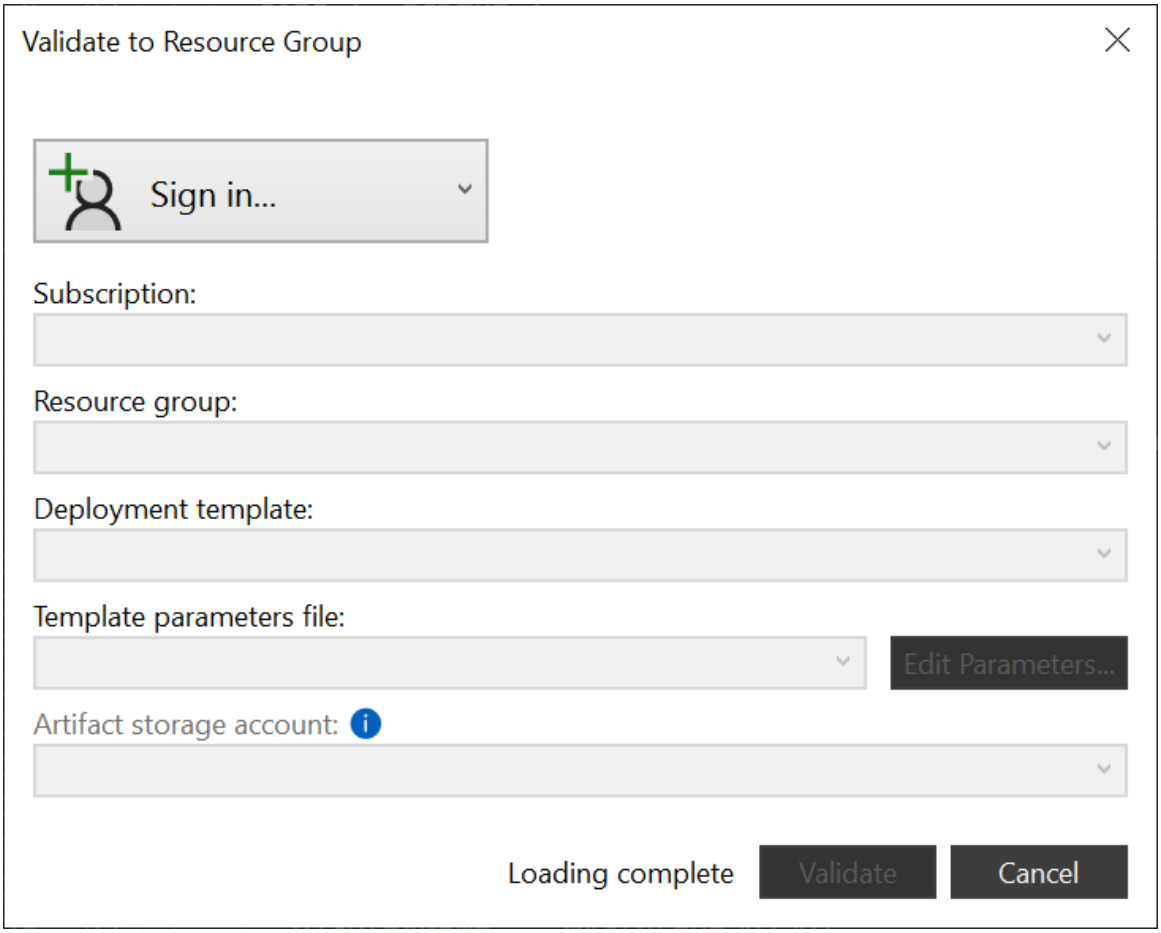

Step 5 : Click on Add new Resource to add the resourcce



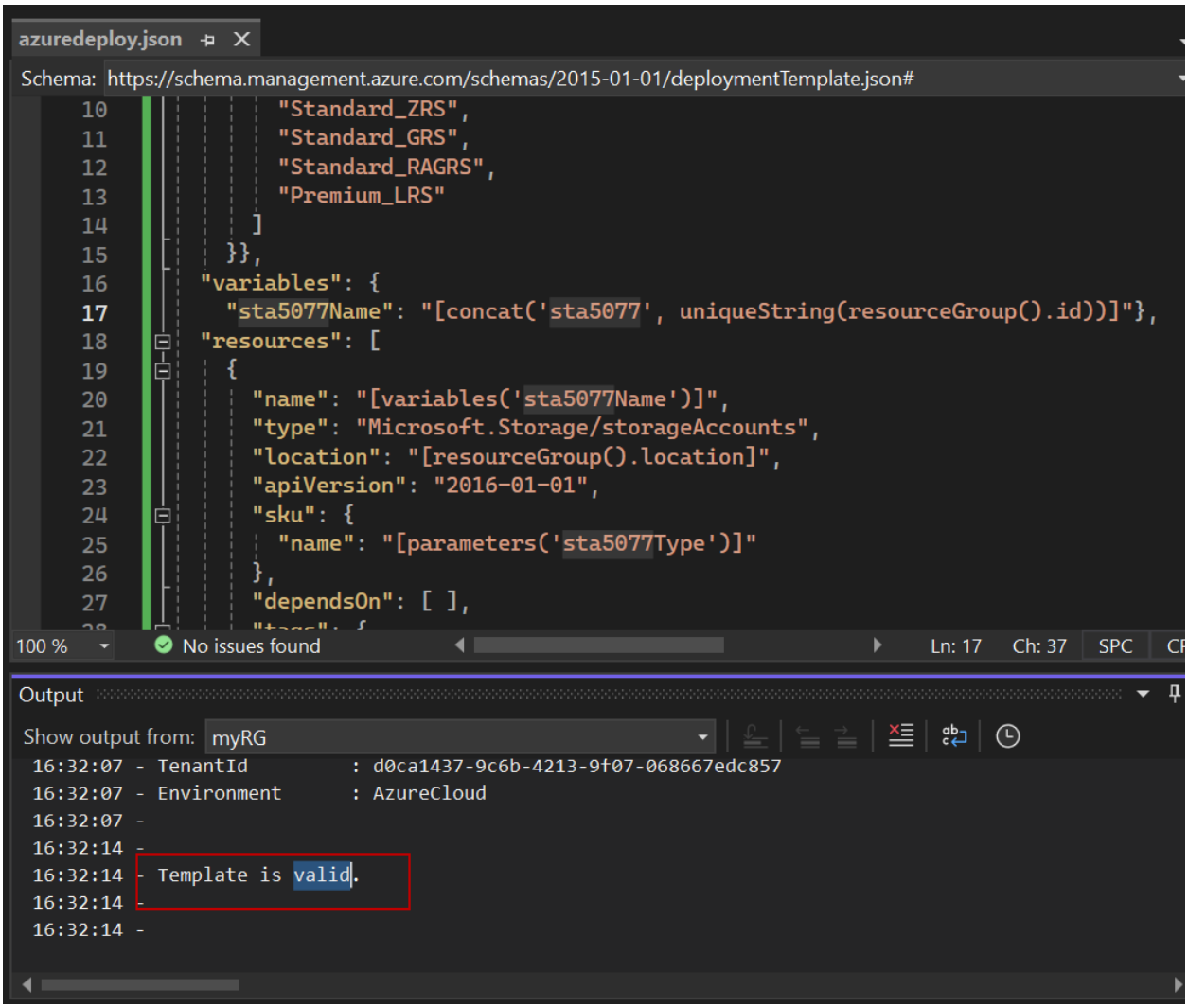

Step 6 : create a storage account give the name of storage account



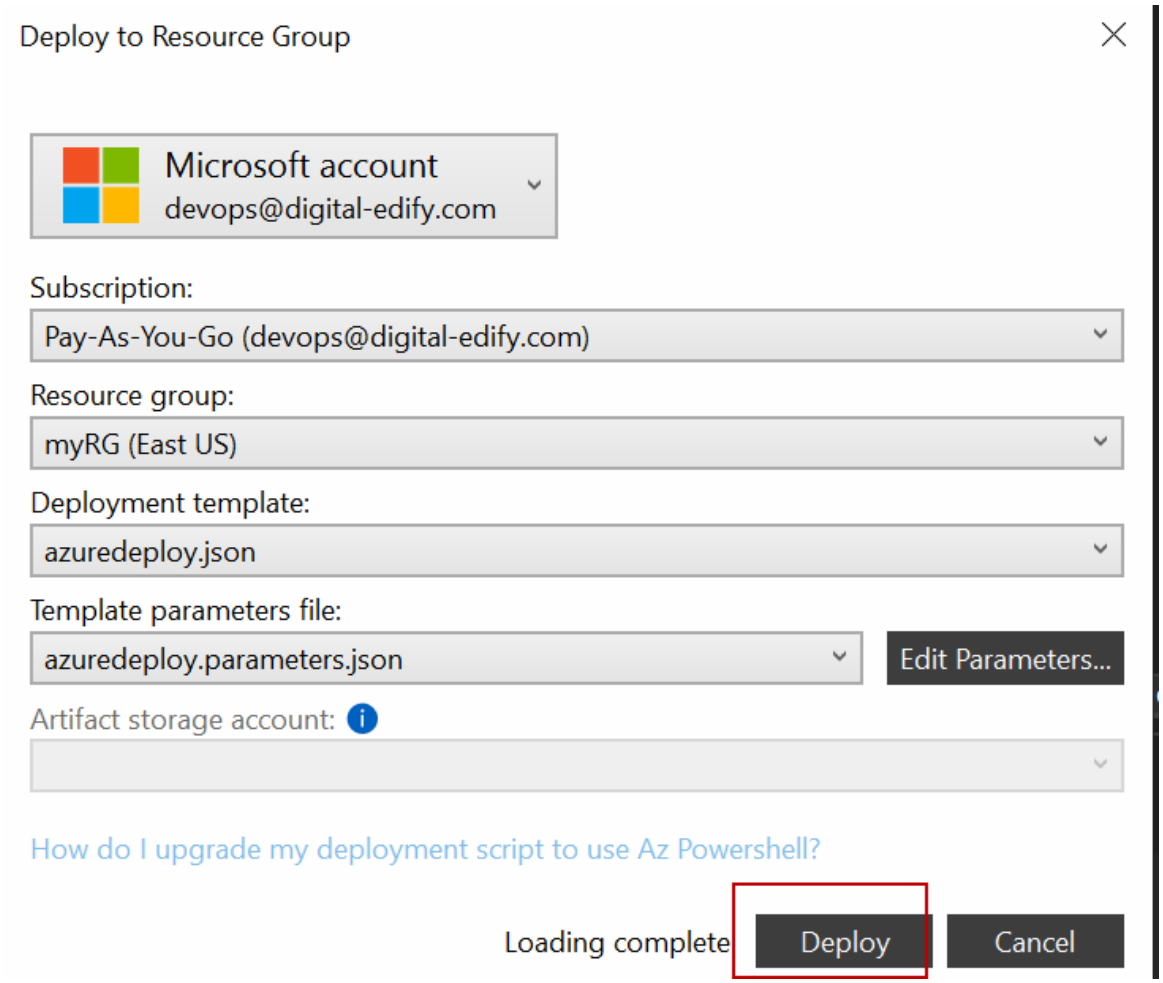

Step 7 : validate the ARM template code



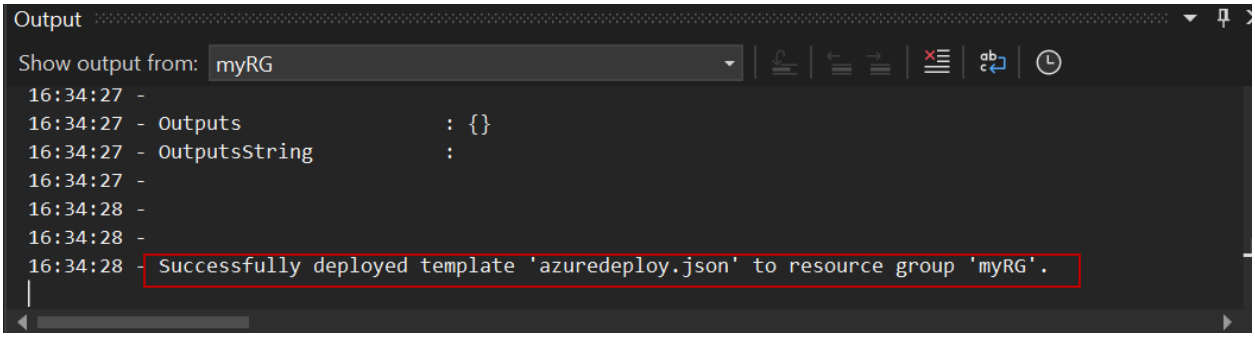

Validate the code



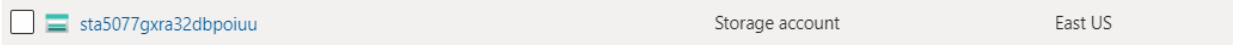

Then deploy  right on template select deploy and select RG




If deployment is successfully completed



Verify the Resource from Azure portal




## Method 2 with Azure Portal

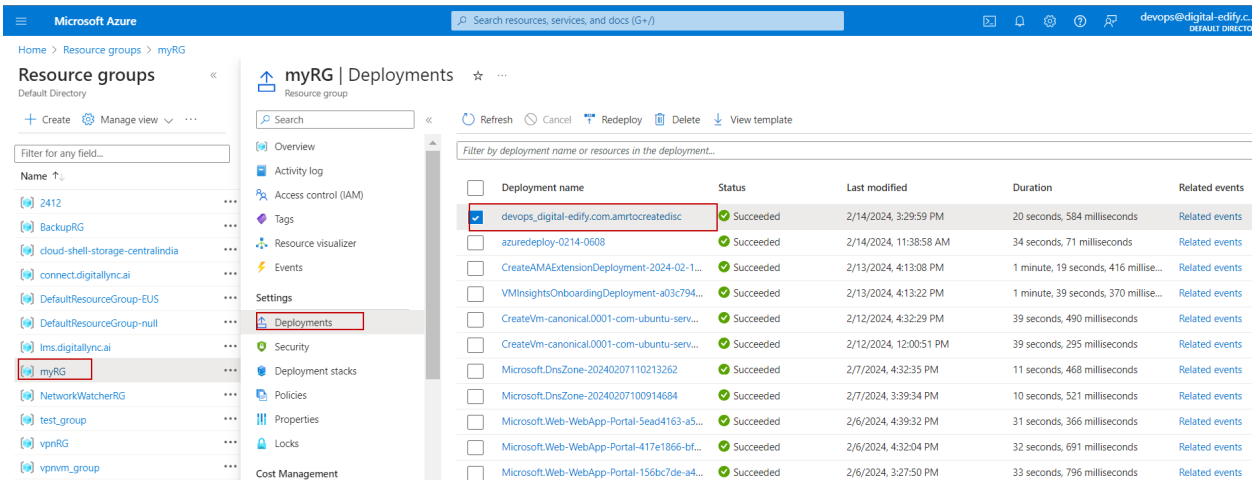
ARM Template Example:

```
{
  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTe
  "contentVersion": "1.0.0.0",
  "parameters": {
    "diskName": {
      "type": "string",
      "defaultValue": "armdisc",
      "metadata": {
        "description": "Name of the disk"
      }
    },
    "location": {
      "type": "string",
      "defaultValue": "[resourceGroup().location]",
      "metadata": {
        "description": "Location for all resources."
      }
    },
    "diskSizeGB": {
      "type": "int",
      "defaultValue": 10,
      "metadata": {
        "description": "Size of the disk in gigabytes."
      }
    }
  },
  "resources": [
    {
```

```
      "type": "Microsoft.Compute/disks",
      "apiVersion": "2020-12-01",
      "name": "[parameters('diskName')]",
      "location": "[parameters('location')]",
      "sku": {
        "name": "Premium_LRS",
        "tier": "Premium"
      },
      "properties": {
        "creationData": {
          "createOption": "Empty"
        },
        "diskSizeGB": "[parameters('diskSizeGB')]"
      }
    }
  ],
  "outputs": {
    "diskInfo": {
      "type": "object",
      "value": {
        "name": "[parameters('diskName')]",
        "sizeGB": "[parameters('diskSizeGB')]"
      }
    }
  }
}
```

To check the output of an ARM template deployment in the Azure Portal, follow these steps:

1. **Navigate to the Resource Group**: Go to the Azure Portal and navigate to the resource group where you deployed your ARM template.
2. **View Deployment**: Find and click on the deployment you want to view. This should be listed under the "Deployments" section of the resource group.
3. **View Outputs**: In the deployment details page, look for a section called "Outputs" or "Deployment Outputs." Here, you should see the output values defined in your ARM template, such as the disk name and size in your case.


Microsoft Azure
Search resources, services, and docs (G+/)
devops@digital-edify.c...
DEFAULT DIRECTO
Home > Resource groups > myRG
Resource groups
Default Directory
Create
Manage view
Filter for any field...
Name
2412
BackupRG
cloud-shell-storage-centralindia
connect.digitallync.ai
DefaultResourceGroup-EUS
DefaultResourceGroup-null
lms.digitallync.ai
myRG
NetworkWatcherRG
test_group
vpnRG
vpnvm_group
myRG | Deployments
Resource group
Search
Overview
Activity log
Access control (IAM)
Tags
Resource visualizer
Events
Settings
Deployments
Security
Deployment stacks
Policies
Properties
Locks
Cost Management
Refresh
Cancel
Redeploy
Delete
View template
Filter by deployment name or resources in the deployment...
Deployment name
Status
Last modified
Duration
Related events
devops_digital-edify.com.amrtocreatedisc
Succeeded
2/14/2024, 3:29:59 PM
20 seconds, 584 milliseconds
Related events
azuredeploy-0214-0608
Succeeded
2/14/2024, 11:38:58 AM
34 seconds, 71 milliseconds
Related events
CreateAMAExtensionDeployment-2024-02-1...
Succeeded
2/13/2024, 4:13:08 PM
1 minute, 19 seconds, 416 millise...
Related events
VMInsightsOnboardingDeployment-a03c794...
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Related events
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Related events
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Related events
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Succeeded
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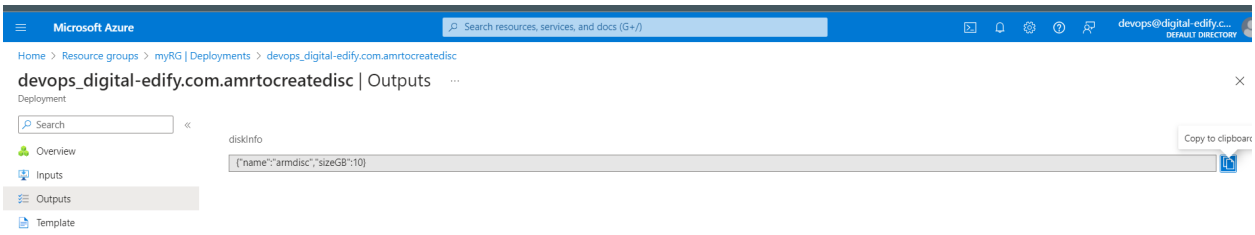
31 seconds, 366 milliseconds
Related events
Microsoft.Web-WebApp-Portal-417e1866-bf...
Succeeded
2/6/2024, 4:32:04 PM
32 seconds, 691 milliseconds
Related events
Microsoft.Web-WebApp-Portal-156bc7de-a4...
Succeeded
2/6/2024, 3:27:50 PM
33 seconds, 796 milliseconds
Related events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devops@digital-edify.c...
DEFAULT DIRECTORY
Home > Resource groups > myRG | Deployments > devops_digital-edify.com.amrtocreatedisc
devops_digital-edify.com.amrtocreatedisc | Outputs
Deployment
Search
Overview
Inputs
Outputs
Template
diskInfo
{"name":"armdisc","sizeGB":10}
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