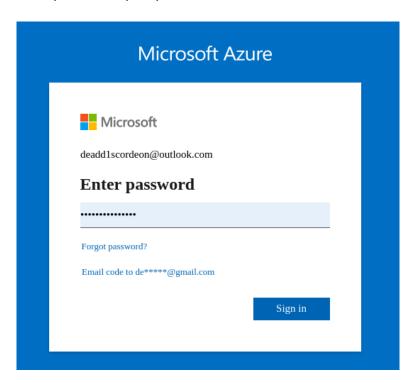
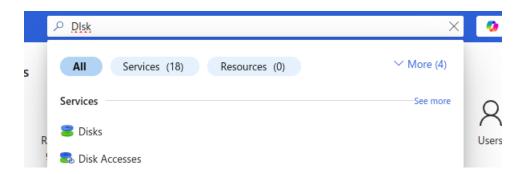
AZ-104-Microsoft Azure Administrator Kateryna Bakhmat

Lab 03 - Manage Azure resources by using Azure Resource Manager Templates

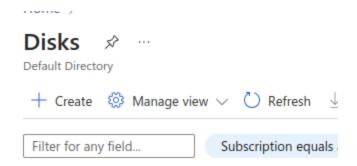
1. Sign in to the Azure portal - https://portal.azure.com.



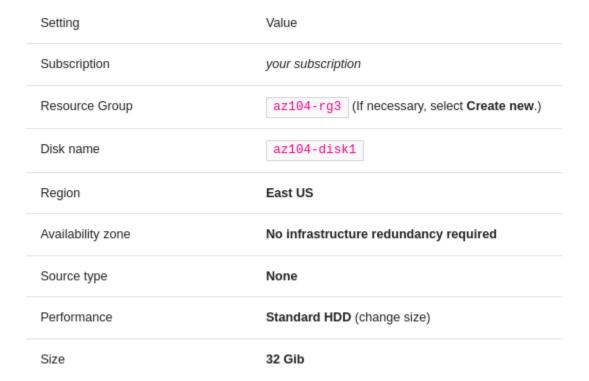
2. Search for and select Disks.



3.On the Disks page, select Create.



4.On the Create a managed disk page, configure the disk and then select Ok.

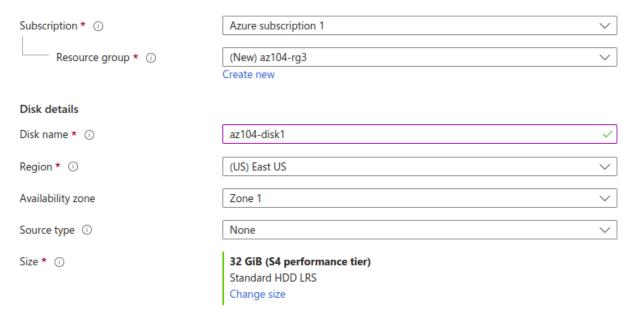


Basics Encryption Networking Advanced Tags Review + create

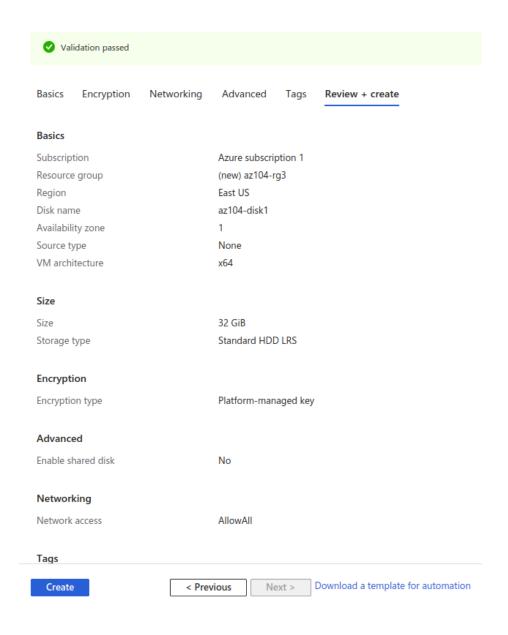
Select the disk type and size needed for your workload. Azure disks are designed for 99.999% availability. Azure managed disks encrypt your data at rest, by default, using Storage Service Encryption. Learn more about disks.

Project details

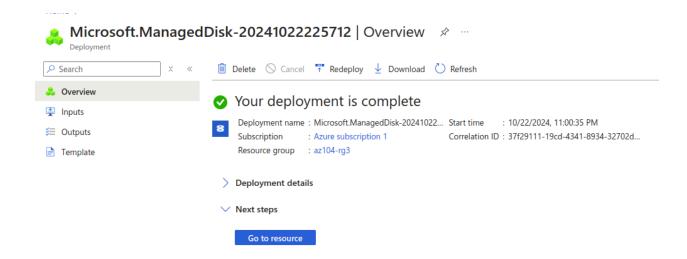
Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.



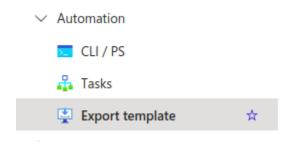
5. Click Review + Create then select Create.



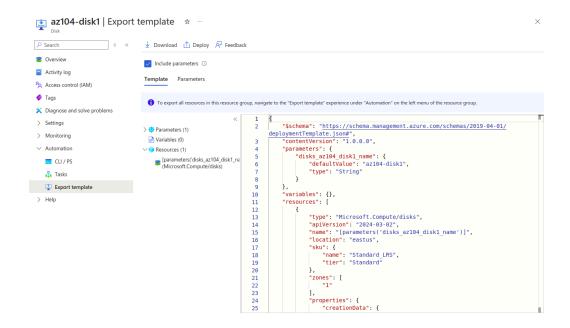
6. Monitor the notifications (upper right) and after the deployment select Go to resource.



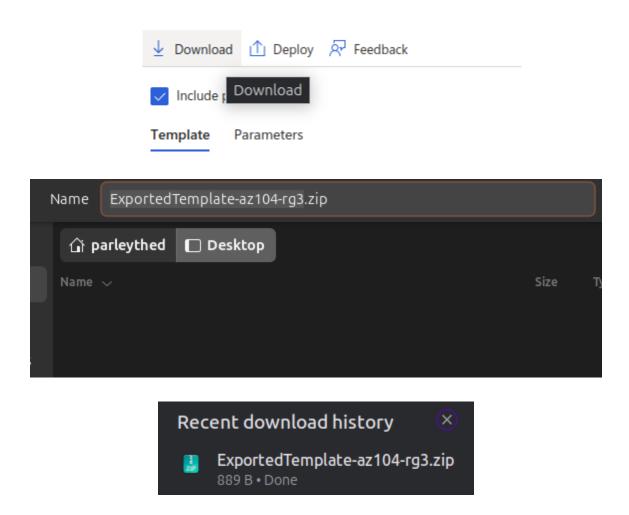
7.In the Automation blade, select Export template.



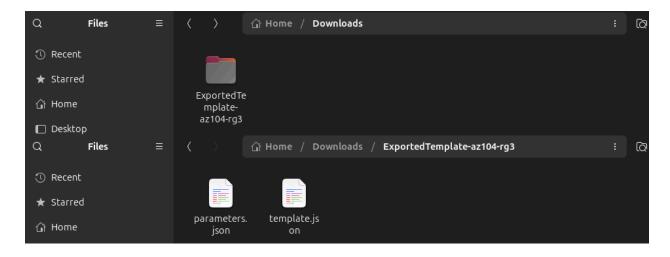
8. Take a minute to review the Template and Parameters files.



9.Click Download and save the templates to the local drive. This creates a compressed zipped file.

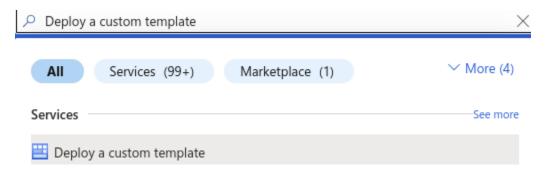


10. Use File Explorer to extract the content of the downloaded file into the Downloads folder on your computer. Notice there are two JSON files (template and parameters).



Task 2: Edit an Azure Resource Manager template and then redeploy the template

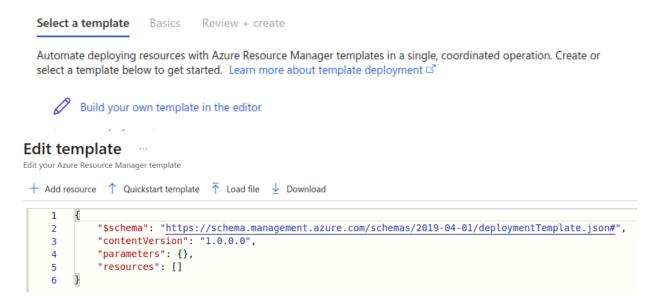
1.In the Azure portal, search for and select Deploy a custom template.



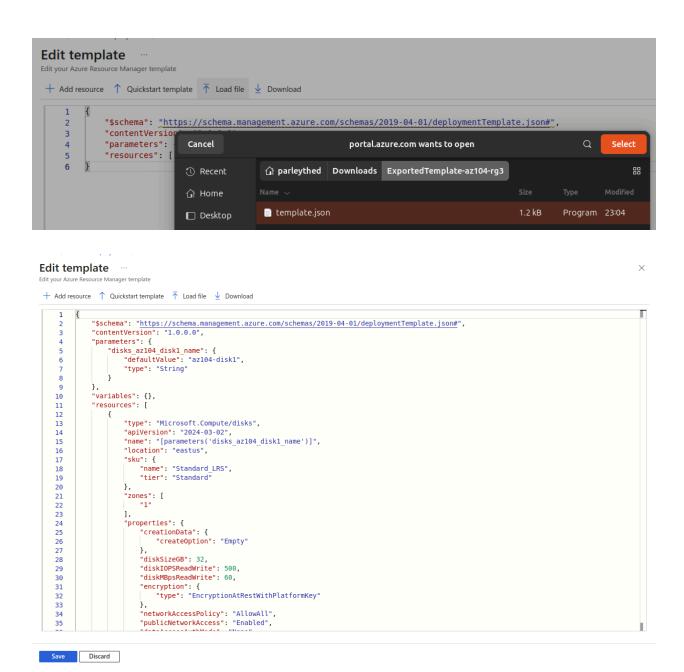
2.On the Custom deployment blade, notice there is the ability to use a Quickstart template. There are many built-in templates as shown in the drop-down menu.

Start with a quickstart template or template spec					
Template source (i)	Quickstart template Template spec				
Quickstart template (disclaimer) ①		\vee			

3. Instead of using a Quickstart, select Build your own template in the editor.



4. On the Edit template blade, click Load file and upload the template.json file you downloaded to the local disk.



5. Within the editor pane, make these changes.

Change disks_az104_disk1_name to disk_name (two places to change)

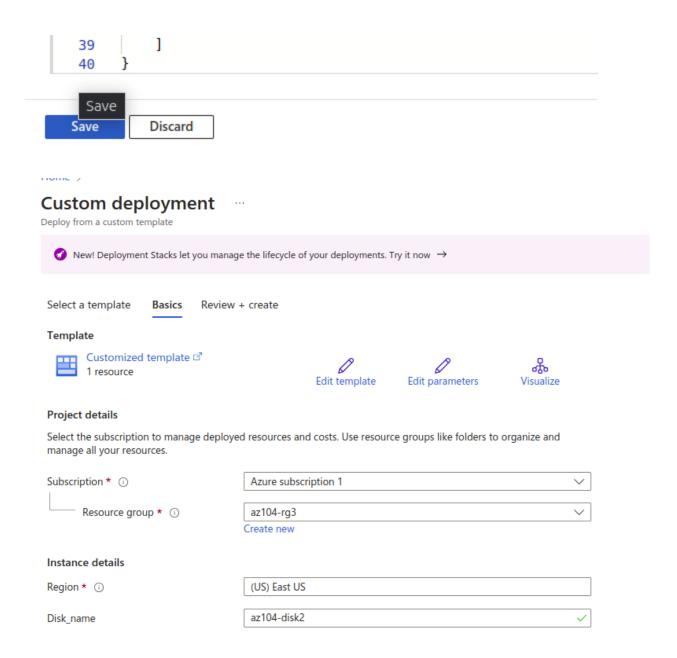
Change az104-disk1 to az104-disk2 (one place to change)

```
Edit template
Edit your Azure Resource Manager template
 + Add resource ↑ Quickstart template ↑ Load file 🛂 Download
                                                                                                                                           > disks_az104_disk1_name Aa Abi "* No results ↑ ↓ = ×
                  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#", "contentVersion": "1.0.0.0",
                   "parameters": {
                        "disk_name": {
                             "defaultValue": "az104-disk2",
"type": "String"
                   "variables": {},
     10
                  "resources": [
     12
                             "type": "Microsoft.Compute/disks",
   "apiVersion": "2024-03-02",
   "name": "[parameters('disk_name')]",
   "location": "eastus",
     13
     14
     15
     16
                              "sku": {
    "name": "Standard_LRS",
    "tier": "Standard"
     17
     18
     19
     20
     21
                              "zones": [
     22
                                    "1"
     23
```

6. Notice this is a Standard disk. The location is eastus. The disk size is 32GB.

```
12
                 "type": "Microsoft.Compute/disks",
13
                 "apiVersion": "2024-03-02",
14
15
                  "name": "[parameters('disk name')]",
                  "location": "eastus",
16
                 "sku": {
17
18
                     "name": "Standard LRS",
                      "tier": "Standard"
19
                 },
20
                  "zones": [
21
                     "1"
22
23
                  "properties": {
24
25
                     "creationData": {
                         "createOption": "Empty"
26
27
28
                     "diskSizeGB": 32,
                     "diskIOPSReadWrite": 500,
29
30
                     "diskMBpsReadWrite": 60,
                      "encryption": {
31
                         "type": "EncryptionAtRestWithPlatformKey"
32
33
                     "networkAccessPolicy": "AllowAll",
34
35
                     "publicNetworkAccess": "Enabled",
                      "dataAccessAuthMode": "None"
36
37
38
39
40
```

7. Save your changes.



8. Don't forget the parameters file. Select Edit parameters, click Load file and upload the parameters.json.

Home >

Edit parameters



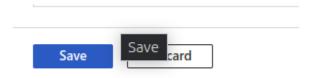
```
Edit parameters
 ↑ Load file 🕹 Download
          "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentParameters.json#",
          "contentVersion"
          "parameters": {
                              Cancel
                                                               portal.azure.com wants to open
                                                                                                                     Select
            "disk name": {
              "value": "az1
                                             ☐ parleythed Downloads ExportedTemplate-az104-rg3
                                                                                                                          88
                             Recent
   8
                              ঐ Home
                                             📄 template.json
                                                                                                           Program 23:04
                             Desktop
                                             parameters.json
                                                                                                  234 bytes Program 23:04
                              🖹 Docume...
```

Edit parameters

9. Make this change so it matches the template file. Change disks_az104_disk1_name to disk_name (one place to change).

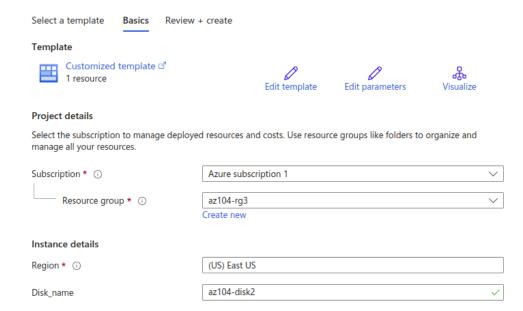
Edit parameters

10. Save your changes.

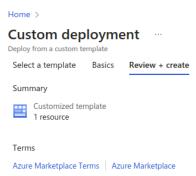


11. Complete the custom deployment settings:

Setting	Value
Subscription	your subscription
Resource Group	az104-rg3
Region	(US) East US)
Disk_name	az104-disk2



12. Select Review + Create and then select Create.



By clicking "Create," I (a) agree to the applicable legal terms associated with the offering; (b) authorize Microsoft to charge or bill my current payment method for the fees associated the offering(s), including applicable taxes, with the same billing frequency as my Azure subscription, until I discontinue use of the offering(s); and (c) agree that, if the deployment involves 3rd party offerings, Microsoft may share my contact information and other details of such deployment with the publisher of that offering.

Microsoft assumes no responsibility for any actions performed by third-party templates and does not provide rights for third-party products or services. See the Azure Marketplace Terms for additional terms.

Deploying this template will create one or more Azure resources or Marketplace offerings. You acknowledge that you are responsible for reviewing the applicable pricing and legal terms associated with all resources and offerings deployed as part of this template. Prices and associated legal terms for any Marketplace offerings can be found in the Azure Marketplace; both are subject to change at any time prior to deployment.

Neither subscription credits nor monetary commitment funds may be used to purchase non-Microsoft offerings. These purchases are billed separately.

If any Microsoft products are included in a Marketplace offering (e.g. Windows Server or SQL Server), such products are licensed by Microsoft and not by any third party.

Basics

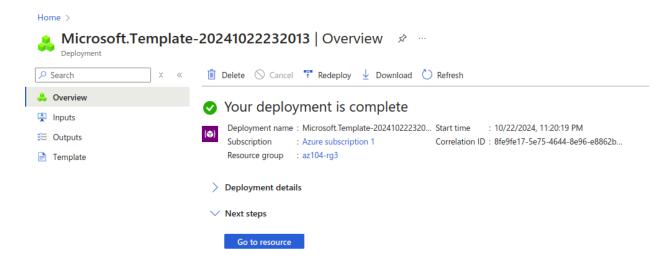
 Subscription
 Azure subscription 1

 Resource group
 az104-rg3

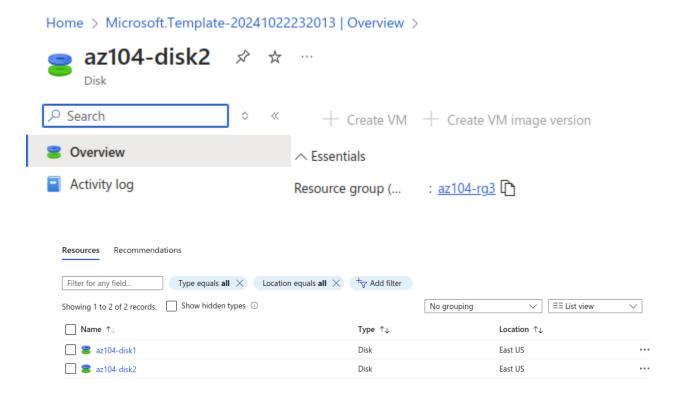
 Region
 East US

 Disk_name
 az104-disk2

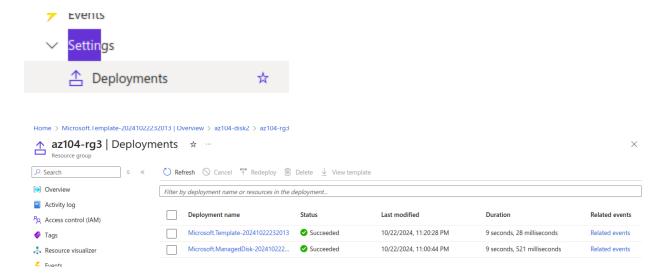
13. Select Go to resource. Verify az104-disk2 was created.



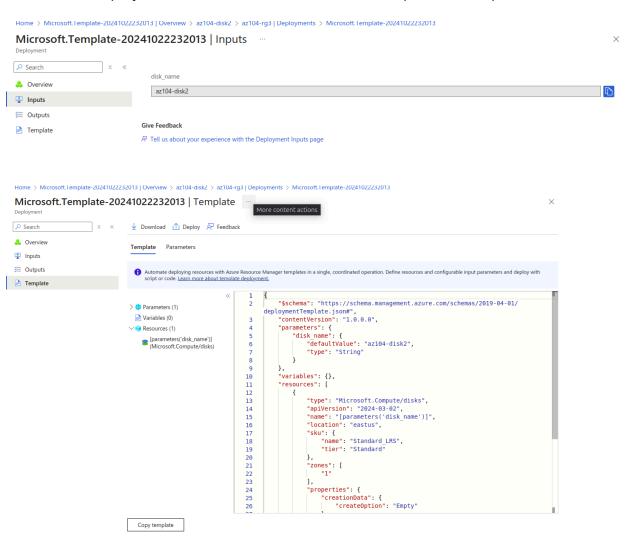
14. On the Overview blade, select the resource group, az104-rg3. You should now have two disks.



15. In the Settings section, click Deployments.



16. Select a deployment and review the content of the Input and Template blades.

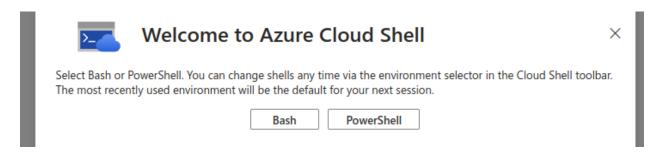


Task 3: Configure the Cloud Shell and deploy a template with PowerShell

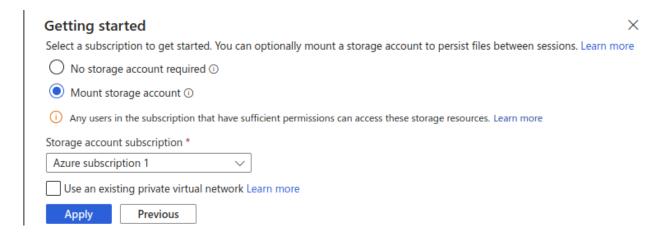
1. Select the Cloud Shell icon in the top right of the Azure Portal. Alternately, you can navigate directly to https://shell.azure.com.



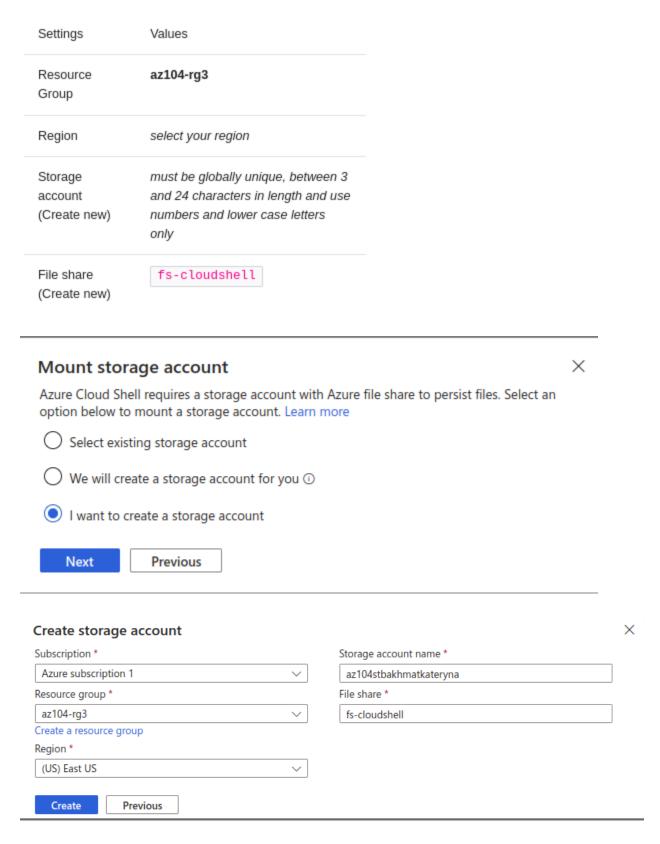
2. When prompted to select either Bash or PowerShell, select PowerShell.



3. On the Getting started screen select Mount storage account, select your Storage account subscription, and then select Apply.



4. Select I want to create a storage account and then Next. Complete the Create storage account information.



5. When completed select Create.



Deployment is in progress

Subscription: Azure subscription 1

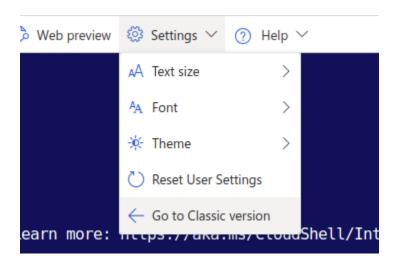
Resource group: az104-rg3

Storage account: az104stbakhmatkateryna

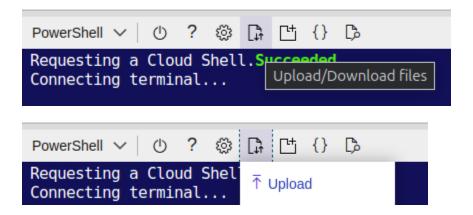
File share: fs-cloudshell

Region: East US

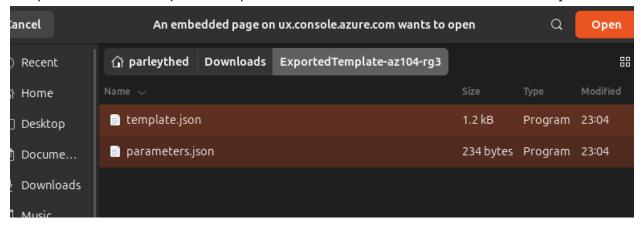
6. Select Settings (top bar) and then Go to classic version.



7. Select the Upload/Download files icon (top bar) and then select Upload.



8. Upload both the template and parameters files from the Downloads directory.



Upload destination: /home/kateryna

template.json COMPLETE

9. Select the Editor (curly brackets) icon and navigate to the template JSON file on the left in the navigation pane.

10. Make a change. For example, change the disk name to az104-disk3. Use Ctrl +S to save your changes.

11. To deploy to a resource group, use New-AzResourceGroupDeployment.

12. Ensure the command completes and the ProvisioningState is Succeeded.

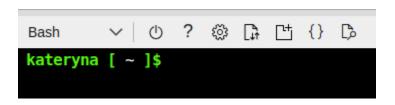
```
DeploymentName : template
ResourceGroupName : az104-rg3
ProvisioningState : Succeeded
```

13. Confirm the disk was created.

```
PS /home/kateryna> az disk list --output table
            ResourceGroup
                                                                           ProvisioningState
Name
                             Location
                                          Zones
                                                   Sku
                                                                 SizeGb
                                                   Standard_LRS 32
Standard_LRS 32
az104-disk1 AZ104-RG3
                             eastus
                                                                           Succeeded
az104-disk2 AZ104-RG3
                                          1
                              eastus
                                                                           Succeeded
                                                   Standard_LRS 32
az104-disk3 AZ104-RG3
                              eastus
                                          1
                                                                           Succeeded
```

Task 4: Deploy a template with the CLI

1. Continue in the Cloud Shell select Bash. Confirm your choice.



2. Verify your files are available in the Cloud Shell storage. If you completed the previous task your template files should be available.

3. Select the Editor (curly brackets) icon and navigate to the template JSON file.

```
### RILES

| Description | Files | Property | Property
```

4.Make a change. For example, change the disk name to az104-disk4. Use Ctrl +S to save your changes.

5. To deploy to a resource group, use az deployment group create.

6. Ensure the command completes and the ProvisioningState is Succeeded.

```
"provisioningState": "Succeeded",
   "templateHash": "17850572775505378460",
   "templateLink": null,
   "timestamp": "2024-10-22T21:04:08.276577+00:00",
   "validatedResources": null
},
   "resourceGroup": "az104-rg3",
   "tags": null,
   "type": "Microsoft.Resources/deployments"
}
```

7. Confirm the disk was created.

kateryna [~]\$ az disk listoutput table						
Name	ResourceGroup	Location	Zones	Sku	SizeGb	ProvisioningState
az104-disk1	AZ104-RG3	eastus	1	Standard_LRS	32	Succeeded
az104-disk2	AZ104-RG3	eastus	1	Standard_LRS	32	Succeeded
az104-disk3	AZ104-RG3	eastus	1	Standard_LRS	32	Succeeded
az104-disk4	AZ104-RG3	eastus	1	Standard LRS	32	Succeeded
katervna [~	1\$					

Task 5: Deploy a resource by using Azure Bicep

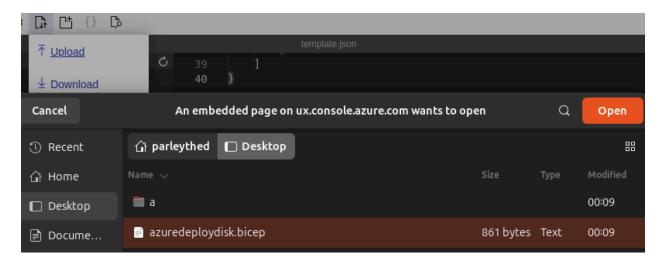
1. Continue working in the Cloud Shell in a Bash session.

```
kateryna [ ~ ]$ [
```

2. Locate and download the \Allfiles\Lab03\azuredeploydisk.bicep file.



3. Upload the bicep file to the Cloud Shell.



4. Select the Editor (curly brackets) icon and navigate to the file.

```
√ | ① ? ② □ □ () □

Bash
                                                                                                                @description('Name of the managed disk to be copied')
param managedDiskName string = 'diskname'
  .azure
                                                                                                                @description('Disk size in GiB')
  .cache
                                                                                                                @minValue(4)
@maxValue(65536)
  clouddrive
                                                                                                                @description('Disk IOPS value')
    .bash_history
                                                                                                                @minValue(100)
@maxValue(160000)
    .bash_logout
    .bash_profile
                                                                                                                @description('Disk throughput value in MBps')
                                                                                                                @minValue(1)
@maxValue(2000)
                                                                                                                param diskMbpsReadWrite int = 10
    azuredeploydisk.bicep
                                                                                                                @description('Location for all resources.')
param location string = resourceGroup().location
                                                                                                                resource managedDisk 'Microsoft.Compute/disks@2020-09-30' = { name: managedDiskName
                                                                                                                   location: location
                                                                                                                   sku: {
    name: 'UltraSSD_LRS'
```

5. Take a minute to read through the bicep template file. Notice how the disk resource is defined.

```
FILES | January 13 | Azure | 14 | Gedescription('Disk throughput value in MBps') | Genavalue(1) | Genavalue(2000) | Jocation | 16 | Genavalue(2000) | Jocation | 18 | Jocation | 18 | Jocation | 18 | Jocation | 19 | Jocation
```

6. Make the following changes:

Change the managedDiskName value to Disk4.

```
FILES O

in azure

in Azur
```

Change the sku name value to StandardSSD LRS.

```
resource managedDisk 'Microsoft.Compute/disks@2020-09-30' = {
  name: managedDiskName
  location: location
  sku: {
    name: 'StandardSSD_LRS'
}
```

Change the diskSizeinGiB value to 32.

```
diskSizeGB: 32
diskIOPSReadWrite: diskIopsReadWrite
diskMBpsReadWrite: diskMbpsReadWrite
}
```

7.Use Ctrl +S to save your changes.

```
azuredeploydisk.bicep

param diskIopsReadWrite int = 100

@description('Disk throughput value in MBps')
@minValue(1)
@maxValue(2000)
```

8. Now, deploy the template.

9. Confirm the disk was created.

kateryna [~]\$ az disk listoutput table						
Name	ResourceGroup	Location	Zones	Sku	SizeGb	ProvisioningState
az104-disk1	AZ104-RG3	eastus	1	Standard LRS	32	Succeeded
az104-disk2	AZ104-RG3	eastus	1	Standard LRS	32	Succeeded
az104-disk3	AZ104-RG3	eastus	1	Standard LRS	32	Succeeded
az104-disk4	AZ104-RG3	eastus	1	Standard LRS	32	Succeeded
Disk4	AZ104-RG3	eastus		StandardSSD LRS	32	Succeeded
kateryna [~]\$ 🗍			_		