

## Week-3 Assignment

1. Observe assigned Subscriptions Observe Azure Entra ID or create own Azure Entra ID in personal Azure account Create test users and groups Assign a RBAC role to user and test Create a custom role and assigned to users and test.

Microsoft Azure

Home > Subscriptions >

### Subscriptions

Chandigarh University (cuchd.in)

+ Add Manage Policies View Requests View eligible subscriptions Export to CSV

View list of subscriptions for which you have role-based access control (RBAC) permissions to manage Azure resources. To view subscriptions for which you have billing access, [click here](#)

Showing subscriptions in Chandigarh University directory. Don't see a subscription? [Switch directories](#)

Search for any field... Subscriptions: Filtered (1 of 1) My role == all Status == all Add filter

Subscription name ↑↓	Subscription ID ↑↓	My role ↑↓	Current cost	Secure Score ↑↓	Parent management group ↑↓	Status ↑↓
Azure for Students	e57dc405-3585-4629-9ab9-c5ef4311cd33	Owner	₹4,191.45	22%	Tenant Root Group	Active

Microsoft Azure

Home > Subscriptions > Azure for Students

### Subscriptions

Chandigarh University (cuchd.in)

+ Add Manage Policies

View list of subscriptions for which you have role-based access control (RBAC) permissions to manage Azure resources. To view subscriptions for which you have billing access, [click here](#)

Showing subscriptions in Chandigarh University directory. Don't see a subscription? [Switch directories](#)

Search for any field... Subscriptions: Filtered (1 of 1) My role == all Status == all Add filter

Subscription name ↑↓

Azure for Students

### Azure for Students | Access control (IAM)

Subscription

Search for any field... ac

+ Add Download role assignments Edit columns Refresh Delete Feedback

Activity log Access control (IAM) Security Settings

Programmatic deployment Billing properties Usage + quotas Deployment stacks

Check access Role assignments Roles Deny assignments Classic administrators

Number of role assignments for this subscription 3

Privileged 3

View assignments

Search by name or email

Type: All Role: All Scope: All scopes Group by: Role

Name ↑↓	Type ↑↓	Role ↑↓	Scope ↑↓	Condition ↑↓
Owner (2)				
Atinshay Awasthi 228DO10007@cuchd.in	User	Owner	This resource	Add
Atinshay Awasthi 228DO10007@cuchd.in	User	Owner	This resource	Add
User Access Administrator (1)				
Admin Erg admin_erp@cuchd.in	User	User Access Administrator	Root (inherited)	None

Showing 1 - 3 of 3 results.

Microsoft Azure

Home > Subscriptions > Azure for Students | Access control (IAM) >

### Add role assignment

Role Members Conditions Review + assign

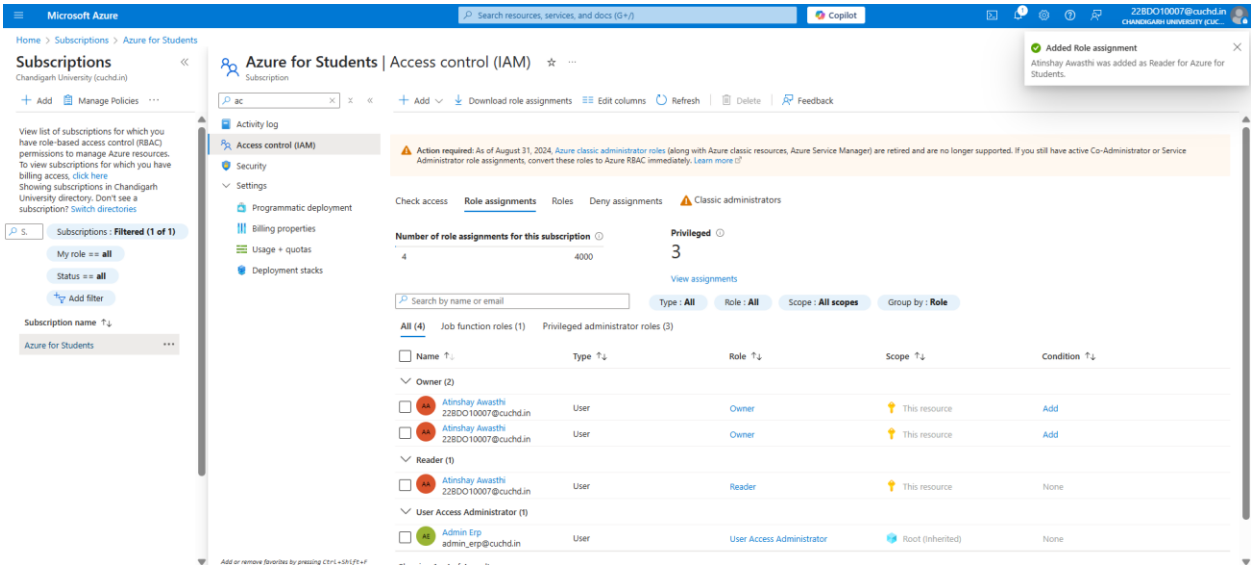
Role Reader

Scope /subscriptions/e57dc405-3585-4629-9ab9-c5ef4311cd33

Members

Name	Object ID	Type
Atinshay Awasthi	bbbd82b0-d254-4e95-88aa-55330d199b32	User

Description No description



Home > Subscriptions > Azure for Students | Access control (IAM) >

## Create a custom role

Basics Permissions Assignable scopes JSON Review + create

### Basics

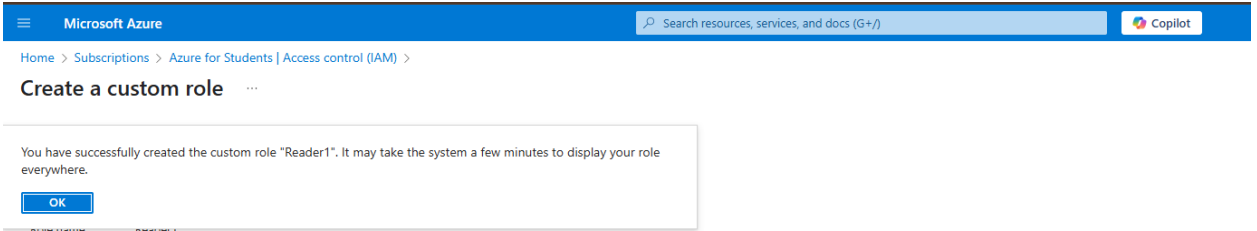
Role name Reader1  
Role description No role description provided

### Permissions

Action Microsoft.Resources/subscriptions/read

### Assignable Scopes

Scope /subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633



Microsoft Azure

Search resources, services, and docs (G+)

Copilot

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Home > Subscriptions > Azure for Students

Subscriptions

Chandigarh University (cuchd.in)

+ Add | Manage Policies

View list of subscriptions for which you have role-based access control (RBAC) permissions to manage Azure resources. To view subscriptions for which you have billing access, [click here](#). Showing subscriptions in Chandigarh University directory. Don't see a subscription? [Switch directories](#).

Subscriptions: Filtered (1 of 1)

My role == all

Status == all

+ Add filter

Subscription name

Azure for Students

Azure for Students | Access control (IAM)

Subscription

+ Add | Download role assignments | Edit columns | Refresh | Delete | Feedback

Activity log

Access control (IAM)

Security

Settings

Programmatic deployment

Billing properties

Usage + quotas

Deployment stacks

Check access

Role assignments

Roles

Deny assignments

Classic administrators

Number of role assignments for this subscription

4

4000

Privileged

3

View assignments

Search by name or email

Type: All

Role: All

Scope: All scopes

Group by: Role

All (4)

Job function roles (1)

Privileged administrator roles (3)

Name

Type

Role

Scope

Condition

Home > Subscriptions > Azure for Students | Access control (IAM)

## Add role assignment

[Role](#) [Members](#) [Conditions](#) [Review + assign](#)

A role definition is a collection of permissions. You can use the built-in roles or you can create your own custom roles. [Learn more](#)

[Job function roles](#) [Privileged administrator roles](#)

Grant access to Azure resources based on job function, such as the ability to create virtual machines.

Search by role name, description, permission, or ID

Type: Custom role

Category: All

Name	Description	Type	Category	Details
Reader1		CustomRole	None	<a href="#">View</a>

Showing 1 - 1 of 1 results.

Microsoft Azure

Search resources, services, and docs (G+)

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Home > Azure for Students

Azure for Students | Access control (IAM)

Subscription

+ Add | Download role assignments | Edit columns | Refresh | Delete | Feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Security

Resource visualizer

Events

Cost Management

Cost analysis

Cost alerts

Budgets

Advisor recommendations

Billing

Billing profile invoices

Settings

Programmatic deployment

Billing properties

Resource groups

Resources

View assignments

Search by name or email

Type: All

Role: All

Scope: All scopes

Group by: Role

All (5)

Job function roles (2)

Privileged administrator roles (3)

Name

Type

Role

Scope

Condition

Owner (2)

Atinshay Awasthi

228DO10007@cuchd.in

User

Owner

This resource

Access

Atinshay Awasthi

228DO10007@cuchd.in

User

Owner

This resource

Access

Reader (1)

Atinshay Awasthi

228DO10007@cuchd.in

User

Reader

This resource

No access

Reader1 (1)

Atinshay Awasthi

228DO10007@cuchd.in

User

Reader1

This resource

No access

User Access Administrator (1)

Admin Erp

admin\_erp@cuchd.in

User

User Access Administrator

Root (Inherited)

No access

Showing 1 - 5 of 5 results.

## 2. Create Virtual machine and Vnet from Azure CLI.

```
Azure Cloud Shell
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code NS7EDDF2K to authenticate.
This code will expire in 15 minutes.
Authenticated.
Do you want to save these connection settings for future logins? [y/n]
> y
Your connection settings have been saved for future logins.
Requesting a cloud shell instance...
Succeeded.
Requesting a terminal (this might take a while)...

Welcome to Azure Cloud Shell

Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

Your Cloud Shell session will be ephemeral so no files or system changes will persist beyond your current session.
atinshay [ ~ ]$

atinshay [ ~ ]$ # Basic Configuration
LOCATION="eastus"
RESOURCE_GROUP="MyResourceGroup"
VNET_NAME="MyVNet"
SUBNET_NAME="MySubnet"
VM_NAME="MyVM"
IMAGE="UbuntuLTS"
VM_SIZE="Standard_B1s"
ADMIN_USERNAME="azureuser"
atinshay [ ~ ]$ az group create \
  --name $RESOURCE_GROUP \
  --location $LOCATION

{
  "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup",
  "location": "eastus",
  "managedBy": null,
  "name": "MyResourceGroup",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
```

```

atinshay [ ~ ]$ az network vnet create \
--resource-group $RESOURCE_GROUP \
--name $VNET_NAME \
--address-prefix 10.0.0.0/16 \
--subnet-name $SUBNET_NAME \
--subnet-prefix 10.0.0.0/24
{
  "newVNet": {
    "addressSpace": {
      "addressPrefixes": [
        "10.0.0.0/16"
      ]
    },
    "enableDdosProtection": false,
    "etag": "W/\"0da62570-f231-453c-8c19-0baeedc1ee8c\"",
    "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Network/virtualNetworks/MyVNet",
    "location": "eastus",
    "name": "MyVNet",
    "privateEndpointVNetPolicies": "Disabled",
    "provisioningState": "Succeeded",
    "resourceGroup": "MyResourceGroup",
    "resourceGuid": "0ec6d574-a532-4d11-915b-15fa42c83366",
    "subnets": [
      {
        "addressPrefix": "10.0.0.0/24",
        "delegations": [],
        "etag": "W/\"0da62570-f231-453c-8c19-0baeedc1ee8c\"",
        "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Network/virtualNetworks/MyVNet/subnets/MySubnet",
        "name": "MySubnet",
        "privateEndpointNetworkPolicies": "Disabled",
        "privateLinkServiceNetworkPolicies": "Enabled",
        "provisioningState": "Succeeded",
        "resourceGroup": "MyResourceGroup",
        "resourceType": "Microsoft.Network/virtualNetworks/subnets"
      }
    ],
    "type": "Microsoft.Network/virtualNetworks",
    "virtualNetworkPeerings": []
  }
}

```

```

atinshay [ ~ ]$ az network public-ip create \
--resource-group $RESOURCE_GROUP \
--name ${VM_NAME}PublicIP
[Coming breaking change] In the coming release, the default behavior will be changed as follows when sku is Standard and zone is not provided: For zonal regions, you will get a zone-redundant IP indicated by zones:["1","2","3"]; For non-zonal regions, you will get a non zone-redundant IP indicated by zones:null
{
  "publicIp": {
    "ddosSettings": {
      "protectionMode": "VirtualNetworkInherited"
    },
    "etag": "W/\"566c0373-6fc3-42fc-bb5c-6f3c68a218e8\"",
    "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Network/publicIPAddresses/MyVMPublicIP",
    "idleTimeoutInMinutes": 4,
    "ipAddress": "172.191.211.178",
    "ipTags": [],
    "location": "eastus",
    "name": "MyVMPublicIP",
    "provisioningState": "Succeeded",
    "publicIPAddressVersion": "IPv4",
    "publicIPAllocationMethod": "Static",
    "resourceGroup": "MyResourceGroup",
    "resourceGuid": "93f0b9d4-2222-4c79-b2fd-f60071f50945",
    "sku": {
      "name": "Standard",
      "tier": "Regional"
    },
    "type": "Microsoft.Network/publicIPAddresses"
  }
}

```

```

atinshay [ ~ ]$ az network nsg create \
--resource-group $RESOURCE_GROUP \
--name ${VM_NAME}NSG
{
  "NewNSG": {
    "defaultSecurityRules": [
      {
        "access": "Allow",
        "description": "Allow inbound traffic from all VMs in VNET",
        "destinationAddressPrefix": "VirtualNetwork",
        "destinationAddressPrefixes": [],
        "destinationPortRange": "*",
        "destinationPortRanges": [],
        "direction": "Inbound",
        "etag": "W/\"8b2e1fia-e0e9-4149-8c12-e019782d7126\"",
        "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Network/networkSecurityGroups/MyVMNSG/defaultSecurityRules/AllowVnetInBound",
        "name": "AllowVnetInBound",
        "priority": 65000,
        "protocol": "*",
        "provisioningState": "Succeeded",
        "resourceGroup": "MyResourceGroup",
        "sourceAddressPrefix": "VirtualNetwork",
        "sourceAddressPrefixes": [],
        "sourcePortRange": "*",
        "sourcePortRanges": [],
        "type": "Microsoft.Network/networkSecurityGroups/defaultSecurityRules"
      },
      {
        "access": "Allow",
        "description": "Allow inbound traffic from azure load balancer",
        "destinationAddressPrefix": "*",
        "destinationAddressPrefixes": [],
        "destinationPortRange": "*",
        "destinationPortRanges": [],
        "direction": "Inbound",
        "etag": "W/\"8b2e1fia-e0e9-4149-8c12-e019782d7126\"",
        "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Network/networkSecurityGroups/MyVMNSG/"
      }
    ]
  }
}

```

```

atinshay [ ~ ]$ az network nic create \
--resource-group $RESOURCE_GROUP \
--name ${VM_NAME}NIC \
--vnet-name $VNET_NAME \
--subnet $SUBNET_NAME \
--network-security-group ${VM_NAME}NSG \
--public-ip-address ${VM_NAME}PublicIP
{
  "NewNIC": {
    "auxiliaryMode": "None",
    "auxiliarySku": "None",
    "disableTelemetry": false,
    "dnsSettings": {
      "appliedDnsServers": [],
      "dnsServers": [],
      "internalDomainNameSuffix": "otk2mdrsuuiulek1cx3efsbmg.bx.internal.cloudapp.net"
    },
    "enableAcceleratedNetworking": false,
    "enableIPForwarding": false,
    "etag": "W/\"85e1b323-3133-4b02-bbeb-0b1dbbdc57\"",
    "hostedWorkloads": [],
    "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Network/networkInterfaces/MyVMNIC",
    "ipConfigurations": [
      {
        "etag": "W/\"85e1b323-3133-4b02-bbeb-0b1dbbdc57\"",
        "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Network/networkInterfaces/MyVMNIC/ipCo
nfigurations/ipconfig1",
        "name": "ipconfig1",
        "primary": true,
        "privateIpAddress": "10.0.0.4",
        "privateIpAddressVersion": "IPv4",
        "privateIPAllocationMethod": "Dynamic",
        "provisioningState": "Succeeded",
        "publicIpAddress": null
      }
    ]
  }
}

atinshay [ ~ ]$ IMAGE="Ubuntu2204"
atinshay [ ~ ]$ export IMAGE="Ubuntu2204"
atinshay [ ~ ]$ az vm create \
--resource-group $RESOURCE_GROUP \
--name $VM_NAME \
--nics ${VM_NAME}NIC \
--image $IMAGE \
--size $VM_SIZE \
--admin-username $ADMIN_USERNAME \
--generate-ssh-keys
SSH key files '/home/atinshay/.ssh/id_rsa' and '/home/atinshay/.ssh/id_rsa.pub' have been generated under ~/.ssh to allow SSH access to the VM. If using mac
hines without permanent storage, back up your keys to a safe location.
{
  "fqdns": "",
  "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.Compute/virtualMachines/MyVM",
  "location": "eastus",
  "macAddress": "00-0D-3A-10-C4-2C",
  "powerState": "VM running",
  "privateIpAddress": "10.0.0.4",
  "publicIpAddress": "172.191.211.178",
  "resourceGroup": "MyResourceGroup",
  "zones": ""
}

atinshay [ ~ ]$ az vm show \
--resource-group $RESOURCE_GROUP \
--name $VM_NAME \
--show-details \
--query [publicips] \
--output tsv
172.191.211.178

```

### 3. Create and assign a any policy at subscription level.

The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with 'Home > Policy | Definitions'. A notification banner at the top right states 'Creating policy definition succeeded' with the message 'Creating policy definition 'Policy1' in 'Azure for Students' was successful.

The main content area displays the details for 'Policy1'. It includes a table with the following information:

Definition	Assignments (0)	Parameters (1)																
<p><b>Policy1</b></p> <p>Policy definition</p> <p>Assign policy Edit definition Duplicate definition Delete definition</p> <p><b>Essentials</b></p> <table border="1"> <tr> <td>Name</td> <td>: Policy1</td> <td>Definition location</td> <td>: Azure for Students</td> </tr> <tr> <td>Description</td> <td>: --</td> <td>Definition ID</td> <td>: /subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/providers/Microsoft.Authorization/policyDefinitio...</td> </tr> <tr> <td>Available Effects</td> <td>: Audit</td> <td>Type</td> <td>: Custom</td> </tr> <tr> <td>Category</td> <td>: Custom</td> <td>Mode</td> <td>: All</td> </tr> </table>	Name	: Policy1	Definition location	: Azure for Students	Description	: --	Definition ID	: /subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/providers/Microsoft.Authorization/policyDefinitio...	Available Effects	: Audit	Type	: Custom	Category	: Custom	Mode	: All		
Name	: Policy1	Definition location	: Azure for Students															
Description	: --	Definition ID	: /subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/providers/Microsoft.Authorization/policyDefinitio...															
Available Effects	: Audit	Type	: Custom															
Category	: Custom	Mode	: All															

The 'Parameters (1)' tab is selected, showing the following JSON configuration:

```

1 {
2   "properties": {
3     "displayName": "Policy1",
4     "policyType": "Custom",
5     "mode": "All",
6     "metadata": {
7       "category": "Custom",
8       "createdBy": "8bbd82b0-d354-4e95-88aa-55330d199b32",
9       "createdOn": "2025-06-22T13:31:28.028778Z",
10      "updatedBy": null,
11      "updatedOn": null
12    },
13    "version": "1.0.0",
14    "parameters": {
15      "allowedLocations": {
16        "type": "Array",
17        "metadata": {
18          "displayName": "Allowed locations",
19          "description": "The list of allowed locations for resources.",
20          "strongType": "location"
21        }
22      }
23    }
24  }
25 }

```

At the bottom right, there is a 'Give feedback' link.

Microsoft Azure

Search resources, services, and docs (G+/)

Copilot

228DO10007@cuchd.in  
CHANDIGARH UNIVERSITY EDUC...

Home > Policy | Definitions > Policy1 >

Assign policy

X

BasicsParametersRemediationNon-compliance messagesReview + create

Basics

Scope

Azure for Students

Exclusions

--

Policy definition

Policy1

Assignment name

Policy1

Description

--

Policy enforcement

Default

Assigned by

Atinshay Awasthi

Advanced

Resource selectors

No selectors associated with this assignment.

Overrides

No overrides associated with this assignment.

Parameters

Parameters

No parameter changes detected.

Remediation

Create a Managed Identity

No managed identity associated with this assignment.

Non-compliance messages

Non-compliance messages

No non-compliance messages associated with this assignment.

PreviousNextCreate

Give feedback

Microsoft Azure

Search resources, services, and docs (G+/)

Home > Policy | Compliance >

Assign policy

BasicsParametersRemediationNon-compliance messagesReview + create

Basics

Scope

Azure for Students

Exclusions

--

Policy definition

Policy1

Assignment name

Policy1

Description

--

Policy enforcement

Default

Assigned by

Atinshay Awasthi

Advanced

Resource selectors

No selectors associated with this assignment.

Overrides

No overrides associated with this assignment.

Parameters

Parameters

No parameter changes detected.

Remediation

Create a Managed Identity

No managed identity associated with this assignment.

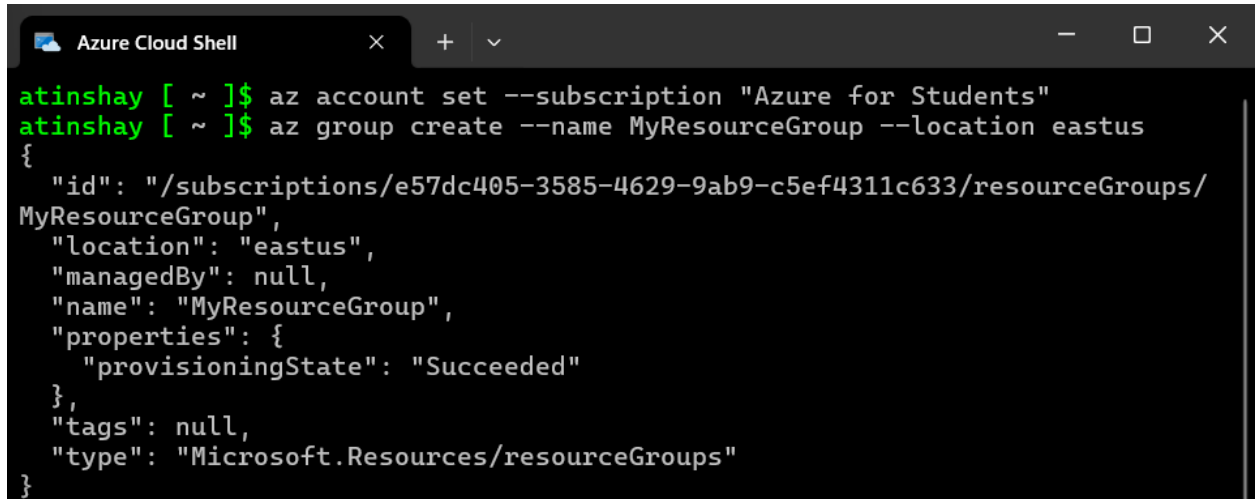
Non-compliance messages

Non-compliance messages

No non-compliance messages associated with this assignment.

PreviousNextCreate

4. Create an Azure key vault and store secrets. Configure access policies for the Key Vault to allow authorized users or applications to manage keys and secrets. retrieve secret from key vault using azure CLI.



```
Azure Cloud Shell
atinshay [ ~ ]$ az account set --subscription "Azure for Students"
atinshay [ ~ ]$ az group create --name MyResourceGroup --location eastus
{
  "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup",
  "location": "eastus",
  "managedBy": null,
  "name": "MyResourceGroup",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
```



```
Azure Cloud Shell
atinshay [ ~ ]$ az keyvault create --name MyKeyVaultCU007 --resource-group MyResourceGroup --location eastus
{
  "id": "/subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyResourceGroup/providers/Microsoft.KeyVault/vaults/MyKeyVaultCU007",
  "location": "eastus",
  "name": "MyKeyVaultCU007",
  "properties": {
    "accessPolicies": [],
    "createMode": null,
    "enablePurgeProtection": null,
    "enableRbacAuthorization": true,
    "enableSoftDelete": true,
    "enabledForDeployment": false,
    "enabledForDiskEncryption": null,
    "enabledForTemplateDeployment": null,
    "hsmPoolResourceId": null,
    "networkAcls": null,
    "privateEndpointConnections": null,
    "provisioningState": "Succeeded",
    "publicNetworkAccess": "Enabled",
    "sku": {
      "family": "A",
      "name": "standard"
    },
    "softDeleteRetentionInDays": 90,
    "tenantId": "34bd8bed-2ac1-41ae-9f08-4e0a3f11706c",
    "vaultUri": "https://mykeyvaultcu007.vault.azure.net/"
  },
  "resourceGroup": "MyResourceGroup",
  "systemData": {
    "createdAt": "2025-06-22T14:05:14.192000+00:00",
    "createdBy": "22BD010007@cuchd.in",
    "createdByType": "User",
    "lastModifiedAt": "2025-06-22T14:05:14.192000+00:00",
    "lastModifiedBy": "22BD010007@cuchd.in",
    "lastModifiedByType": "User"
  },
  "tags": {},
  "type": "Microsoft.KeyVault/vaults"
}
```

```

atinshay [ ~ ]$ az keyvault secret set \
--vault-name MyKeyVaultCU007 \
--name MySecretName \
--value "ThisIsASecretValue"
{
  "attributes": {
    "created": "2025-06-22T14:24:56+00:00",
    "enabled": true,
    "expires": null,
    "notBefore": null,
    "recoverableDays": 90,
    "recoveryLevel": "Recoverable+Purgeable",
    "updated": "2025-06-22T14:24:56+00:00"
  },
  "contentType": null,
  "id": "https://mykeyvaultcu007.vault.azure.net/secrets/MySecretName/9daa229a8cde44359e3cf99776801601",
  "kid": null,
  "managed": null,
  "name": "MySecretName",
  "tags": {
    "file-encoding": "utf-8"
  },
  "value": "ThisIsASecretValue"
}

atinshay [ ~ ]$ az keyvault secret show \
--vault-name MyKeyVaultCU007 \
--name MySecretName \
--query value -o tsv
ThisIsASecretValue
atinshay [ ~ ]$ |

```

## 5. Create a VM from Powershell.

```

PS C:\Users\ATINSHAY> $resourceGroup = "MyNewResourceGroup"
PS C:\Users\ATINSHAY> $location = "EastUS"
PS C:\Users\ATINSHAY> $vmName = "MyNewVM"
PS C:\Users\ATINSHAY> $vnetName = "MyNewVnet"
PS C:\Users\ATINSHAY> $subnetName = "MyNewSubnet"
PS C:\Users\ATINSHAY> $ipName = "MyNewPublicIP"
PS C:\Users\ATINSHAY> $nicName = "MyNewNIC"
PS C:\Users\ATINSHAY> $nsgName = "MyNewNSG"
PS C:\Users\ATINSHAY> $vmSize = "Standard_B1s" # Budget-friendly VM size
PS C:\Users\ATINSHAY> New-AzResourceGroup -Name $resourceGroup -Location $location

ResourceGroupName : MyNewResourceGroup
Location           : eastus
ProvisioningState  : Succeeded
Tags              :
ResourceId         : /subscriptions/e57dc405-3585-4629-9ab9-c5ef4311c633/resourceGroups/MyNewResourceGroup

PS C:\Users\ATINSHAY> $vnet = New-AzVirtualNetwork -ResourceGroupName $resourceGroup -Location $location -Name $vnetName -AddressPrefix "10.1.0.0/16"
PS C:\Users\ATINSHAY> Add-AzVirtualNetworkSubnetConfig -Name $subnetName -AddressPrefix "10.1.0.0/24" -VirtualNetwork $vnet | Set-AzVirtualNetwork

ResourceGroupName Name      Location ProvisioningState EnableDdosProtection
-----
MyNewResourceGroup MyNewVnet eastus Succeeded False

```

```

PS C:\Users\ATINSHAY> $nsgRule = New-AzNetworkSecurityRuleConfig -Name "Allow-SSH" -Protocol "Tcp" -Direction "Inbound" -Priority 1000 -SourceAddressPrefix "*" -SourcePortRange "*" -DestinationAddressPrefix "*" -DestinationPortRange 22 -Access "Allow"
PS C:\Users\ATINSHAY> $nsg = New-AzNetworkSecurityGroup -ResourceGroupName $resourceGroup -Location $location -Name $nsgName -SecurityRules $nsgRule
PS C:\Users\ATINSHAY> $pip = New-AzPublicIpAddress -Name $ipName -ResourceGroupName $resourceGroup -Location $location -AllocationMethod Static -Sku Standard
PS C:\Users\ATINSHAY> $vnet = Get-AzVirtualNetwork -Name $vnetName -ResourceGroupName $resourceGroup
PS C:\Users\ATINSHAY> $subnet = Get-AzVirtualNetworkSubnetConfig -Name $subnetName -VirtualNetwork $vnet
PS C:\Users\ATINSHAY> $nic = New-AzNetworkInterface -Name $nicName -ResourceGroupName $resourceGroup -Location $location -SubnetId $subnet.Id -PublicIpAddressId $pip.Id -NetworkSecurityGroupId $nsg.Id

```

```

PS C:\Users\ATINSHAY> $cred = Get-Credential -Message "Enter a username and password for your new VM"
PS C:\Users\ATINSHAY> $vmConfig = New-AzVMConfig -VMName $vmName -VMSize $vmSize |
>> Set-AzVMOperatingSystem -Linux -ComputerName $vmName -Credential $cred -DisablePasswordAuthentication:$false |
>> Set-AzVMSourceImage -PublisherName "Canonical" -Offer "UbuntuServer" -Skus "18.04-LTS" -Version "latest" |
>> Add-AzVMNetworkInterface -Id $nic.Id

```

6. A. Schedule a Daily backup of VM at 3:AM using vault 1. Create an Alert rule for VM CPU percentage: Criteria: CPU% MoreThan 80 There Should be analert on Email." B.Provision backups in backup center 2. Schedule a Daily backup of VM at 3:AM using vault. Configure Retention period in backup policy and retain an old backup.

# Create Recovery Services vault

- \* Basics
- Redundancy
- Encryption
- Vault properties
- Networking
- Tags
- Review + create

## Project Details

Select the subscription and the resource group in which you want to create the vault.

Subscription \*

Azure for Students

Resource group \*

(New) vaultgroup

Create new

## Instance Details

Vault name \*

vault1

Region \*

Central India

**i** Cross Subscription Restore is enabled by default for all vaults. Visit vault 'Properties' to disable the same. [Learn more.](#)

- Review + create
- Next: Redundancy
- Feedback

# Create Recovery Services vault

- \* Basics
- Redundancy
- Encryption
- Vault properties
- Networking
- Tags
- Review + create

## Summary

### Basics

Subscription	Azure for Students
Resource group	vaultgroup
Vault name	vault1
Region	Central India

### Redundancy

Backup Storage Redundancy	Geo-redundant
Cross Region Restore	Disable

### Vault properties

Immutability	Disabled
--------------	----------

### Networking

Connectivity method	Allow public access from all networks
---------------------	---------------------------------------

Microsoft Azure

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Copilot

22/01/2025 10:07 AM

Microsoft Recovery Services

Home >

Microsoft.RecoveryServicesV2-1750608079028 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Overview

Inputs

Outputs

Template

✔ Your deployment is complete

Deployment name : Microsoft.RecoveryServicesV2-1750608079028

Subscription : Azure for Students

Resource group : vaultgroup

Start time : 6/22/2025, 9:31:45 PM

Correlation ID : fb1bf032-abeb-4096-b6da-e6cb552838a1

Deployment details

Next steps

Go to resource

Give feedback

Tell us about your experience with deployment

Deployment succeeded

Deployment 'Microsoft.RecoveryServicesV2-1750608079028' to resource group 'vaultgroup' was successful.

Go to resource Pin to dashboard

Cost management

Get notified to stay within your budget and prevent unexpected charges on your bill.

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...

22/01/2025 10:07 AM

Home >

Microsoft.RecoveryServicesV2-1750608079028 | Overview >

vault1 >

Backup Goal

...

The storage replication is set to Geo-Redundant. This option cannot be changed later. Before proceeding further, click here. →

Where is your workload running?

Azure

What do you want to backup?

Virtual machine

Step: Configure Backup

Backup

Give feedback

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CHANDIGARH UNIVERSITY (GUC)

Home > Microsoft.RecoveryServicesV2-1750608079028 | Overview > vault1 > Backup Goal >

Configure backup

vault1

Policy sub type \*

Enhanced

Standard

Multiple backups per day

Once-a-day backup

Up to 30 days operational tier retention

Up to 5 days operational tier retention

Support for Trusted Launch Azure VM

Support for VMs with Ultra Disks and Premium SSD v2

Backup policy \*

EnhancedPolicy

Create a new policy

Protecting a VM with enhanced policy can incur additional snapshot charges. Please note that once you enable a VM backup with enhanced policy, changing to standard policy type is not possible. [Learn more](#)

Policy details

Full backup

Backup frequency

Every 4 hour(s) starting 8:00 AM UTC for 12 Hour(s)

Instant restore

Retain instant recovery snapshot(s) for 2 day(s)

Retention of daily backup point

Retain backup taken every day for 30 Day(s)

Consistency type

Application or file-system consistent

Virtual machines

Name	Resource group	Disks	Include future disks
MyWebVM	group1	MyWebVM_OsDisk_1_7919f26de0f646aaa2822fafef2...	<input checked="" type="checkbox"/>

Add

Selective disk backup option allows you to include or exclude specific data disks based on their LUN number, OS Disk exclusion.

Enable backup

Download a template for automation

Give feedback

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Home >

ConfigureProtection-1750608405128 | Overview

Deployment

Search

Delete

Cancel

Redeploy

Download

Refresh

Overview

Inputs

Outputs

Template

Your deployment is complete

Deployment name : ConfigureProtection-1750608405128

Subscription : Azure for Students

Resource group : vaultgroup

Start time : 6/22/2025, 9:36:47 PM

Correlation ID : 86c48335-edd0-4e43-bfa5-5b16bc9006c9

Deployment details

Next steps

Go to resource

Deployment succeeded

Deployment 'ConfigureProtection-1750608405128' to resource group 'vaultgroup' was successful.

Go to resource

Go to resource group

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Home >

CreatePolicy-1750608656304 | Overview

Deployment

Search

Delete

Cancel

Redeploy

Download

Refresh

Overview

Inputs

Outputs

Template

Your deployment is complete

Deployment name : CreatePolicy-1750608656304

Subscription : Azure for Students

Resource group : vaultgroup

Start time : 6/22/2025, 9:40:58 PM

Correlation ID : c4659b2d-3caf-401f-96fc-89069d96bc7

Deployment details

Next steps

Go to resource

Resource	Type	Status	Operation details
vault1/DailyBackupPolicy	Microsoft.RecoveryServices/vault	OK	<a href="#">Operation details</a>

Next steps

Go to resource

Cost management

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Create action group

- Basics
- Notifications
- Actions
- Tags
- Review + create

This is a summary of your action group. Please review to ensure the information is correct and consider [Azure Monitoring Pricing](#) and the [Azure Privacy Statement](#).

Basics

Subscription	Azure for Students
Resource group	alertgroup
Region	global
Action group name	alertgroup
Display name	alertgroup

Notifications

None

Actions

None

Tags

None

Create

Previous

Create an alert rule

- Scope
- Condition
- Actions
- Details
- Tags
- Review + create

Configure when the alert rule should trigger by selecting a signal and defining its logic.

Signal name \* ⓘ See all signals

Percentage CPU

Alert logic

ⓘ We have set the condition configuration automatically based on popular settings for this metric. Please review and make changes as needed.

Threshold type ⓘ Static Dynamic

Aggregation type ⓘ Average

Value is ⓘ Greater than

Threshold \* ⓘ 80 %

When to evaluate

Check every ⓘ 1 minute

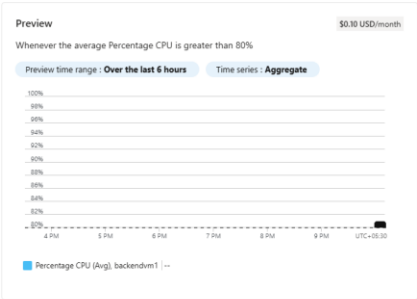
Lookback period ⓘ 5 minutes

+ Add condition

Review + create

Previous

Next: Actions >



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Copilot

Home > Compute infrastructure | Virtual machines > BackendVM1 | Alerts >

## Create an alert rule

Scope

Resource

Azure for Students > Group1 > BackendVM1

Condition

Signal name

Percentage CPU

Operator

Greater than

Aggregation type

Average

Threshold value

80

Lookback period

5 minutes

Check every

1 minute

Details

Project details

Subscription

Azure for Students

Resource group

alertgroup

Region

global

Alert rule details

Alert rule name

alert

Alert rule description

Severity

3 - Informational

Enable upon creation

☒

Automatically resolve alerts

☒

Create

Previous

Microsoft Azure

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Home > Compute infrastructure | Virtual machines > BackendVM1

Compute infrastructure | Virtual machines

Virtual machines

Overview

All resources

Infrastructure

Virtual machines

Virtual Machine Scale Set (VMSS)

Compute Fleet

Disks + images

Capacity + placement

Related services

Help

Showing 1 - 3 of 3. Display count: auto

BackendVM1 | Alerts

Overview

Resource visualizer

Connect

Network settings

Load balancing

Settings

Properties

Availability + scale

Security

Microsoft Defender for Cloud

Operations

Health monitoring

Monitoring

Alerts

Diagnostic settings

Logs

Help

View as timeline (preview)

Create

Set up recommended alerts

Alert rules

Action groups

Alert processing rules

Search

Resource name: BackendVM1

Time range: Past 24 hours

Add filter

More (2)

Total alerts: 0

Critical: 0

Error: 0

Warning: 0

Informational: 0

Verbose: 0

No grouping

Name ↑

Severity ↑

Affected resource ↑

Alert condition ↑

User response ↑

Fire time ↑

No alerts found

Try changing your search or choose a different scope level if you don't see what you're looking for.

Clear filters