

# DVS Technologies

## Dvs Technologies Azure adminstration

Compiled and Scrutinized by  
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### Words To The Students

Though we have taken utmost efforts to present you this book error free, but still it may contain some errors or mistakes. Students are encouraged to bring, if there are any mistakes or errors in this document to our notice. So that it may be rectified in the next edition of this document.

**“Suppressing your doubts is Hindering your growth”.**

We urge you to work hard and make use of the facilities we are providing to you, because there is no substitute for hard work. We wish you all the best for your future.

**“The grass isn’t greener on the other side; the grass is greener where you water it.”**

You and your suggestions are valuable to us; Help us to serve you better. In case of any suggestions, grievance, or complaints, please feel free to write us your suggestions, grievance and feedback on the following

**Dvs.training@gmail.com**

## 1 Azure Active Directory - Introduction

AD stands for active directory. In simple if I want to grant the permissions to other users who want to login to azure portal how are we going to grant them the permissions?? We can make use of our azure AD which works based on Resource based access control.

We can grant permissions to users,groups,application etc ..



**Azure tenant** - This is a dedicated and trusted instance of Azure AD.

**Azure AD directory** - Each Azure tenant has a dedicated and trusted Azure AD directory. This includes the tenant's users , groups and applications and is used for performing identity and access management onto resources

Every azure account will have a subscription and every subscription will be associated with respective AD tenant. We can create more tenants and associate them to diff subscriptions. Main goal for using the tenants with subscriptions is to grant permissions for end user to access the azure resources.

Microsoft Azure | Search resources, services, and docs (G+)

Home > **Default Directory | Overview**

Overview | Manage tenants | What's new | Preview features | Got feedback?

Overview | Monitoring | Tutorials

Search your tenant

**Basic information**

Name	Default Directory	Users	2
Tenant ID	12fc3214-7a7c-4252-baac-cfdb550601a8	Groups	0
Primary domain	shahanaigmail.onmicrosoft.com	Applications	1
License	Azure AD Free	Devices	0

**Alerts**

**Upcoming TLS 1.0, 1.1 and 3DES deprecation**  
Please enable support for TLS 1.2 on clients(applications/platform) to avoid any service impact.  
[Learn more](#)

My feed

Microsoft Azure | Search resources, services, and docs (G+)

Home > Default Directory > **Switch tenant**

+ Create | Refresh | Columns | Switch | Delete | Leave tenant | Make default tenant | More information | Got feedback?

Current tenant: Default Directory

Search tenants | Add filters

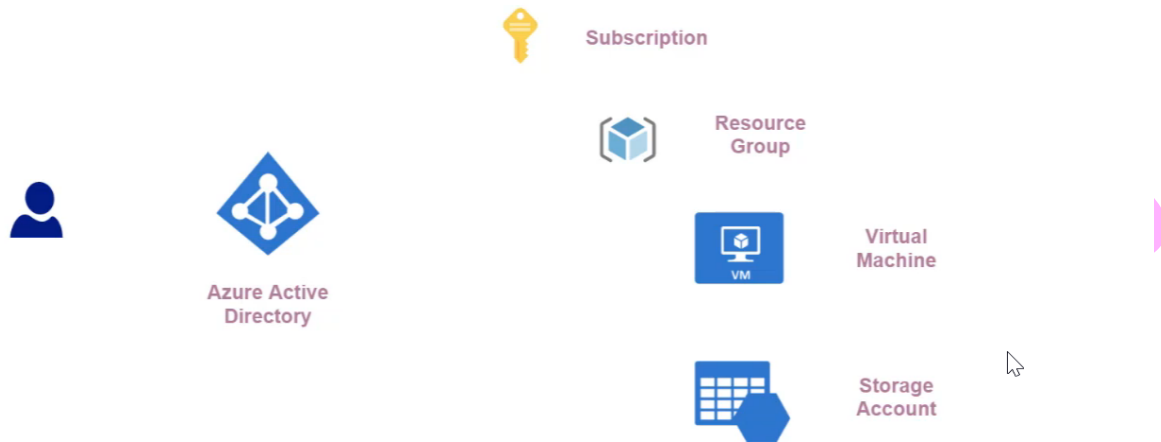
Showing 1 of 1 results

Organization name	Domain name	Tenant type	Organization ID	Favorites
<input type="checkbox"/> Default Directory (Default)	shahanaigmail.onmicrosoft.com	Azure Active Directory	12fc3214-7a7c-4252-baac-cfdb550601a8	<input checked="" type="checkbox"/>

Here if you see we can create the tenant based on our requirement. Default directory tenant is associated with the subscription.

## 2 Creating user without permissions

This is an authorization system that is built on top of Azure Resource Manager that allows to provide fine-grained access management of Azure resources



In the above picture if any user who want to access the azure resources we can grant him/her the permissions. Now these permissions we can grant based on pre-defined RBAC roles or you can create your own custom roles. We have reader, contributor & administrator roles for all the resources.

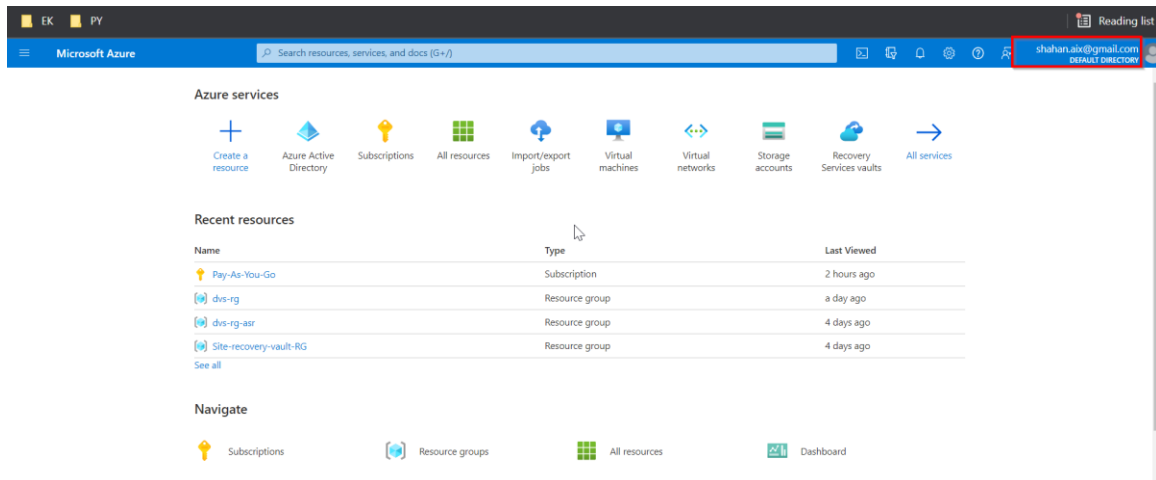
Whenever you want to grant the permissions/access to the user then you can grant access at the individual resource level OR at the resourcegroup level OR at the subscription level.

So the access depends where you are granting the user access.

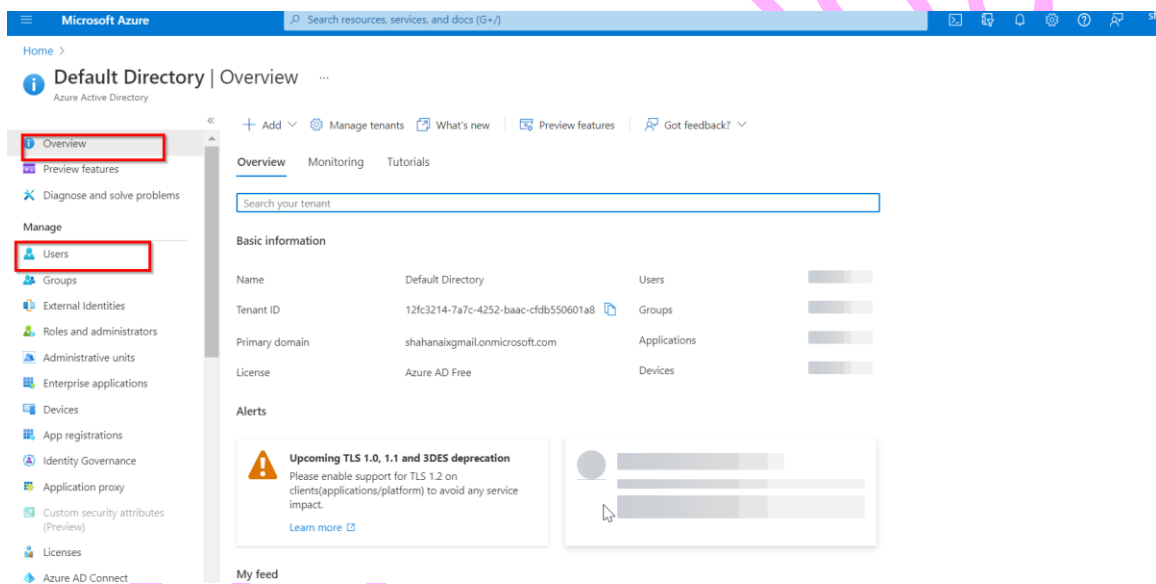
### Creating normal user:

Let say application developer called "dvsramesh" want to have access for the azure services. Hence we started creating his account using below.

Note: I have logged in as my root account "shahan.aix@gmail.com"



Now let's go to AD & try to create the user called "dvsramesh"



Microsoft Azure

Search resources, services, and docs (G+)

Home > Default Directory > Users | All users

Default Directory - Azure Active Directory

+ New user + New guest user Bulk operations Refresh Reset password Per-user MFA Delete user Columns Got feedback?

Search users

2 users found

Name	User principal na...	User type	Directory synced	Account enabled	Identity issuer	Company name	Creation type
dvstestuser	dvstestuser@shahanai...	Member	No	Yes	shahanaigmail.onmicro		
shahk shahan	shahanaik.gmail.com...	Member	No	Yes	MicrosoftAccount		

Activity

- Sign-in logs
- Audit logs
- Bulk operation results
- Troubleshooting + Support
- New support request

There are two ways of creating a user 1. create the user directly 2 Invite user over the mail

Microsoft Azure

Search resources, services, and docs (G+)

Home > Default Directory > Users >

New user

Default Directory

Got feedback?

**Create user**

Create a new user in your organization. This user will have a user name like `alice@shahanaigmail.onmicrosoft.com`. [I want to create users in bulk](#)

**Invite user**

Invite a new guest user to collaborate with your organization. The user will be emailed an invitation they can accept in order to begin collaborating. [I want to invite guest users in bulk](#)

Help me decide

**Identity**

User name \* ⓘ

dvsramesh ✓

shahanaigmail.onmicro... [The domain name I need isn't shown here](#)

Name \* ⓘ

dvsramesh ✓

First name

dvsramesh ✓

Last name

Create

Here if you want to create your own domain you can give it & create users for the same.

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

Home > Default Directory > Users >

## New user

Default Directory

Got feedback?

☐ Auto-generate password  
☒ Let me create the password

Initial password \*

**Groups and roles**

Groups 0 groups selected

Roles User

**Settings**

Block sign in Yes **No**

Usage location

**Job info**

**Create**

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

Home > Default Directory >

## Users | All users

Default Directory - Azure Active Directory

+ New user + New guest user Bulk operations Refresh Reset password Per-user MFA Delete user Columns Got feedback?

Search users Add filters

3 users found

	Name	User principal na...	User type	Directory synced	Account enabled	Identity issuer	Company name	Creation type
<input type="checkbox"/>	dvstestuser	dvstestuser@shahanai...	Member	No	Yes	shahanaixgmail.onmicro		
<input type="checkbox"/>	shaik shahan	shahanaix_gmail.com...	Member	No	Yes	MicrosoftAccount		
<input type="checkbox"/>	dvsramesh	dvsramesh@shahanai...	Member	No	Yes	shahanaixgmail.onmicro		

All users Deleted users Password reset User settings Diagnose and solve problems Activity Sign-in logs Audit logs Bulk operation results Troubleshooting + Support New support request

Now let's try to login with user "dvsramesh"

Microsoft Azure

Search resources, services, and docs (G+)

Home > Users > dvsramesh

**dvsramesh** | Profile

User

Manage

- Profile
- Assigned roles
- Administrative units
- Groups
- Applications
- Licenses
- Devices
- Azure role assignments
- Authentication methods

Activity

dvsramesh

dvsramesh@shahanaigmail.onmicrosoft.com

User Sign-ins

Group memberships

0

Nov 21 Nov 28 Dec 5 Dec 12 Dec 19

Creation time

12/20/2021, 12:28:56 PM

Identity

Name	dvramamsh	First name	dvramamsh	Last name	-- --
------	-----------	------------	-----------	-----------	-------

login.microsoftonline.com/organizations/oauth2/v2.0/authorize?redirect\_uri=https%3A%2F%2Fportal.azure.com%2Fsignin%2Findex%2F&respo...

Microsoft Azure

Sign in

to continue to Microsoft Azure

dvsramesh@shahanaigmail.onmicrosoft.com

No account? [Create one!](#)

Can't access your account?

Back Next

Sign in with GitHub

Sign in options


Microsoft Azure

Search resources, services, and docs (G+)

dvsramesh@shahanaig...  
DEFAULT DIRECTORY SHAHANA...

Welcome to Azure!


Don't have a subscription? Check out the following options.



**Start with an Azure free trial**

Get \$200 free credit toward Azure products and services, plus 12 months of popular free services.


[Start](#) [Learn more](#)



**Manage Azure Active Directory**

Manage access, set smart policies, and enhance security with Azure Active Directory.

[View](#) [Learn more](#)



**Access student benefits**

Get free software, Azure credit, or access Azure Dev Tools for Teaching after you verify your academic status.

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Azure services

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[Virtual machines](#)

[App Services](#)

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[Function App](#)

[More services](#)

Navigate

<https://portal.azure.com/#create/hub>

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Now we can see that user dvsramesh logged in to the console but he can't perform anything as it's just a dummy account without any permissions.

### 3 Access at the resource level

Let's create below infrastructure to support the below

Create two resource group & create two servers one each using root/admin account.

Microsoft Azure

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

Home > Virtual machines >

## Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

**Project details**

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

Subscription \* ⓘ Pay-As-You-Go

Resource group \* ⓘ (New) dvsg-1  
[Create new](#)

**Instance details**

Virtual machine name \* ⓘ myv1m-rg1 ✓

Region \* ⓘ (US) East US

Availability options ⓘ No infrastructure redundancy required

Security type ⓘ Standard

[Review + create](#) < Previous Next : Disks >

Home > Virtual machines >

## Create a virtual machine

Get help for full customization. [Learn more](#)

**Project details**

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

Subscription \* ⓘ Pay-As-You-Go

Resource group \* ⓘ (New) dvsrg-2  
[Create new](#)

**Instance details**

Virtual machine name \* ⓘ myvm2-rg2

Region \* ⓘ (US) East US

Availability options ⓘ No infrastructure redundancy required

Security type ⓘ Standard

Image \* ⓘ CentOS-based 7.8 - Gen1  
[See all images](#) | [Configure VM generation](#)

Azure Spot instance ⓘ ☐

[Review + create](#) [< Previous](#) [Next : Disks >](#)

Name ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓	Size ↑↓	Public IP address ↑↓	Disks ↑↓
<input type="checkbox"/> myvm1-rg1	Pay-As-You-Go	dvsrg-1	East US	Running	Linux	Standard_B1s	20.102.127.235	1
<input type="checkbox"/> myvm2-rg2	Pay-As-You-Go	DVSRG-2	East US	Creating	Linux	Standard_B1s	-	1

Now we have two servers running in two resource groups.

Granting permission at the resource level:

Let's grant permission for the user "dvsramesh" as reader role to "myvm1-rg1".

Microsoft Azure | Search resources, services, and docs (G+7)

Home > Virtual machines > myvm-rg1

**myvm-rg1 | Access control (IAM)**

Search (Ctrl+7)

+ Add Download role assignments Edit columns Refresh Remove Got feedback?

Overview Activity log **Access control (IAM)** Tags Diagnose and solve problems

Settings: Networking, Connect, Disks, Size, Security, Advisor recommendations, Extensions + applications, Continuous delivery, Availability + scaling, Configuration, Identity

**Add role assignment**  
Add co-administrator

**My access**  
View my level of access to this resource.  
[View my access](#)

**Check access**  
Review the level of access a user, group, service principal, or managed identity has to this resource. [Learn more](#)

Find   
User, group, or service principal  
Search by name or email address

**Grant access to this resource**  
Grant access to resources by assigning a role.  
[Add role assignment](#) [Learn more](#)

**View access to this resource**  
View the role assignments that grant access to this and other resources.  
[View](#) [Learn more](#)

**View deny assignments**  
View the role assignments that have been denied access to specific actions at this scope.

Microsoft Azure | Search resources, services, and docs (G+7)

Home > Virtual machines > myvm-rg1 >

**Add role assignment**

Got feedback?

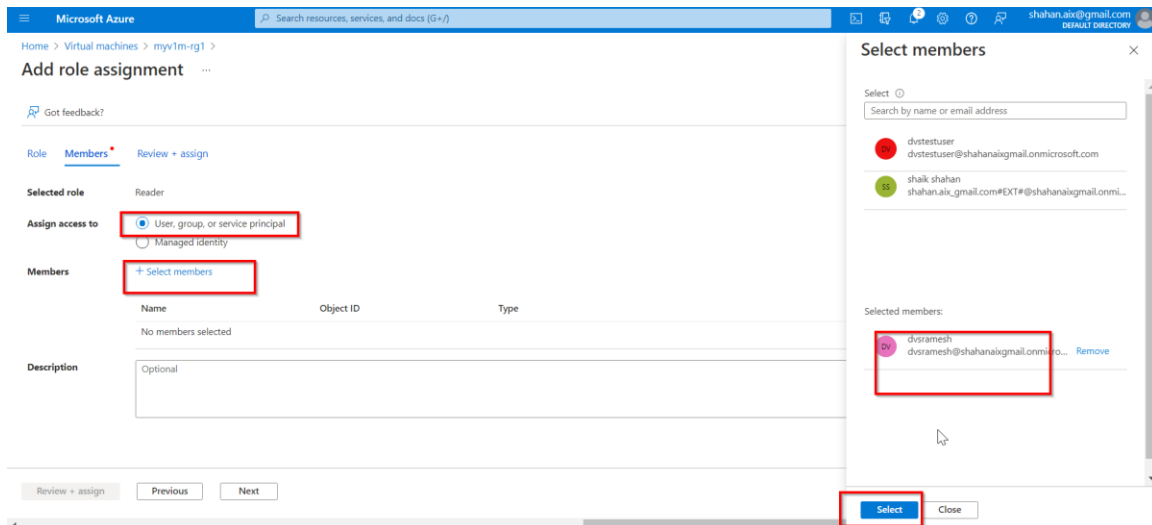
Role Members [Review + assign](#)

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](#)  
[Use classic experience](#)

Search by role name or description Type: All Category: All

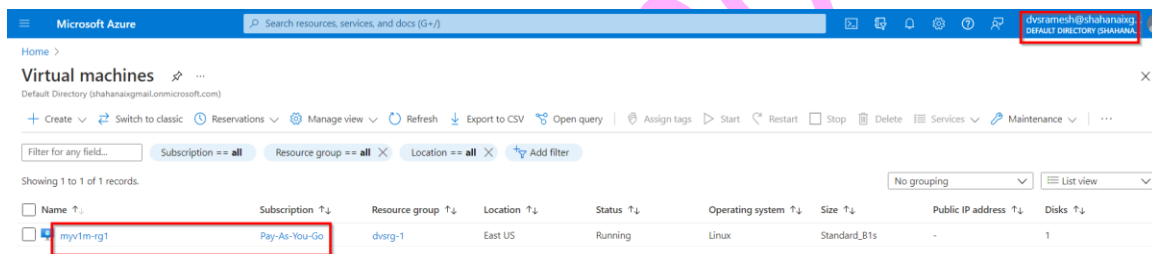
Name ↑↓	Description ↑↓	Type ↑↓	Category ↑↓	Details
Owner	Grants full access to manage all resources, including the ability to assign roles in Azure RBAC.	BuiltInRole	General	<a href="#">View</a>
Contributor	Grants full access to manage all resources, but does not allow you to assign roles in Azure RBAC, manage assignments in Azu...	BuiltInRole	General	<a href="#">View</a>
<b>Reader</b>	View all resources, but does not allow you to make any changes.	BuiltInRole	General	<a href="#">View</a>
Azure Contributor	Can create and manage an Azure vFXT cluster.	BuiltInRole	Storage	<a href="#">View</a>
Azure Operator	Used by the Azure vFXT cluster to manage the cluster	BuiltInRole	Storage	<a href="#">View</a>
DevTest Labs User	Lets you connect, start, restart, and shutdown your virtual machines in your Azure DevTest Labs.	BuiltInRole	Devops	<a href="#">View</a>
Log Analytics Contributor	Log Analytics Contributor can read all monitoring data and edit monitoring settings. Editing monitoring settings includes add...	BuiltInRole	Analytics	<a href="#">View</a>
Log Analytics Reader	Log Analytics Reader can view and search all monitoring data as well as view monitoring settings, including viewing the c...	BuiltInRole	Analytics	<a href="#">View</a>

[Review + assign](#) [Previous](#) [Next](#)

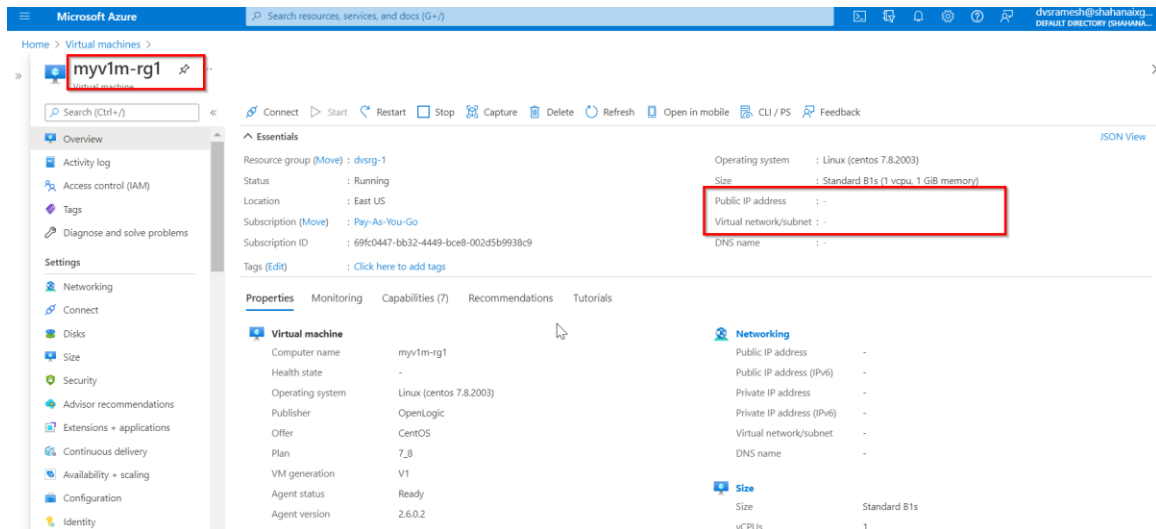


Now we gave the reader access for the user dvsramesh.

Let's try to check if dvsramesh can check the details for this resource or not.



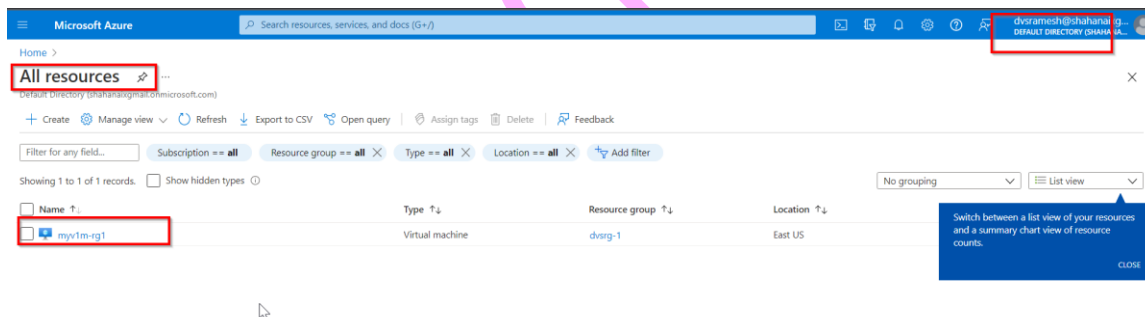
If you observe this guy can see only myvm1-rg server. Let's see if he can verify the server public ipaddress



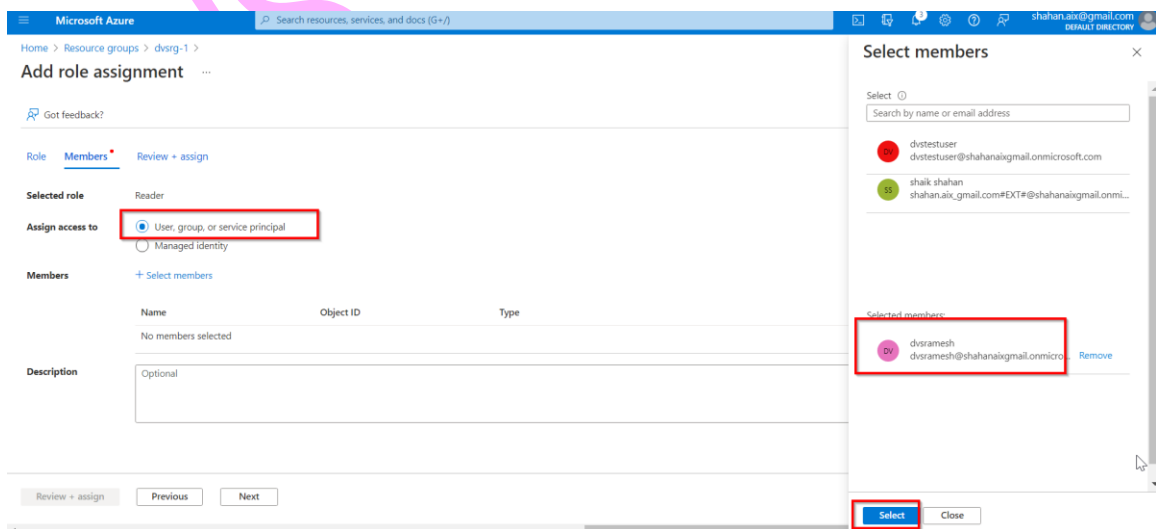
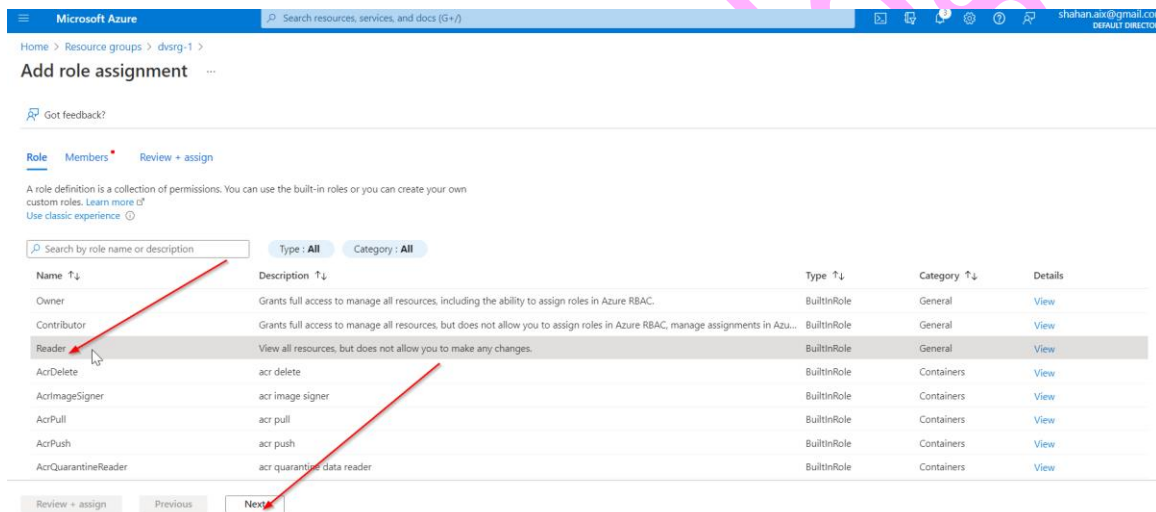
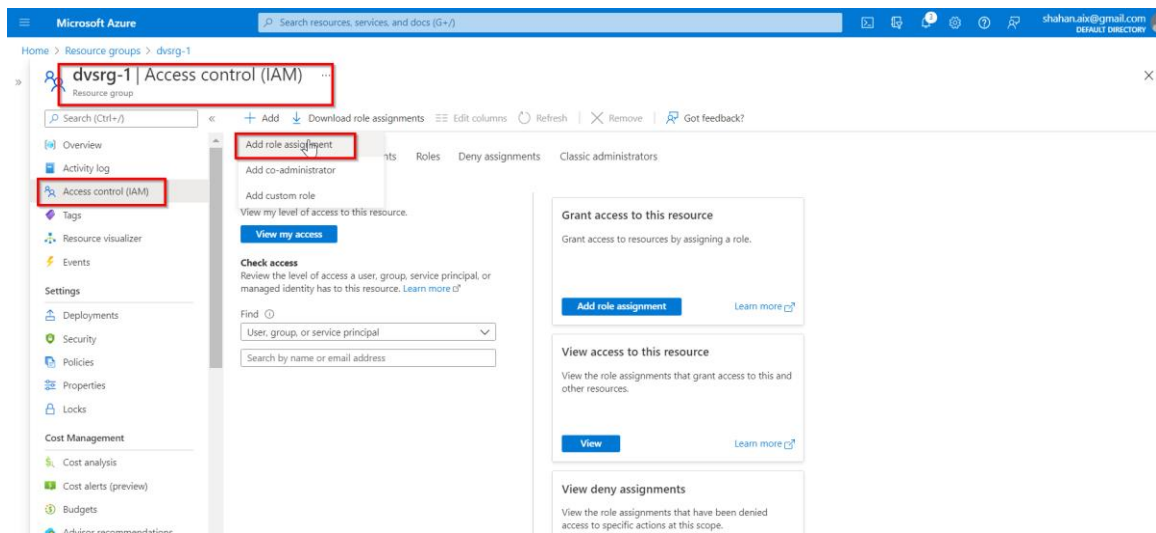
Here if you observe user "dvsramesh" he don't have permissions to view the address hence it's not visible for him

## 4 Access at the RG level

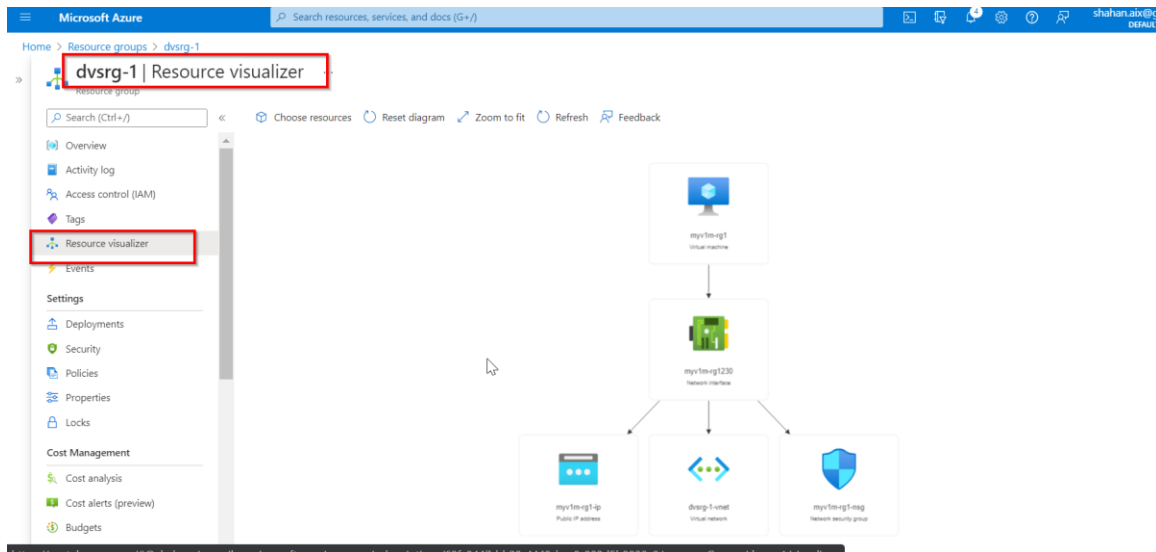
Before changes dvsramesh user can access only myvm1-rg1



Login as root user & then do the below



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Once done with above changes now look what resource "dvsramesh" user can list

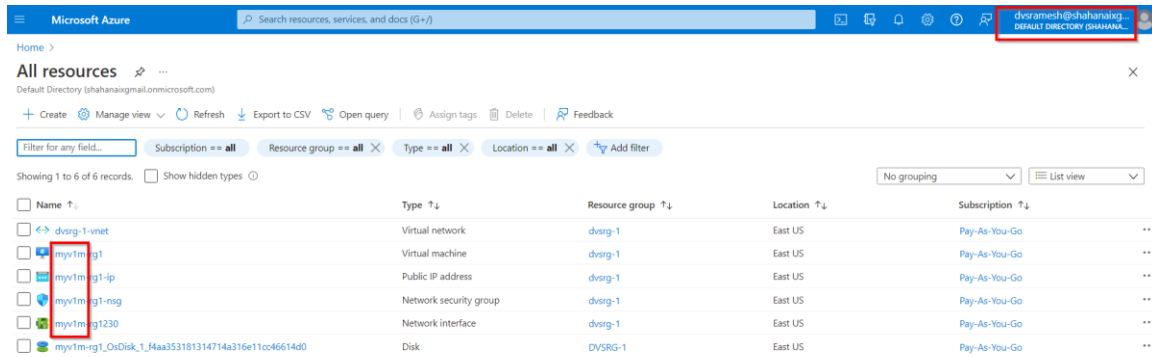
Name	Type	Resource group	Location	Subscription
dvsrg-1-vnet	Virtual network	dvsrg-1	East US	Pay-As-You-Go
myvm-rg1	Virtual machine	dvsrg-1	East US	Pay-As-You-Go
myvm-rg1-ip	Public IP address	dvsrg-1	East US	Pay-As-You-Go
myvm-rg1-nsg	Network security group	dvsrg-1	East US	Pay-As-You-Go
myvm-rg1230	Network interface	dvsrg-1	East US	Pay-As-You-Go
myvm-rg1_OsDisk_1_4aa353181314714a316e11cc46614d0	Disk	DVSRG-1	East US	Pay-As-You-Go

Now if you observe above output "dvsramesh" can see myvm1 details as he got access for dvsrg-1 but he can't see the other VM i.e., myvm2-rg2.

## 5 Access at the Subscription level

Let's grant user "dvsramesh" at the subscription level so that he should be able to access all the resources.

Before change:



Microsoft Azure

Search resources, services, and docs (G+)

Home > All resources

Default Directory (shahanagmail.onmicrosoft.com)

+ Create Manage view Refresh Export to CSV Open query Assign tags Delete Feedback

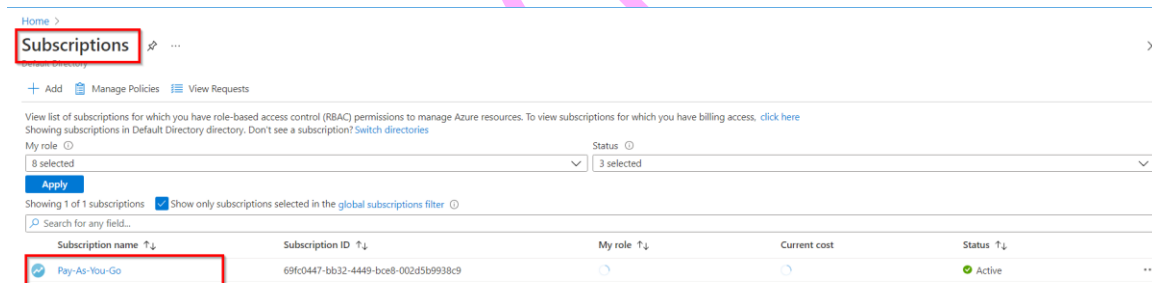
Filter for any field... Subscription == all Resource group == all Type == all Location == all Add filter

Showing 1 to 6 of 6 records. Show hidden types No grouping List view

Name	Type	Resource group	Location	Subscription
dvsg-1-vnet	Virtual network	dvsg-1	East US	Pay-As-You-Go
myvm1-1	Virtual machine	dvsg-1	East US	Pay-As-You-Go
myvm1-1-ip	Public IP address	dvsg-1	East US	Pay-As-You-Go
myvm1-1-nsg	Network security group	dvsg-1	East US	Pay-As-You-Go
myvm1-1-nic	Network interface	dvsg-1	East US	Pay-As-You-Go
myvm1-1-disk	Disk	DVSRG-1	East US	Pay-As-You-Go

Implementing change:

Login as root user



Home > Subscriptions

Default Directory

+ Add Manage Policies View Requests

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 Default Directory directory. Don't see a subscription? [Switch directories](#)

My role 8 selected Status 3 selected

Apply

Showing 1 of 1 subscriptions Show only subscriptions selected in the global subscriptions filter

Search for any field...

Subscription name	Subscription ID	My role	Current cost	Status
Pay-As-You-Go	69fc0447-bb32-4449-bce8-002d5b9938c9			Active



Microsoft Azure | Search resources, services, and docs (G+/I)

Home > Subscriptions > Pay-As-You-Go

**Pay-As-You-Go | Access control (IAM)**

Search (Ctrl+J) | Add role assignment | Download role assignments | Edit columns | Refresh | Remove | Got feedback?

Overview | Activity log | **Access control (IAM)** | Tags | Diagnose and solve problems | Security | Events

Cost Management | Cost analysis | Cost alerts | Budgets | Advisor recommendations

Billing | Invoices | External services | Payment methods | Partner information

**Add role assignment**

Add co-administrator | Add custom role | View my level of access to this resource. | **View my access**

**Check access**  
Review the level of access a user, group, service principal, or managed identity has to this resource. [Learn more](#)

Find | Search by name or email address

**Grant access to this resource**  
Grant access to resources by assigning a role. | **Add role assignment** | [Learn more](#)

**View access to this resource**  
View the role assignments that grant access to this and other resources. | **View** | [Learn more](#)

**View deny assignments**  
View the role assignments that have been denied access to specific actions at this scope.

Microsoft Azure | Search resources, services, and docs (G+/I)

Home > Subscriptions > Pay-As-You-Go >

**Add role assignment**

Got feedback?

**Role** | Members | Review + assign

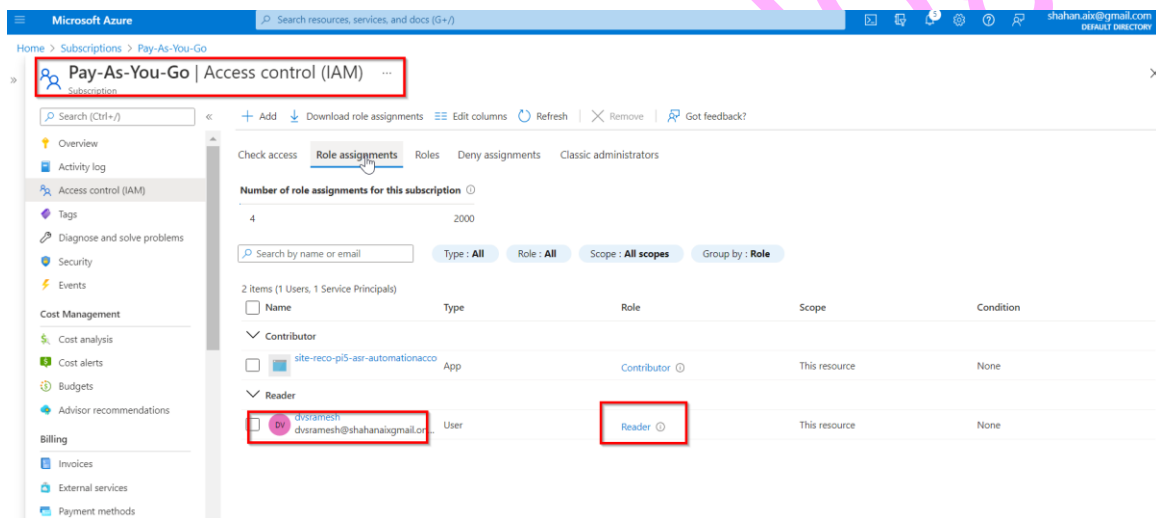
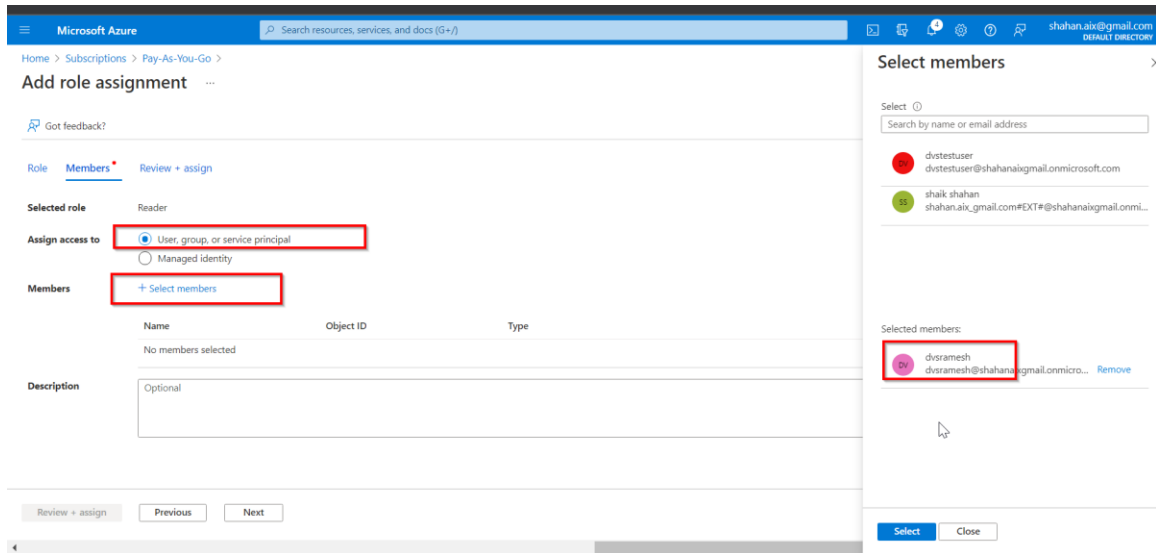
A role definition is a collection of permissions. You can use the built-in roles or you can create your own custom roles. [Learn more](#)  
[Use classic experience](#)

Search: reade | Type: All | Category: All

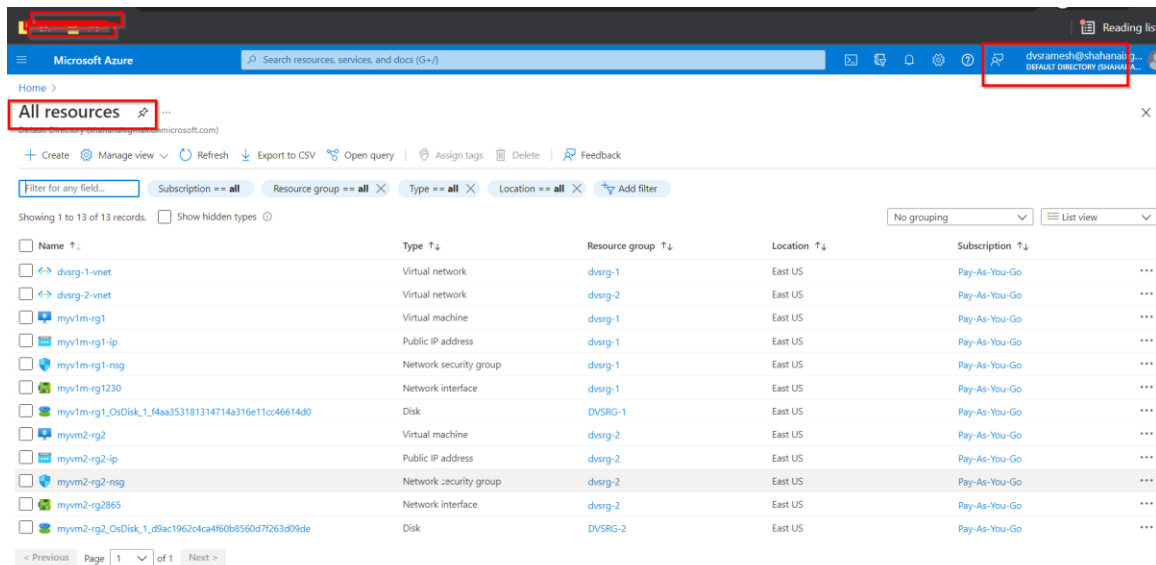
Showing 70 of 317 roles

Name ↑↓	Description ↑↓	Type ↑↓	Category ↑↓	Details
<b>Reader</b>	View all resources, but does not allow you to make any changes.	BuiltInRole	General	<a href="#">View</a>
AcrQuarantineReader	acr quarantine data reader	BuiltInRole	Containers	<a href="#">View</a>
AgFood Platform Service Reader	Provides read access to AgFood Platform Service	BuiltInRole	AI + Machine Learning	<a href="#">View</a>
API Management Service Reader Role	Read-only access to service and APIs	BuiltInRole	Integration	<a href="#">View</a>
App Configuration Data Reader	Allows read access to App Configuration data.	BuiltInRole	Integration	<a href="#">View</a>
Attestation Reader	Can read the attestation provider properties	BuiltInRole	Security	<a href="#">View</a>
Autonomous Development Platform Data Reader...	Grants read access to Autonomous Development Platform data.	BuiltInRole	Preview	<a href="#">View</a>

Review + assign | Previous | **Next**

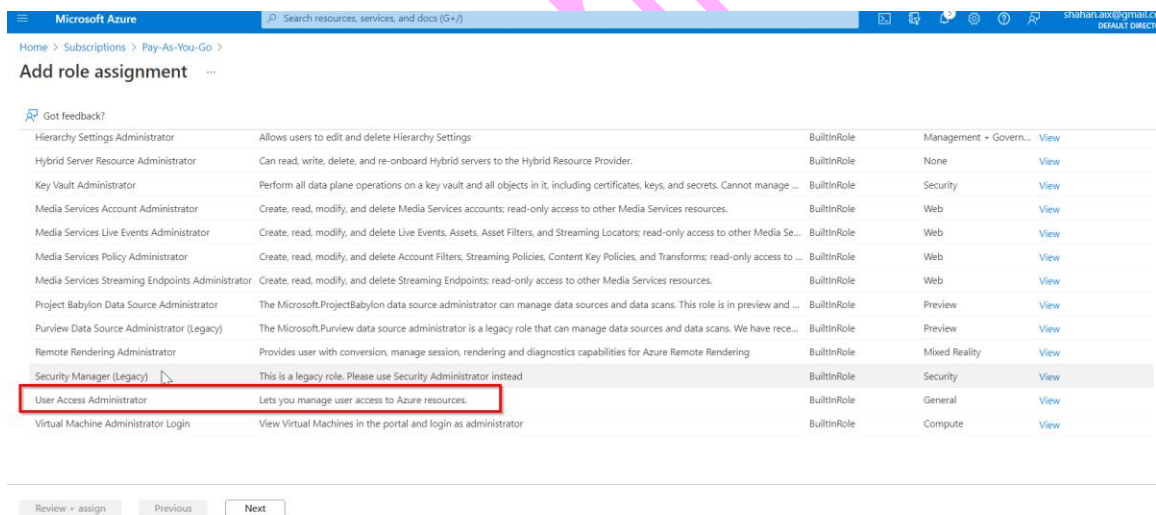


Now let's login as "dvsramesh" user then check if he can list all the resources or not



So as discussed earlier we can grant permissions/roles to the user at diff level like Resourcelevel, Rglevel, subscription level etc.,

At any point of time if you feel you need to give "dvramesh" as admin role then you can directly assign him the admin/contributor role at the subscription level.

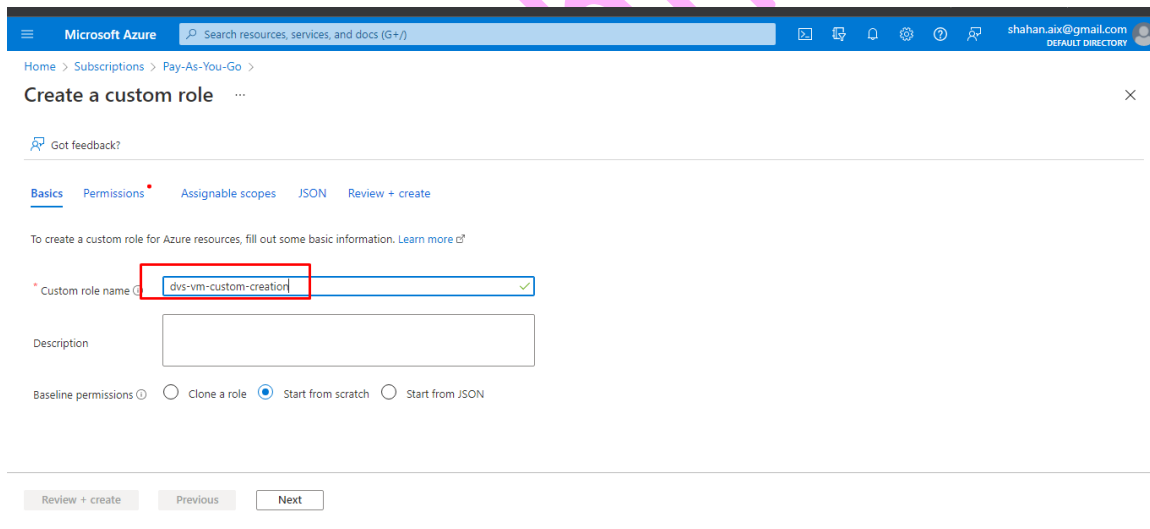
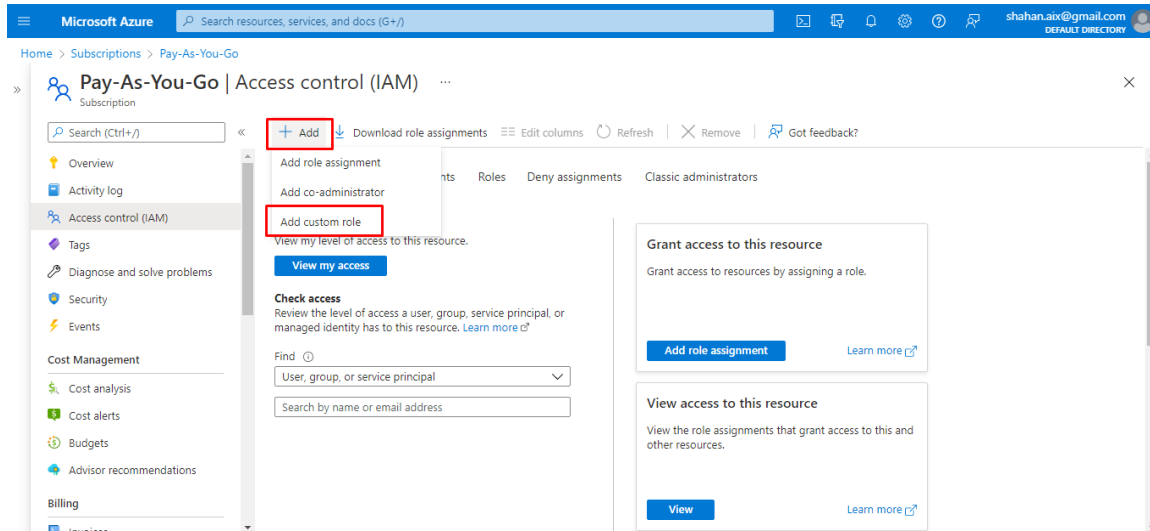


You can grant the access based on your need

## 6 Creating Custom roles

Let's say that you want to create your own custom role then you can configure it easily.

### Creating the custom role:



Microsoft Azure Search resources, services, and docs (G+)

Home > Subscriptions > Pay-As-You-Go >

## Create a custom role

Got feedback?

Basics **Permissions** Assignable scopes JSON Review + create

+ Add permissions + Exclude permissions

Click Add permissions to select the permissions you want to add to this custom role. To add a wildcard (\*) permission, you must manually add the permission on the JSON tab. Learn more > To exclude specific permissions from a wildcard permission, click Exclude permissions. Learn more >

Permission	↑↓	Description	↑↓	Permission type	↑↓
No permissions to display.					

**Add permissions**

Review + create Previous Next

**Definitions**

**Control plane**  
Actions specify the operations that a role is allowed to perform. NotActions specify the operations that are excluded from the allowed Actions (this is useful if a role has wildcards).

**Data plane**  
DataActions specify the operations that a role is allowed to perform to the data within an object. NotDataActions specify the operations that are

Home > Subscriptions > Pay-As-You-Go >

## Create a custom role

Got feedback?

Basics **Permissions** Assignable scopes JSON Review + create

+ Add permissions + Exclude permissions

Click Add permissions to select the permissions you want to add to this custom role. To add a wildcard (\*) permission, you must manually add the permission on the JSON tab. Learn more > To exclude specific permissions from a wildcard permission, click Exclude permissions. Learn more >

Permission	↑↓	Description	↑↓	Permission type	↑↓
Microsoft.Compute/virtualMachineScaleSets/...		Get the properties of a Virtual Machine Scale ...		Action	

Review + create Previous Next

**Definitions**

**Control plane**  
Actions specify the operations that a role is allowed to perform. NotActions specify the operations that are excluded from the allowed Actions (this is useful if a role has wildcards).

**Data plane**  
DataActions specify the operations that a role is allowed to perform to the data within an object. NotDataActions specify the operations that are

Microsoft Azure Search resources, services, and docs (G+)

Home > Subscriptions > Pay-As-You-Go >

## Create a custom role

Got feedback?

Basics Permissions Assignable scopes **JSON** Review + create

Here is your custom role in JSON format. Learn more >

Download Edit

```
1 {
2   "properties": {
3     "roleName": "dvs-vm-custom-creation",
4     "description": "",
5     "assignableScopes": [
6       "/subscriptions/69fc0447-bb32-4449-bce8-002d5b9938c9"
7     ],
8     "permissions": [
9       {
10        "actions": [
11          "Microsoft.Compute/virtualMachineScaleSets/read"
12        ]
13      }
14     ]
15   }
16 }
```

Review + create Previous Next

**Using JSON**

**Add permissions**  
Specify an operation as an Action, NotAction, DataAction, or NotDataAction. Permission strings use the format (Company). (ProviderName)/(resourceType)/(action).

**Add wildcards (\*)**  
Add wildcards (\*) to a permission string to include all permissions that match the string. For example, if you specify Microsoft.Compute/\* as an Action, your role can perform all management operations in Microsoft.Compute.

**Add assignable scopes**

Microsoft Azure Search resources, services, and docs (G+)

Home > Subscriptions > Pay-As-You-Go >

## Create a custom role

Got feedback?

If you change tabs and have unsaved edits, those changes will be discarded.

```

7      ],
8      "permissions": [
9        {
10         "actions": [
11           "Microsoft.Resources/deployments/*",
12           "Microsoft.Network/virtualNetworks/*",
13           "Microsoft.Network/networkInterfaces/*",
14           "Microsoft.Network/publicIPAddresses/*",
15           "Microsoft.Network/networkSecurityGroups/*",
16           "Microsoft.Resources/subscriptions/resourceGroups/read",
17           "Microsoft.Resources/subscriptions/resourceGroups/write",
18           "Microsoft.Compute/virtualMachines/*"
19         ],
20         "notActions": [],
21         "dataActions": [],
22         "notDataActions": []
23       }
    ]
  },
  "notActions": [],
  "dataActions": [],
  "notDataActions": []
}

```

**Add wildcards (\*)**  
Add wildcards (\*) to a permission string to include all permissions that match the string. For example, if you specify Microsoft.Compute/\* as an Action, your role can perform all management operations in Microsoft.Compute.

**Add assignable scopes**  
Management group scope has the format /providers/Microsoft.Management/managementGroups/{man  
Subscription scope has the format /subscriptions/{subscriptionid}. Resource group scope has the format /subscriptions/{subscriptionid}/resourceGroups/{resourceGroup}

**Review + create** Previous Next

"Microsoft.Resources/deployments/\*",  
 "Microsoft.Network/virtualNetworks/\*",  
 "Microsoft.Network/networkInterfaces/\*",  
 "Microsoft.Network/publicIPAddresses/\*",  
 "Microsoft.Network/networkSecurityGroups/\*",  
 "Microsoft.Resources/subscriptions/resourceGroups/read",  
 "Microsoft.Resources/subscriptions/resourceGroups/write",  
 "Microsoft.Compute/virtualMachines/\*"

Microsoft Azure Search resources, services, and docs (G+)

Home > Subscriptions > Pay-As-You-Go >

## Create a custom role

Got feedback?

**Permissions**

Action	Microsoft.Resources/deployments/*
Action	Microsoft.Network/virtualNetworks/*
Action	Microsoft.Network/networkInterfaces/*
Action	Microsoft.Network/publicIPAddresses/*
Action	Microsoft.Network/networkSecurityGroups/*
Action	Microsoft.Resources/subscriptions/resourceGroups/read
Action	Microsoft.Resources/subscriptions/resourceGroups/write
Action	Microsoft.Compute/virtualMachines/*

**Assignable Scopes**

**Create** Previous

Microsoft Azure | Search resources, services, and docs (G+)

Home > Pay-As-You-Go | Access control (IAM)

Subscription

Search (Ctrl+/) < Add Download role assignments Edit columns Refresh Remove Got feedback?

Check access Role assignments Roles Deny assignments Classic administrators

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](#)

dvs-vm-cu Type: All Category: All

Showing 1 of 330 roles

Name	Description	Type	Category	Details
dvs-vm-custom-creation		CustomRole	None	<div>Details Delete Edit Clone</div>

Microsoft Azure | Search resources, services, and docs (G+)

Home > Pay-As-You-Go | dvs-vm-custom-creation

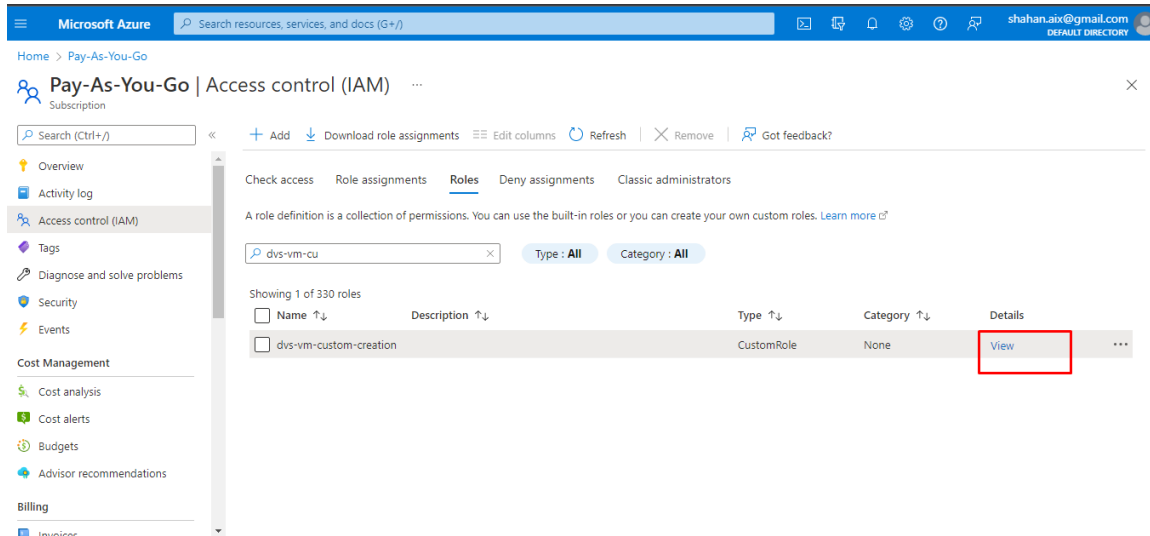
Subscription CustomRole

Search (Ctrl+/) Permissions JSON Assignments

```
1 {
2   "id": "/subscriptions/69fc0447-bb32-4449-bce8-002d5b9938c9/providers/Microsoft.Authorization/roleDefinitions/879044bd-c853-
3   "properties": {
4     "roleName": "dvs-vm-custom-creation",
5     "description": "",
6     "assignableScopes": [
7       "/subscriptions/69fc0447-bb32-4449-bce8-002d5b9938c9"
8     ],
9     "permissions": [
10      {
11        "actions": [
12          "Microsoft.Resources/deployments/*",
13          "Microsoft.Network/virtualNetworks/*",
14          "Microsoft.Network/networkInterfaces/*",
15          "Microsoft.Network/publicIPAddresses/*",
16          "Microsoft.Network/networkSecurityGroups/*",
17          "Microsoft.Resources/subscriptions/resourceGroups/read",
18          "Microsoft.Resources/subscriptions/resourceGroups/write",
19          "Microsoft.Compute/virtualMachines/*"
20        ],
21        "notActions": [],
22        "dataActions": [],
23        "notDataActions": []
24      }
25    ]
26  }
27 }
```

## 7 Granting custom roles to the user

Let's assign the custom role to the user, in our case "suresh".



Microsoft Azure | Search resources, services, and docs (G+)

Home > Pay-As-You-Go | Access control (IAM)

Search (Ctrl+/) << + Add Download role assignments Edit columns Refresh Remove Got feedback?

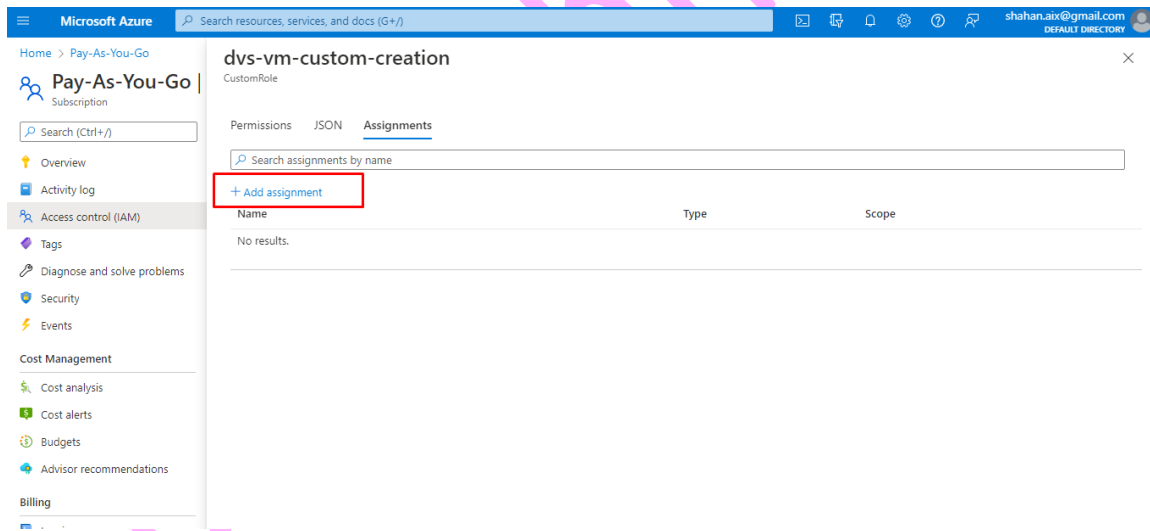
Check access Role assignments Roles Deny assignments Classic administrators

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](#)

Search: dvs-vm-cu Type: All Category: All

Showing 1 of 330 roles

Name	Description	Type	Category	Details
dvs-vm-custom-creation		CustomRole	None	<a href="#">View</a>



Microsoft Azure | Search resources, services, and docs (G+)

Home > Pay-As-You-Go | dvs-vm-custom-creation

Permissions JSON Assignments

Search assignments by name

+ Add assignment

Name	Type	Scope
No results.		



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

Home > Pay-As-You-Go >

## Add role assignment

Got feedback?

Role Members 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](#) Use classic experience

dvs-vm-cust Type: All Category: All

Showing 1 of 330 roles

Name	Description	Type	Category	Details
dvs-vm-custom-creation		CustomRole	None	<a href="#">View</a>

Review + assign Previous Next

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

Home > Pay-As-You-Go >

## Add role assignment

Got feedback?

Role Members Review + assign

Selected role dvs-vm-custom-creation

Assign access to ☒ User, group, or service principal ☐ Managed identity

Members [+ Select members](#)

Name	Object ID	Type
No members selected		

Description Optional

Review + assign Previous Next

### Select members

Search by name or email address

- dvsadmin
- ramesh admin  
ramesh@shahanaixgmail.onmicrosoft.com
- shaik shahan  
shahan.aix@gmail.com#EXT#@shahanaixgmail.onmi...

Selected members:

- suresh  
suresh@shahanaixgmail.onmicrosoft.com Remove

Select Close

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

Home > Pay-As-You-Go >

## Add role assignment

Got feedback?

Selected role dvs-vm-custom-creation

Assign access to ☒ User, group, or service principal ☐ Managed identity

Members [+ Select members](#)

Name	Object ID	Type
suresh	5a140420-3a1c-427a-9bc8-d5b31ff41ae2	User

Description Optional

Review + assign Previous Next

DVS Technologies, Opp Home Town, Beside Biryani Zone, Marathahalli, Bangalore Phone: 9632558585 Mobile: 8892499499 Mail : [dvs.training@gmail.com](mailto:dvs.training@gmail.com) Web: [www.dvstechnologies.in](http://www.dvstechnologies.in)

Let's try to create the server as "suresh" user:

Microsoft Azure | Search resources, services, and docs (G+/)

Home > Virtual machines | suresh@shahanaixgm...  
DEFAULT DIRECTORY (SHAHANA...)

+ Create | Switch to classic | Reservations | Manage view | Refresh | Export to CSV | Open query | Assign tags | Start | Restart | Stop | Delete

Filter for any field... | Subscription == all | Resource group == all | Location == all | Add filter

Showing 1 to 2 of 2 records. | No grouping | List view

<input type="checkbox"/>	Name ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓	Size ↑↓	Public IP address ↑↓	Disk
<input type="checkbox"/>	dvs-server1	Pay-As-You-Go	dvs-rg	East US	Running	Linux	Standard_B1s	40.117.249.139	1
<input type="checkbox"/>	dvs-server2	Pay-As-You-Go	dvs-rg	East US	Running	Linux	Standard_B1s	20.127.22.88	1

< Previous | Page 1 of 1 | Next >

Microsoft Azure | Search resources, services, and docs (G+/)

Home > Virtual machines > Create a virtual machine

Resource group \* | dvs-rg | Create new

Instance details

Virtual machine name \* | dvs-server3 | ✓

Region \* | (US) East US

Availability options | No infrastructure redundancy required

Security type | Standard

Image \* | CentOS-based 7.9 - Gen2 | See all images | Configure VM generation

Azure Spot instance | ☐

Size \* | Standard\_B1s - 1 vcpu, 1 GiB memory (₹546.97/month) | See all sizes

Review + create | < Previous | Next: Disks >

Microsoft Azure Search resources, services, and docs (G+)

Home > Virtual machines >

## Create a virtual machine

Validation passed

Basics Disks Networking Management Advanced Tags Review + create

PRODUCT DETAILS

Standard B1s by Microsoft  
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply  
**0.7493 INR/hr**  
[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

**Create** < Previous Next > [Download a template for automation](#)

## 8. Working with MFA

MFA Configuration for users:

Microsoft Azure Search resources, services, and docs (G+)

Home > Default Directory >

### Users | All users

Default Directory - Azure Active Directory

+ New user + New guest user Bulk operations Refresh Reset password **Per-user MFA** Delete user Columns Got feedback?

Search users Add filters

3 users found

	Name	User principal name	User type	Directory synced	Account enabled	Identity issuer	Company name	Cr
<input type="checkbox"/>	dysuser1	dysuser1@shahanaixgm...	Member	No	Yes	shahanaixgmail.onmicrosc		
<input type="checkbox"/>	padmavati	padmavativs3_gmail.c...	Guest	No	Yes	MicrosoftAccount		Int
<input type="checkbox"/>	shaik shahan	shahan.aix.gmail.com#E...	Member	No	Yes	MicrosoftAccount		

Activity

- Sign-in logs
- Audit logs
- Bulk operation results
- Troubleshooting + Support
- New support request

Microsoft | snanan.aix@gmail.com#EXI#@snananaixgmail.onmicrosoft.com | ?

## multi-factor authentication

users service settings

Note: only users licensed to use Microsoft Online Services are eligible for Multi-Factor Authentication. Learn more about how to license other users. Before you begin, take a look at the [multi-factor auth deployment guide](#).

View: Sign-in allowed users Multi-Factor Auth status: Any bulk update

<input type="checkbox"/>	DISPLAY NAME	USER NAME	MULTI-FACTOR AUTH STATUS
<input type="checkbox"/>	dvsuser1	dvsuser1@shahanaixgmail.onmicrosoft.com	Disabled
<input checked="" type="checkbox"/>	padmavati	padmavatidvs3@gmail.com	Disabled
<input type="checkbox"/>	shaik shahan	shahan.aix@gmail.com	Disabled

padmavati

padmavatidvs3@gmail.com

quick steps

Enable

Manage user settings

## multi-factor authentication

users service settings

Note: only users licensed to use Microsoft Online Services are eligible for Multi-Factor Authentication. Learn more about how to license other users. Before you begin, take a look at the [multi-factor auth deployment guide](#).

View: Sign-in allowed users

<input type="checkbox"/>	DISPLAY NAME	USER NAME	MULTI-FACTOR AUTH STATUS
<input type="checkbox"/>	dvsuser1	dvsuser1@shahanaixgmail.onmicrosoft.com	Disabled
<input checked="" type="checkbox"/>	padmavati	padmavatidvs3@gmail.com	Disabled
<input type="checkbox"/>	shaik shahan	shahan.aix@gmail.com	Disabled

padmavati

padmavatidvs3@gmail.com

quick steps

Enable

Manage user settings

### About enabling multi-factor auth

Please read the [deployment guide](#) if you haven't already.

If your users do not regularly sign in through the browser, you can send them to this link to register for multi-factor auth: <https://aka.ms/MFASetup>

enable multi-factor auth cancel

multi-factor authentication

users service settings

Note: only users licensed to use Microsoft Online Services are eligible for Multi-Factor Authentication. Learn more about how to license other users. Before you begin, take a look at the multi-factor auth deployment guide.

View: Sign-in allowed users

Multi-Factor Auth status: Any

bulk update

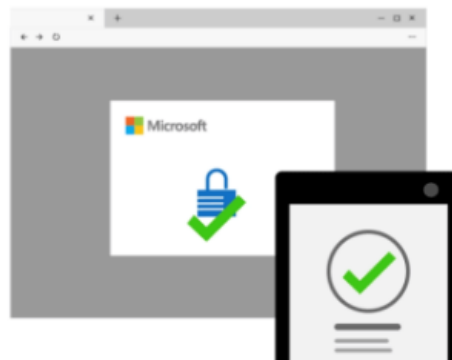
<input type="checkbox"/>	DISPLAY NAME	USER NAME	MULTI-FACTOR AUTH STATUS
<input type="checkbox"/>	dvsuser1	dvsuser1@shahanaixgmail.onmicrosoft.com	Disabled
<input type="checkbox"/>	padmavati	padmavatidvs3@gmail.com	Enabled
<input type="checkbox"/>	shaik shahan	shahan.aix@gmail.com	Disabled

Select a user



padmavatidvs3@gmail.com

## Break free from your passwords



Get the smartphone app to sign in without a password. It's more convenient and more secure.

[No thanks](#)

[Get it now](#)

# Microsoft Azure



padmavatidvs3@gmail.com

## Download the Microsoft Authenticator app

Go to the **browser on your phone**, type in **aka.ms/authapp**, and download the app.

When you've downloaded the app on your phone, **come back and click Next.**

[Skip](#)

[Next](#)

# Microsoft Azure



padmavatidvs3@gmail.com

**To sign in to Microsoft Azure,  
follow the steps below:**

1. Open the Microsoft Azure app on your phone
2. Scan this QR code



Done