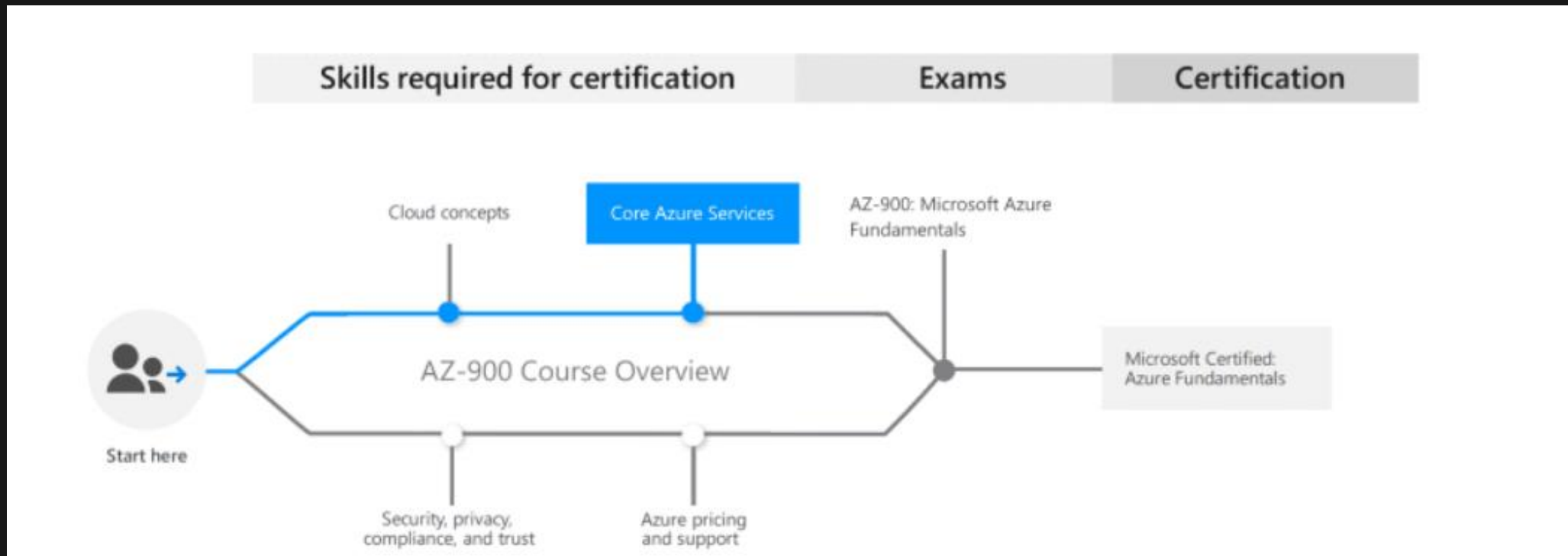


Cloud Computing with Microsoft Azure

www.drmukhan.com

Module 2: Describe Core Azure Services



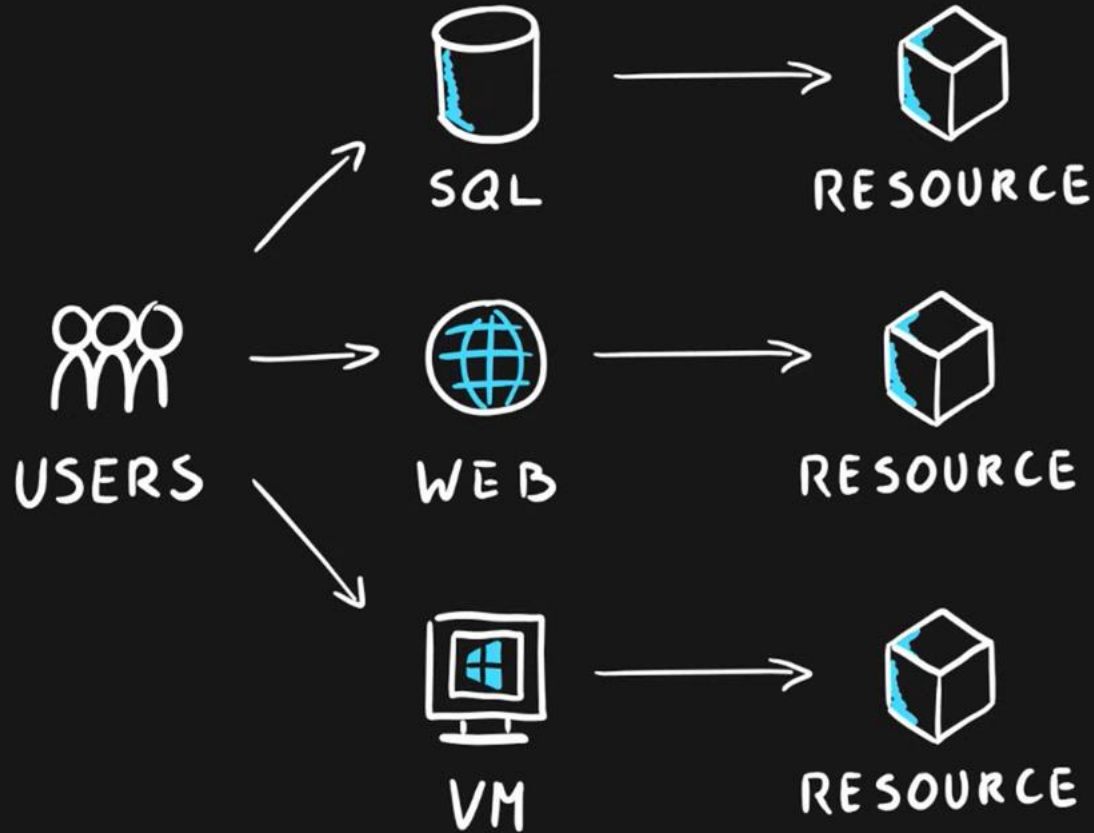
Lecture Objectives

- Describe Azure [Resource](#)
- Describe Azure [Resource Groups](#)
- Describe Azure [Resource Manager](#)
- Describe [benefits](#) and [usage](#) of core architectural components (resources, resource groups & resource manager)

Resources

Key Characteristics

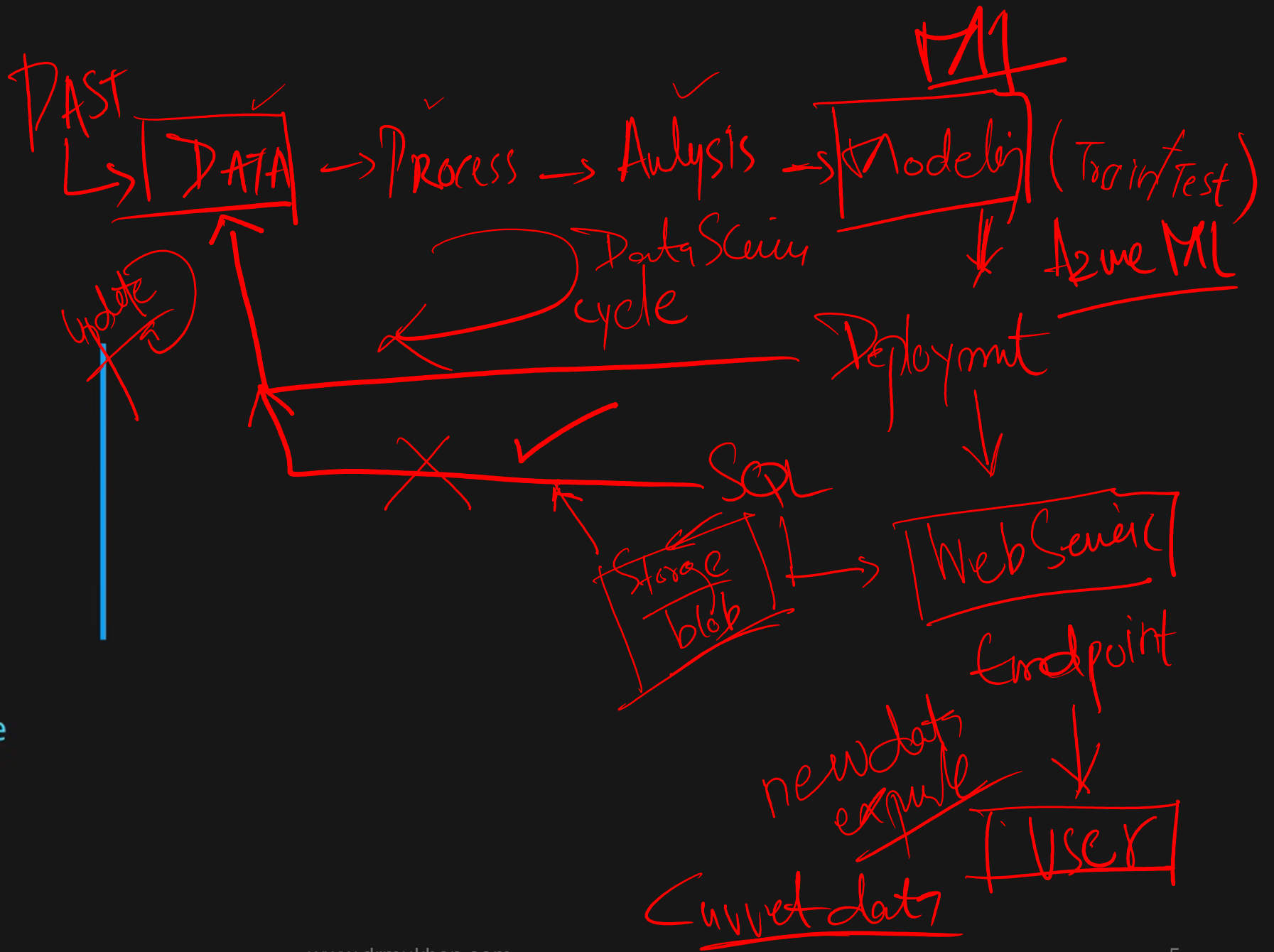
- Objects used to manage services in Azure



Resources

Key Characteristics

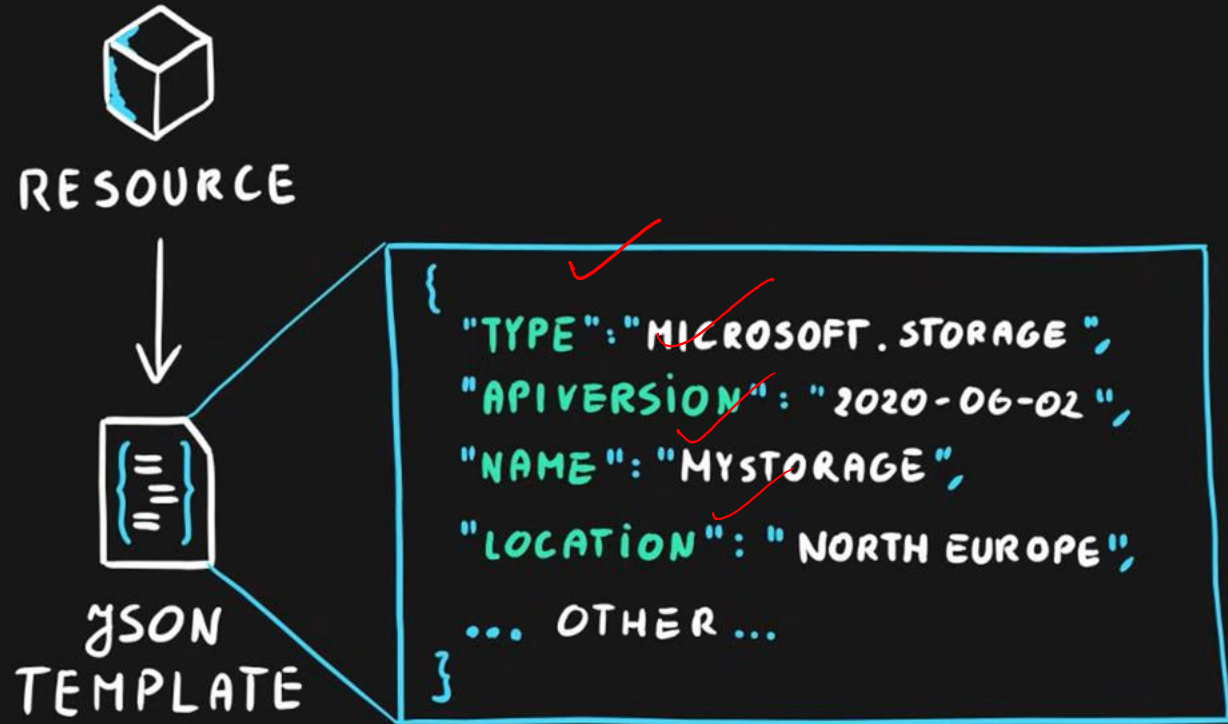
- Objects used to manage services in Azure
- Represent service lifecycle



Resources

Key Characteristics

- Objects used to manage services in Azure
- Represent service lifecycle
- Saved as JSON definition



Resource Groups

Key Characteristics

- Grouping of resources
- Holds logically related resources

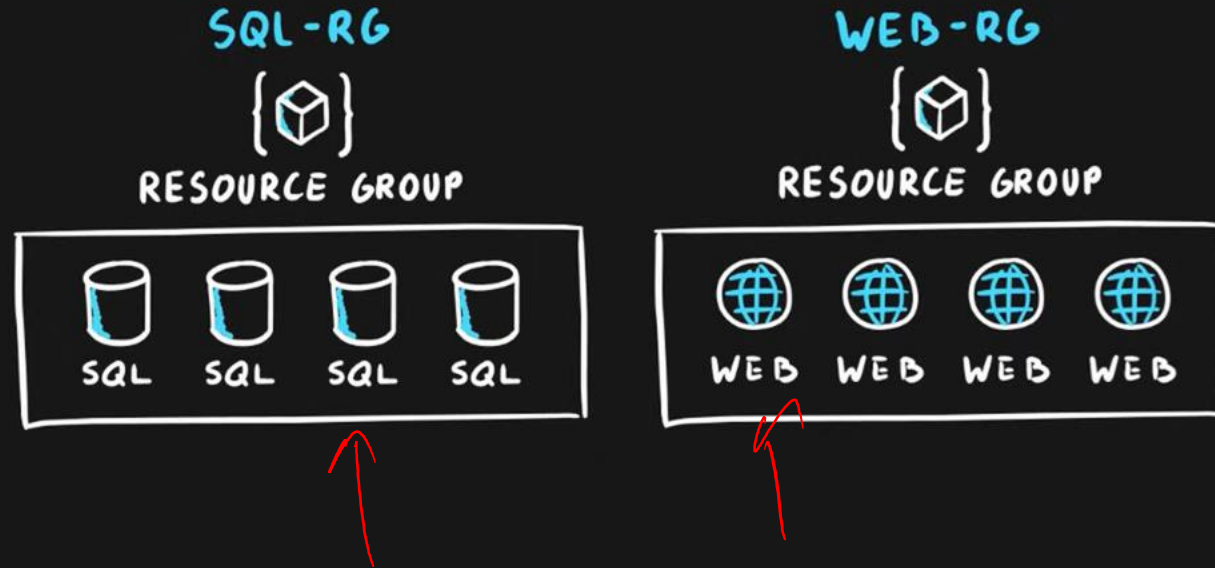


Resource Groups

Key Characteristics

Organizing by

-Type ✓



Resource Groups

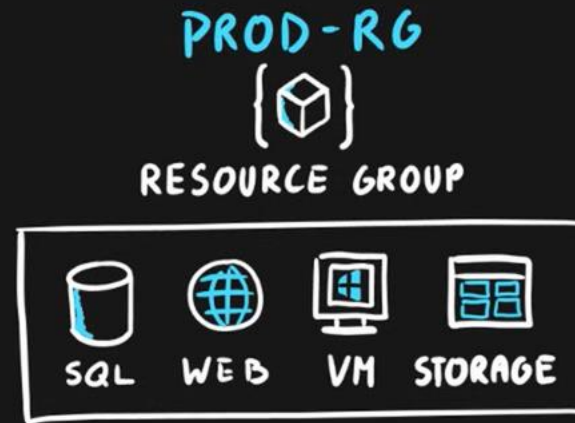
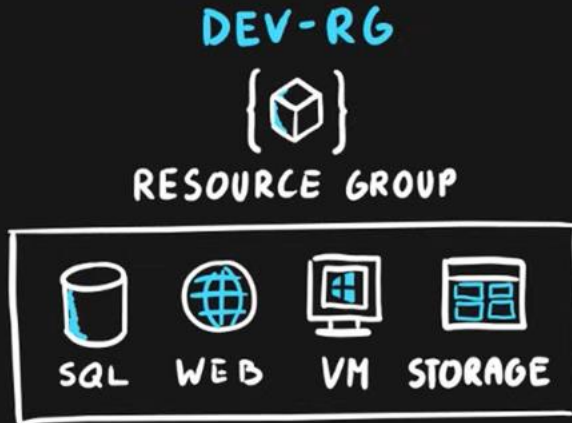
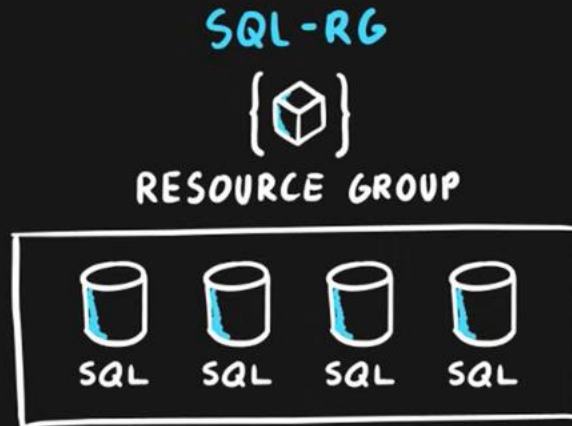
Key Characteristics

Organizing by

-Type

-Lifecycle (app, environment)

Product

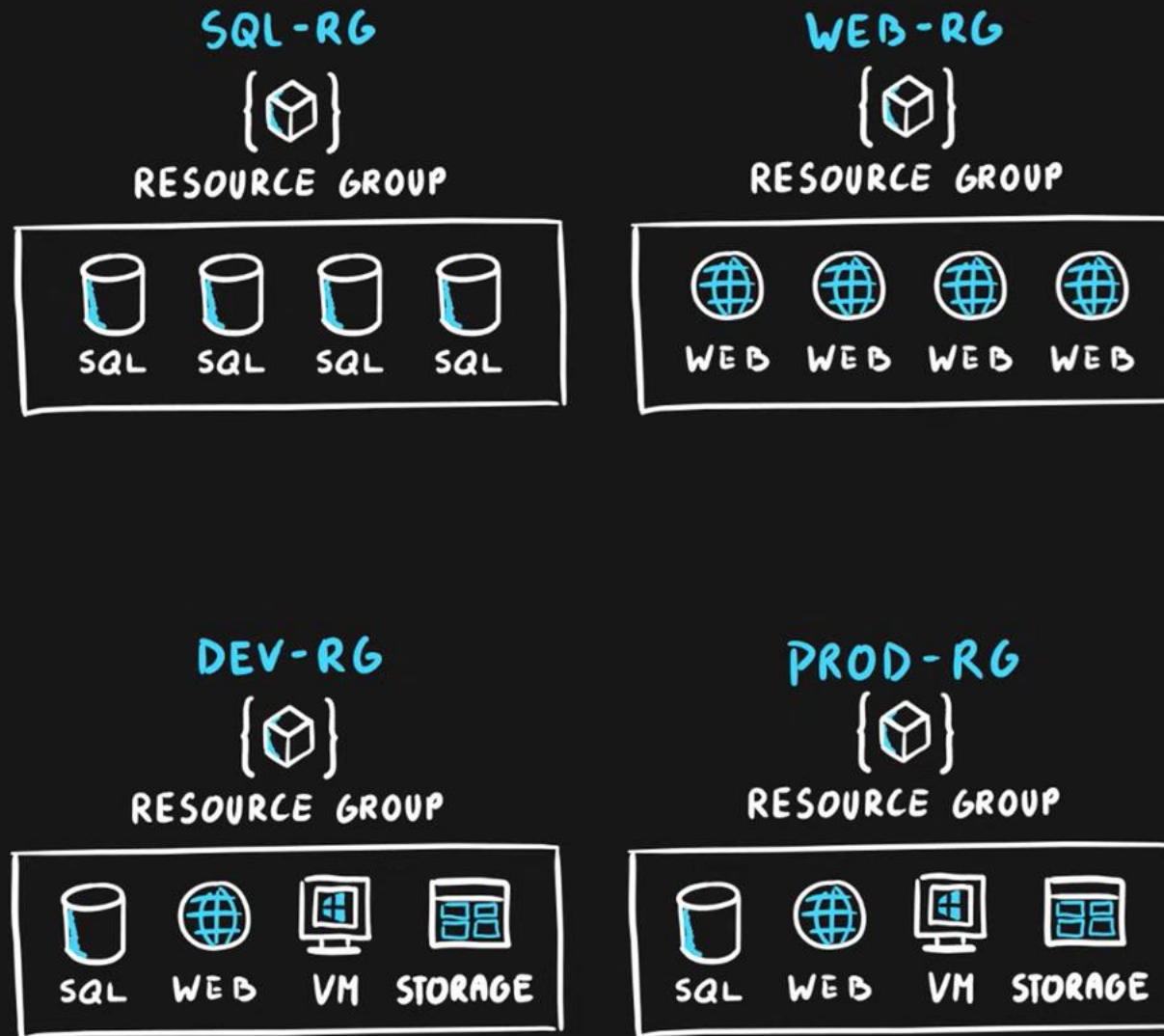


Resource Groups

Key Characteristics

Organizing by

- Type
- Lifecycle (app, environment)
- Department ✓
- Billing, Location or combination of those ✓

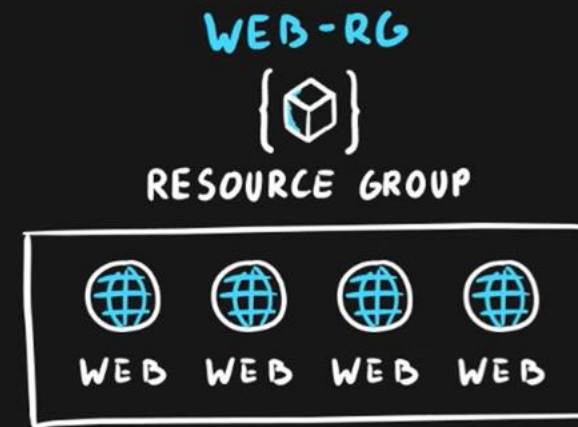
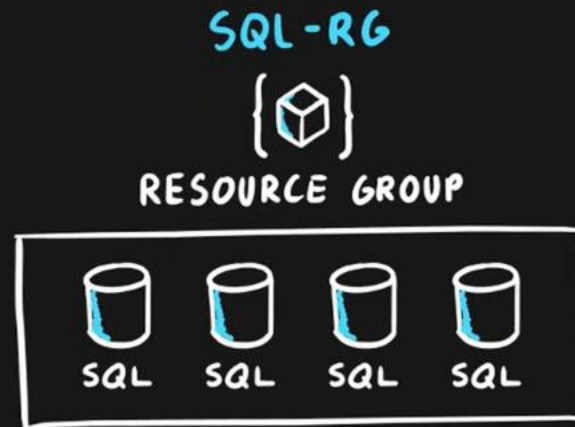


Resource Groups

Key Characteristics

Organizing by

- Type
- Lifecycle (app, environment)
- Department
- Billing, Location or combination of those



- ☰
- + Create a resource
- 🏠 Home
- 📊 Dashboard
- ☰ All services
- ★ FAVORITES
- 📱 All resources
- 📁 Resource groups
- 💻 Virtual machines
- 📁 Storage accounts

Basics Tags **Review + create**

www.youtube.com - to exit full screen, press Esc

Product

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

Subscription * ⓘ Visual Studio Enterprise

Resource group * ⓘ az-900

Resource details

Region * ⓘ (Europe) North Europe

Review + create < Previous Next : Tags >

✓ Validation passed.

Basics Tags Review + create

Basics

Subscription

Visual Studio Enterprise

Resource group

az-900

Region

North Europe

Tags

None

Handwritten red scribbles

Create

< Previous

Next >

[Download a template for automation](#)

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

Dashboard > Resource groups

Default Directory

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

Filter by name... Subscription == all Location == all Add filter

Showing 1 to 1 of 1 records. No grouping

Name ↑↓	Subscription ↑↓	Location ↑↓
az-900	Visual Studio Enterprise	North Europe

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

Dashboard > Resource groups > az-900 Resource group

Search (Ctrl+)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Events

Settings

- Quickstart
- Deployments
- Policies
- Properties
- Locks
- Export template

+ Add Edit columns Delete resource group Refresh Move Export to CSV Open query

Subscription (change) Visual Studio Enterprise Deployments No deployments

Subscription ID 1a2cde19-3af3-4c1d-b5fc-37d7704b9033

Tags (change) Click here to add tags

Filter by name... Type == all Location == all Add filter

Showing 0 to 0 of 0 records. Show hidden types No grouping

Name ↑↓	Type ↑↓	Location
No resources to display		

- ☰
- + Create a resource
- 🏠 Home
- 📊 Dashboard
- ☰ All services
- ★ FAVORITES
- 📊 All resources
- 📁 Resource groups
- 🖥️ Virtual machines
- 📁 Storage accounts

Search resources, services, and docs (G+)


⏪ + Add ☰ Edit columns 🗑️ Delete resource group 🔄 Refresh → Move ↓ Export to CSV

Subscription (change)
Visual Studio Enterprise

Subscriptions ID
1a2cde19-3af3-4c1d-b5fc-37d7704b9033

Tags (change)
Click here to add tags

Deployments
No deployments

 **Storage accounts** ★

+ Create 🔄 View

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

Dashboard >


Storage accounts

Default Directory

+ Add ⚙️ Manage view 🔄 Refresh ↓ Export to CSV 🔗 Open query 🗑️ Delete 📄 Feedback

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 0 to 0 of 0 records. No grouping

Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓
 <p>No storage accounts to display</p> <p>Create a storage account to store up to 500TB of data in the cloud. Use a general-purpose storage account to store object data, use a NoSQL data store, define and use queues for message processing, and set up file shares in the cloud. Use the Blob storage account and the hot or cool access tiers to optimize your costs based on how frequently your object data is accessed.</p>				

Create storage account

Subscription *

Visual Studio Enterprise



Resource group *

az-900

[Create new](#)

Instance details

The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. [Choose classic deployment model](#)

Storage account name *

Location *

(Europe) North Europe



Performance

 Standard Premium

Account kind

StorageV2 (general purpose v2)



Replication

Read-access geo-redundant storage (RA-GRS)



Create storage account

[Create new](#)

Instance details

The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. [Choose classic deployment model](#)

Storage account name *

amdmostorage123a



Location *

(Europe) North Europe



Performance

 Standard Premium

Account kind

StorageV2 (general purpose v2)



Replication

Read-access geo-redundant storage (RA-GRS)



Access tier (default)

 Cool Hot[Review + create](#)[< Previous](#)[Next : Networking >](#)

Create storage account

✔ Validation passed

Data protection

Blob soft delete	Disabled
File share soft delete	Disabled
Blob change feed	Disabled
Versioning	Disabled

Advanced

Secure transfer required	Enabled
Allow Blob public access	Enabled
Minimum TLS version	Version 1.0
Large file shares	Disabled
Hierarchical namespace	Disabled
NFS v3	Disabled

Create

< Previous

Next >

The screenshot shows the Azure portal interface for a storage account deployment. The browser address bar shows the URL: `portal.azure.com/#blade/HubsExtension/DeploymentDetailsBlade/overview/id/%2Fsubscriptions%2F1a2cde19-3af3-4c1d-b5fc-37d7704b9033%2FresourceGroups%2Faz-900%2Fproviders%2FMicrosoft.Resources%2Fdeployments%2FMicrosoft.StorageAccount-20200803084044`. The page title is "Microsoft.StorageAccount-20200803084044 | Overview". The deployment status is "Your deployment is complete" with a green checkmark. The deployment details include: Deployment name: Microsoft.StorageAccount-20200803084044, Subscription: Visual Studio Enterprise, Resource group: az-900, Start time: 8/3/2020, 8:41:31 AM, and Correlation ID: ad71830c-8249-4024-b7e0-103f1277fe68. The left sidebar contains navigation options: Overview (selected), Inputs, Outputs, and Template. The top navigation bar includes "Microsoft Azure" and a search bar. The bottom of the page features a "Go to resource" button.

amdemostorage123a - Microsoft | Resource Explorer

portal.azure.com/#@adammarczak620.onmicrosoft.com/resource/subscriptions/1a2cde19-3af3-4c1d-b5fc-37d7704b9033/resourcegroups/az-900/providers/Microsoft.Storage/storageAccounts/amdemostorage123a/overview

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

adam@marczak.i
DEFAULT DIRECTOR

Dashboard > Microsoft.StorageAccount-20200803084044 | Overview >

amdemostorage123a

Storage account

Search (Ctrl+/) << Open in Explorer → Move Refresh | Delete | Feedback

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Data transfer
- Events
- Storage Explorer (preview)

Settings

- Access keys
- Geo-replication

Alerts

Classic alerts in Azure Monitor is announced to retire in 2021, it is recommended that you upgrade your classic alert rules to retain alerting functionality with the new alerting platform. For more information, see [Continue alerting with ARM storage accounts](#).

Resource group (change) az-900	Performance/Access tier Standard/Hot
Status Primary: Available, Secondary: Available	Replication Read-access geo-redundant storage (RA-GRS)
Location North Europe, West Europe	Account kind StorageV2 (general purpose v2)
Subscription (change) Visual Studio Enterprise	
Subscription ID 1a2cde19-3af3-4c1d-b5fc-37d7704b9033	
Tags (change) Click here to add tags	

- ☰
- + Create a resource
- 🏠 Home
- 📊 Dashboard
- ☰ All services
- ★ FAVORITES
- 📄 All resources
- 📁 Resource groups**
- 🖥️ Virtual machines
- 📄 Storage accounts

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

Dashboard > Resource groups >

az-900 Resource group

Search (Ctrl+/)

[+ Add](#)
[☰ Edit columns](#)
[🗑️ Delete resource group](#)
[🔄 Refresh](#)
[➔ Move](#)
[⬇️ Export to CSV](#)
[🔗 Op](#)

Subscription (change) Visual Studio Enterprise Deployments 1 Succeeded
 Subscription ID 1a2cde19-3af3-4c1d-b5fc-37d7704b9033
 Tags (change) [Click here to add tags](#)

Showing 1 to 1 of 1 records. Show hidden types ⓘ

<input type="checkbox"/> Name ↑↓	Type ↑↓	Loc
<input type="checkbox"/> amdemostorage123a	Storage account	No

Settings
[📄 Quickstart](#)
[📄 Deployments](#)
[📄 Policies](#)
[📄 Properties](#)
[🔒 Locks](#)



Dashboard > Resource groups >

az-900 | Access control (IAM)

Resource group

Search (Ctrl+)



Download role assignments

Edit columns



Refresh



Remove



Go

Overview

Activity log

Access control (IAM)

Tags

Events

Settings

Quickstart

Deployments

Policies

Properties

Locks

Add role assignment

Add role assignment

Add co-administrator

Add custom role

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

Find ⓘ

Azure AD user, group, or service principal

Search by name or email address

Assignments

Roles

Deny assignments

Classic administrators

Add a role assignment

Grant access to resources at this scope by assigning a role to a user, group, service principal, or managed identity.

Add

View role assignments

View the users, groups, service principals, or managed identities that have role assignments at this scope.



Access control (IAM)

« + Add ↓ Download role assignments ≡ Edit columns ↻ Refresh

Check access Role assignments Roles Deny assignments C

Check access

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

Find ⓘ

Azure AD user, group, or service principal ▼

Search by name or email address

Add role assignment

Role ⓘ

Select a role ⓘ

Select a role

Owner ⓘ ✓

Contributor ⓘ ✓

Reader ⓘ ✓

AcrDelete ⓘ ✓

AcrImageSigner ⓘ ✓

AcrPull ⓘ ✓

AcrPush ⓘ ✓

AcrQuarantineReader ⓘ

AcrQuarantineWriter ⓘ

API Management Service Contributor ⓘ



Access control (IAM)

Adding Role assignment ✓ 8:43 AM
Tom Doe is being added as Owner for az-900.

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

- Check access
- Role assignments
- Roles
- Deny assignments
- Classic administrators

Check access

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

Find ⓘ

Azure AD user, group, or service principal

Search by name or email address

Add a role assignment

Grant access to resources at this scope by assigning a role to a user, group, service principal, or managed identity.

Add

[Learn more](#)

View role assignments

View the users, groups, service principals and managed identities that have role assignments granting them access at this scope.

Resource groups

Default Directory

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

Filter by name... Add filter

Showing 1 to 2 of 2 records.

No grouping List view

<input type="checkbox"/> Name	Subscription	Location	
<input type="checkbox"/> az-900	Visual Studio Enterprise	North Europe	...
<input type="checkbox"/> az-900-2	Visual Studio Enterprise	North Europe	...

az-900-2

Resource group

Search (Ctrl+)

+ Add Edit columns Delete resource group Refresh Move Export to CSV Open query

- Overview
 - Activity log
 - Access control (IAM)
 - Tags
 - Events
-
- Settings
- Quickstart
 - Deployments
 - Policies
 - Properties
 - Locks

Subscription ([change](#))
Visual Studio Enterprise

Deployments
No deployments

Subscription ID
1a2cde19-3af3-4c1d-b5fc-37d7704b9033

Tags ([change](#))
[Click here to add tags](#)

Filter by name... Type == all Location == all Add filter

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

<input type="checkbox"/> Name	Type	Location
<input type="checkbox"/> amdemostorage123b	Storage account	North Europe

Resource Groups

Additional information

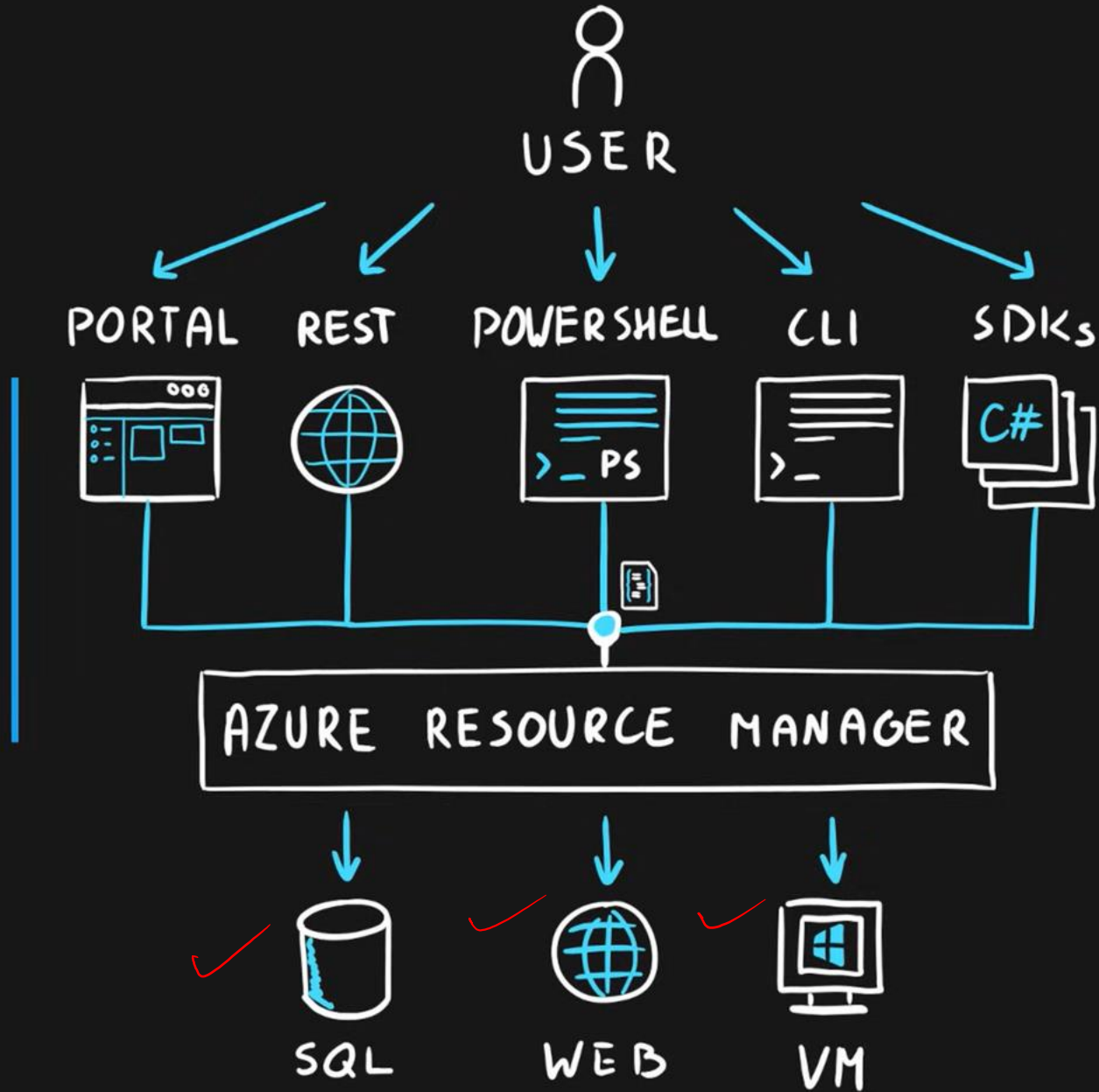
SQL, VM

- Each resource must be in one, and only one resource group
- Resource groups have their own location assigned
- Resources in the resource groups can reside in a different locations
- Resources can be moved between the resource groups
- Resource groups can't be nested ✓
- Organize based on your organization needs but consider
 - Billing
 - Security and access management
 - Application Lifecycle

Resource Manager

Key Characteristics

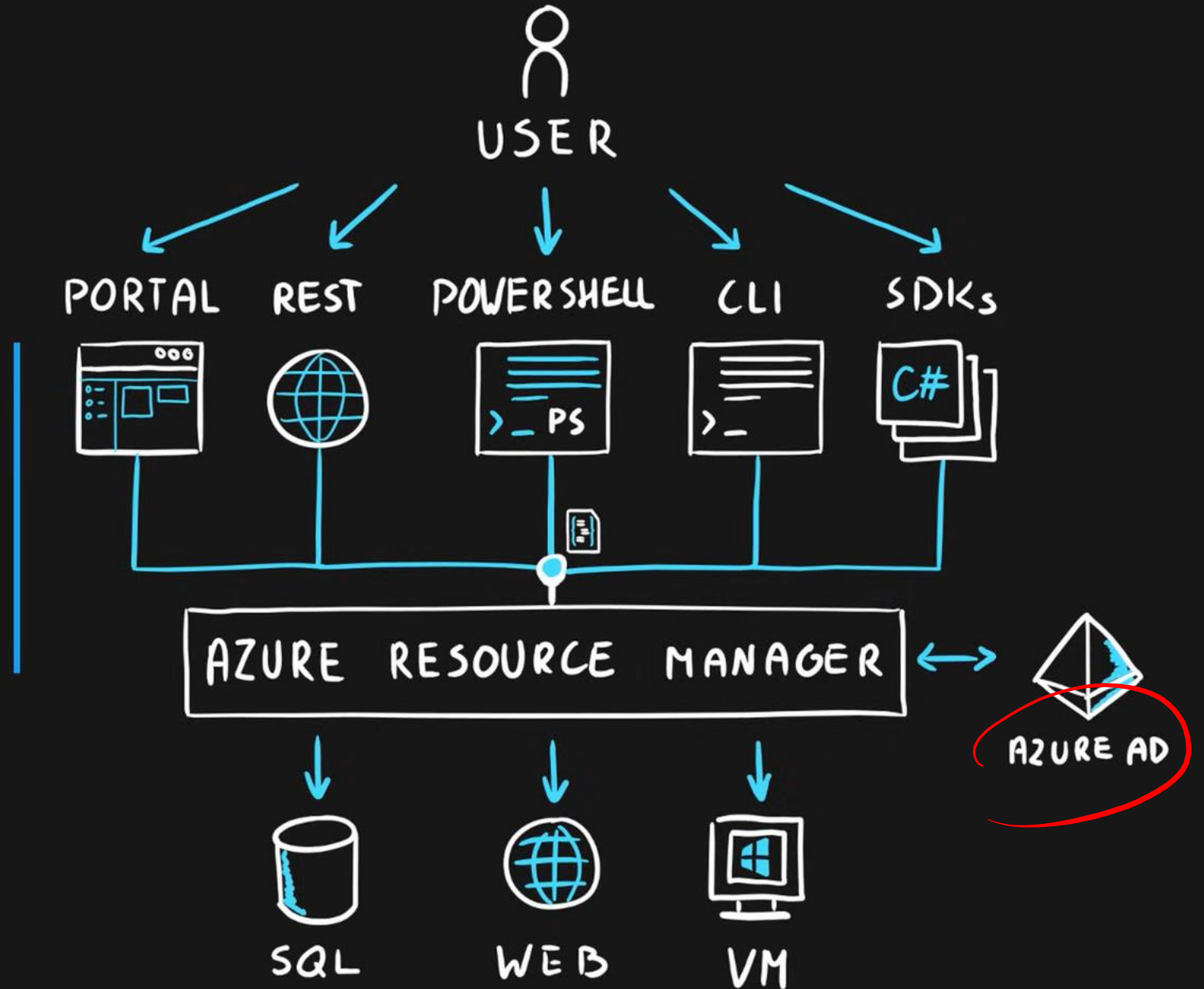
- Management Layer for all resources and resource groups
- Unified language



Resource Manager

Key Characteristics

- Management Layer for all resources and resource groups
- Unified language
- Controls access and resources



THANK YOU!