Cloud Basics

Azure

Agenda

- Azure Architecture
- Azure Services

Azure

Microsoft Azure is a set of cloud services to build,manage and deploy applications on a network with help of tools and frameworks.

Available in more than 54 regions around the world

PAAS &IAAS industry leader

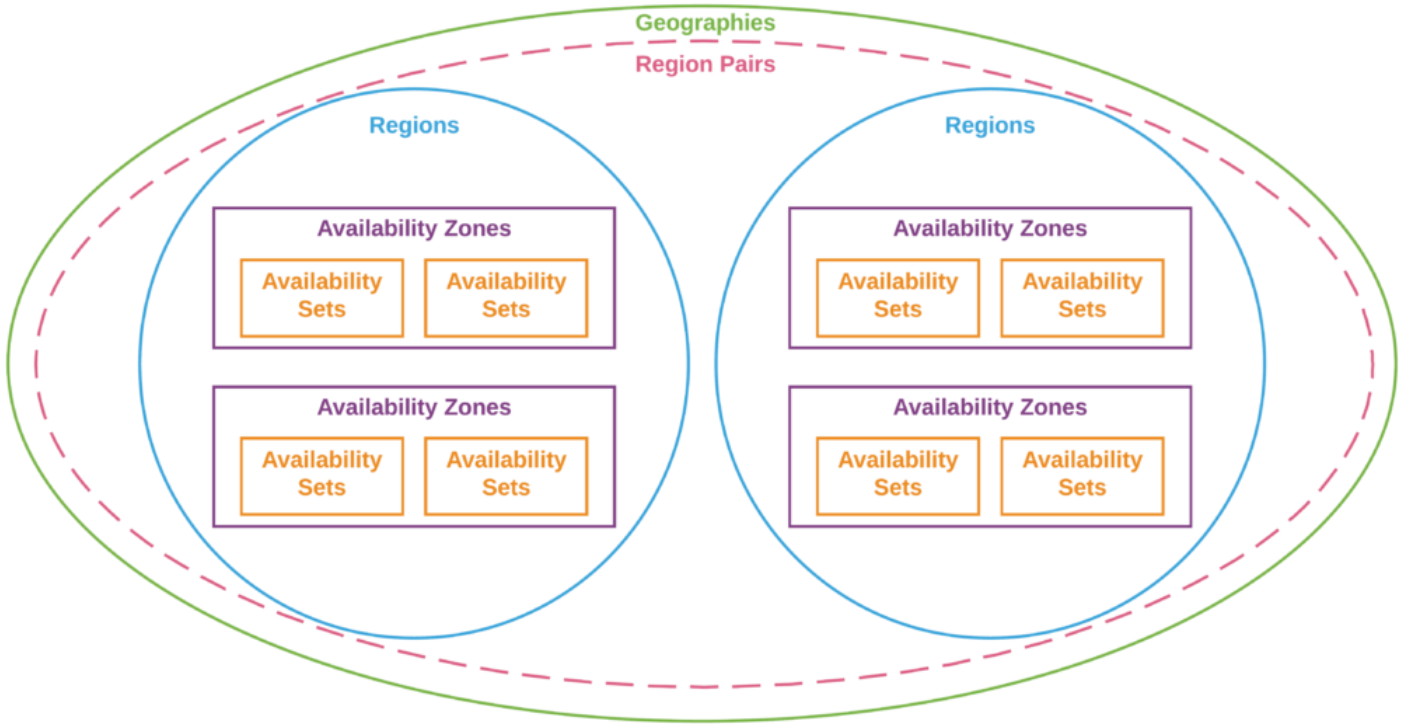
Supports various programming language

Geographies

- Geographies are Microsoft ‘ s global locations for Azure
- America, Europe ,Asia Pacific ,Middle East & Africa
- Contains one or more regions
- Meets specific data residency and compliance requirements.

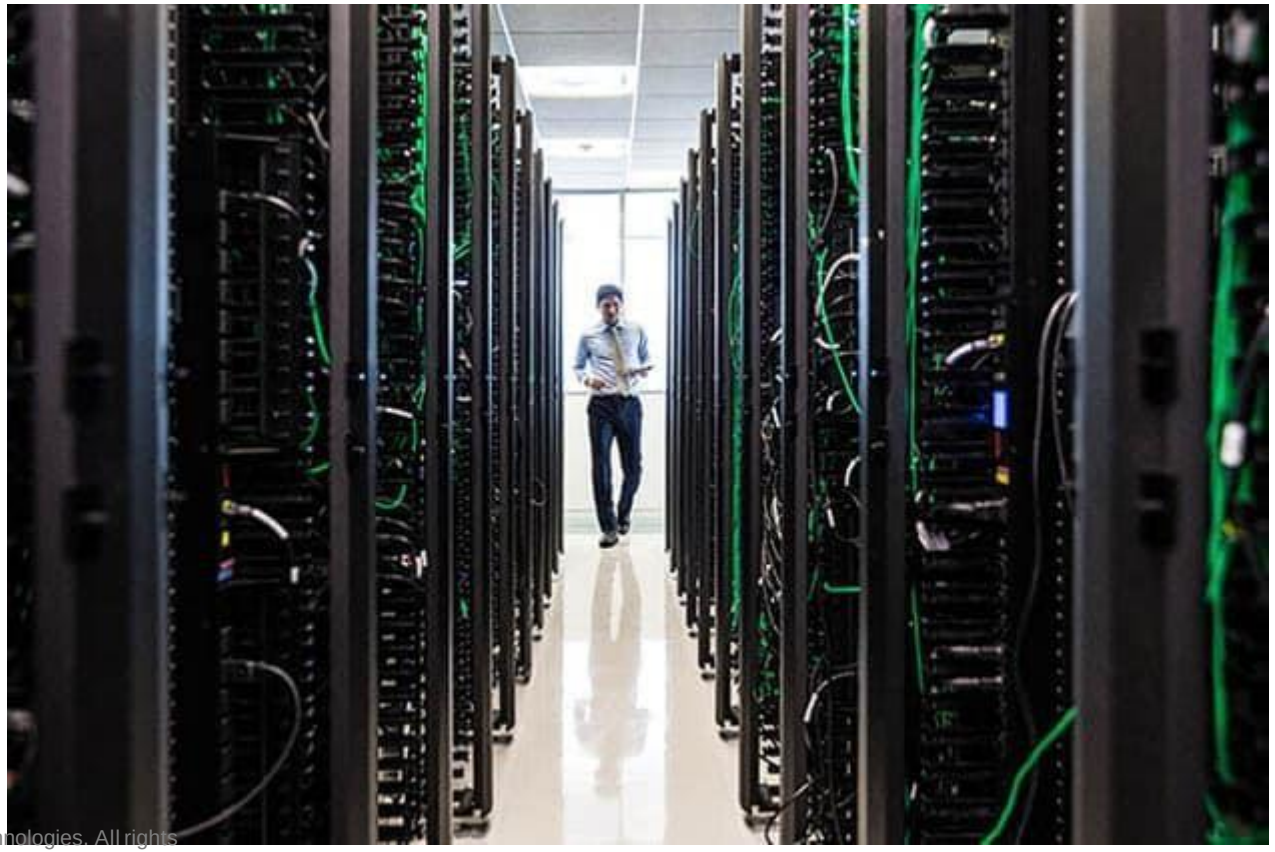
Regions

- A region is a set datacenter deployed within a latency defined perimeter and connected through dedicated low latency cable



Datacenter

- A datacenter are centralized locations where computing and networking equipment is concentrated for storing , processing and distributing large volume of data



How to handle failures?

Availability Set

- An **Availability Set** is a logical grouping capability for isolating VM resources from each other when they are deployed.
- **Azure** makes sure that the VMs you place within an **Availability Set** run across multiple physical servers, compute racks, storage units, and network switches

Availability Zone

- **Availability zones** (AZs) are isolated locations within data center regions from which public cloud services originate and operate.
- **Unique physical locations within a region. Each zone is made up of one or more datacenters equipped with independent power, cooling, and networking.**
- **Fauld domain, update domain**

Region Pair

- **A regional pair consists of two regions within the same geography.**
- **Azure serializes platform updates (planned maintenance) across regional pairs, ensuring that only one region in each pair updates at a time.**
- **If an outage affects multiple regions, at least one region in each pair will be prioritized for recovery.**

Contd.

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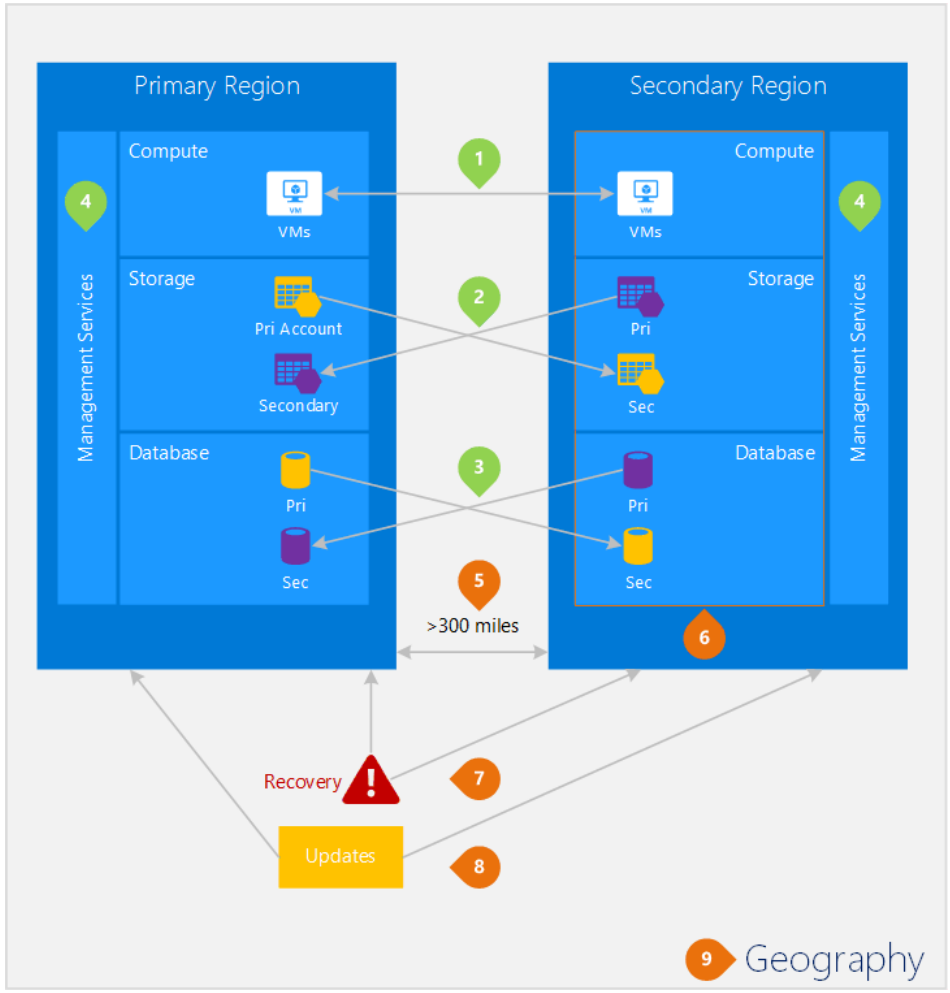
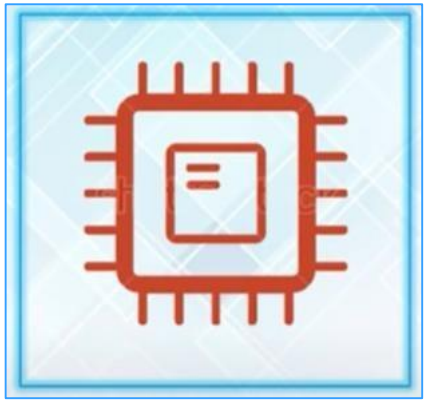

Primary Region
Secondary Region
Compute
VMs
Storage
Pri Account
Secondary
Database
Pri
Sec
Management Services
1
2
3
4
5
>300 miles
6
Recovery
7
Updates
8
9
Geography

Azure Services

Service
s

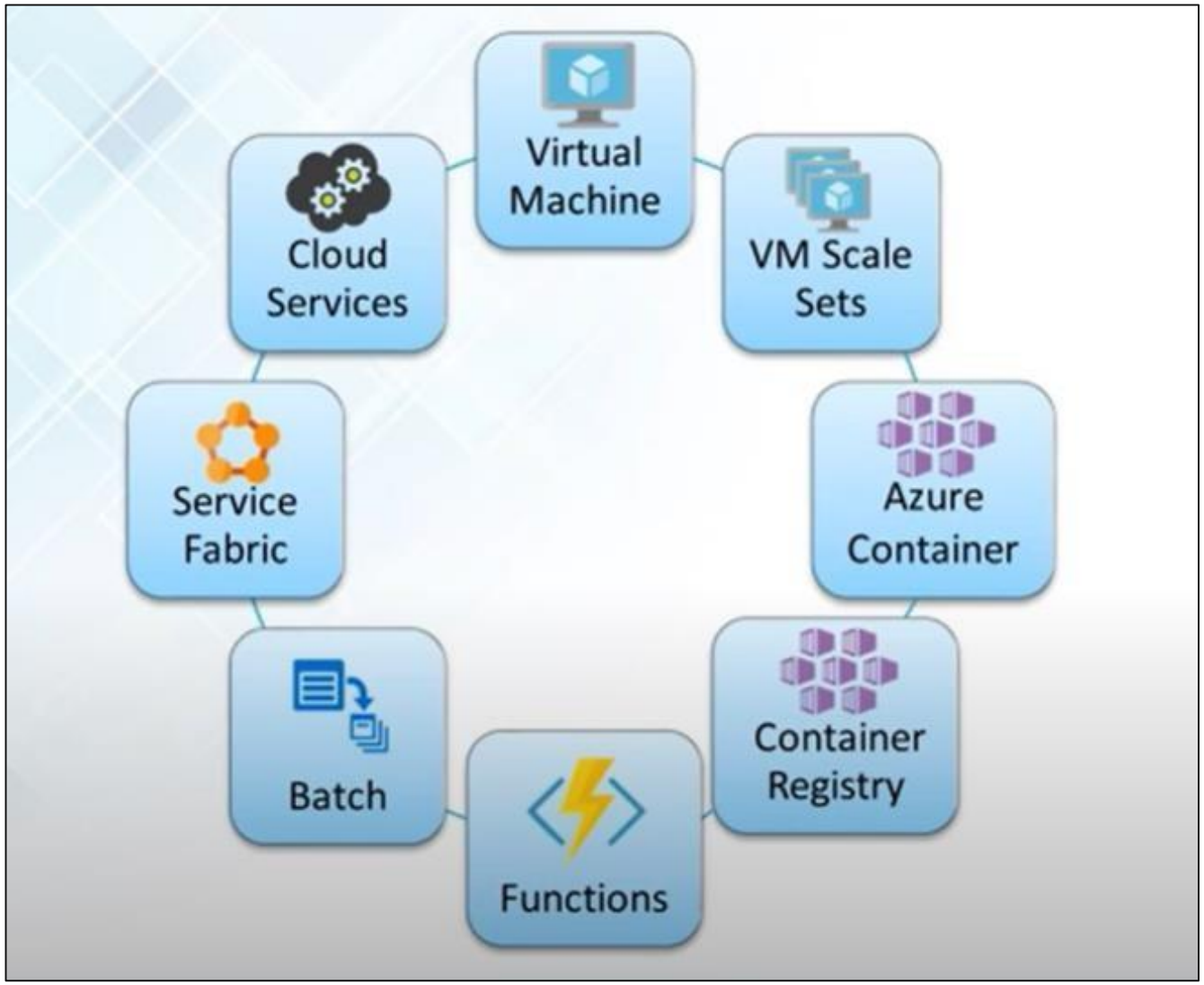

AI + Machine Learning
Analytics
Compute
Containers
Databases
Developer Tools
DevOps
Identity
Integration
IoT
Management tools
Media
Migration
Mobile
Networking
Security
Storage
Web

Azure Compute Services



Compute services provides the building level products, which dictates and determines the execution of an application in Azure platform

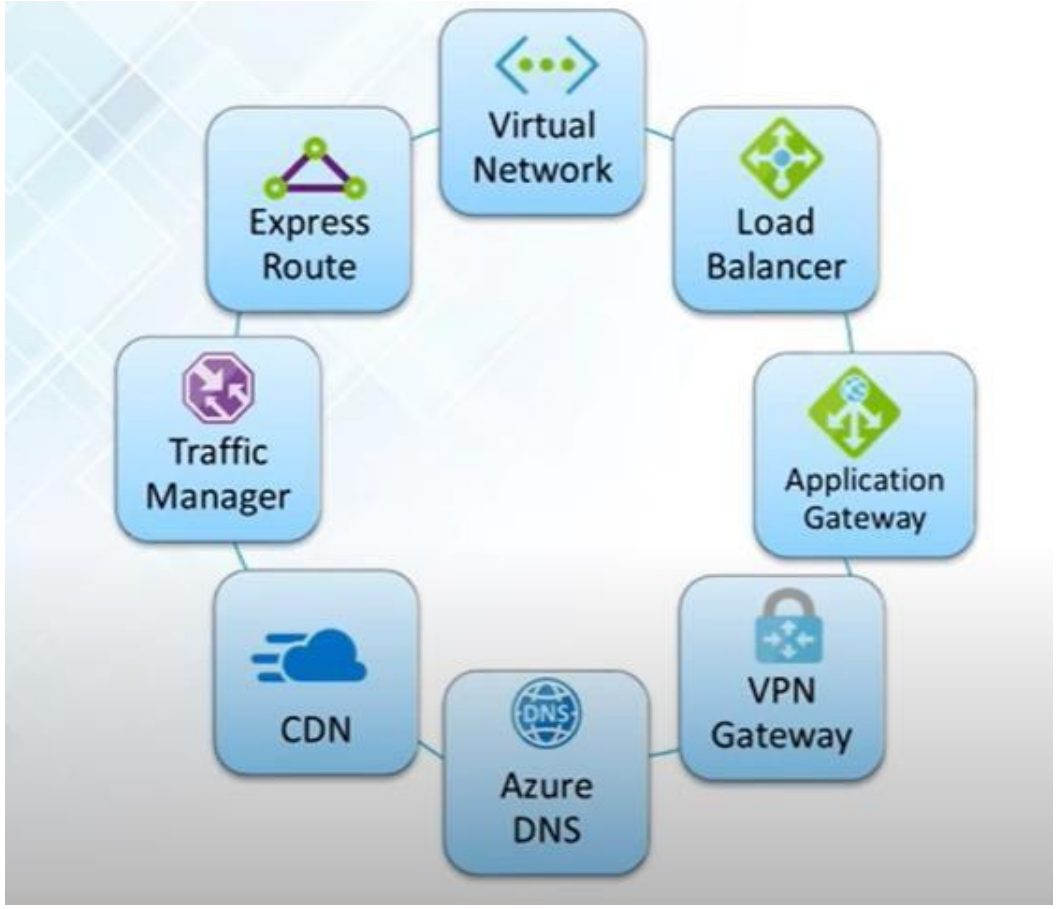
Azure Compute Services



Azure Networking Services

- Impart scalability and security to enterprise apps using Networking solutions
- Connect privately and securely to cloud with Azure ExpressRoute
- Distribute user traffic to specific endpoints with Azure Traffic Manager
- Obtain unmatched availability and performance with Azure Load Balancer
- Tie on premises infrastructure to the Cloud with VPN Gateway

Azure Networking Services



Azure Storage Services

- It is the cloud Storage solution for modern applications that rely on durability,availability and scalability to meet needs of their customers.
- Massively scalable , so you can store and process hundreds of terabytes of data to support the
  big data scenarios required by Financial , Scientific communities.
- Elastic, so you can design applications for a large global audience.
- Has an auto partitioning system that automatically load balances your data based on traffic.

Azure Storage Services

Demo

Virtual machine

Virtual Machine Creation

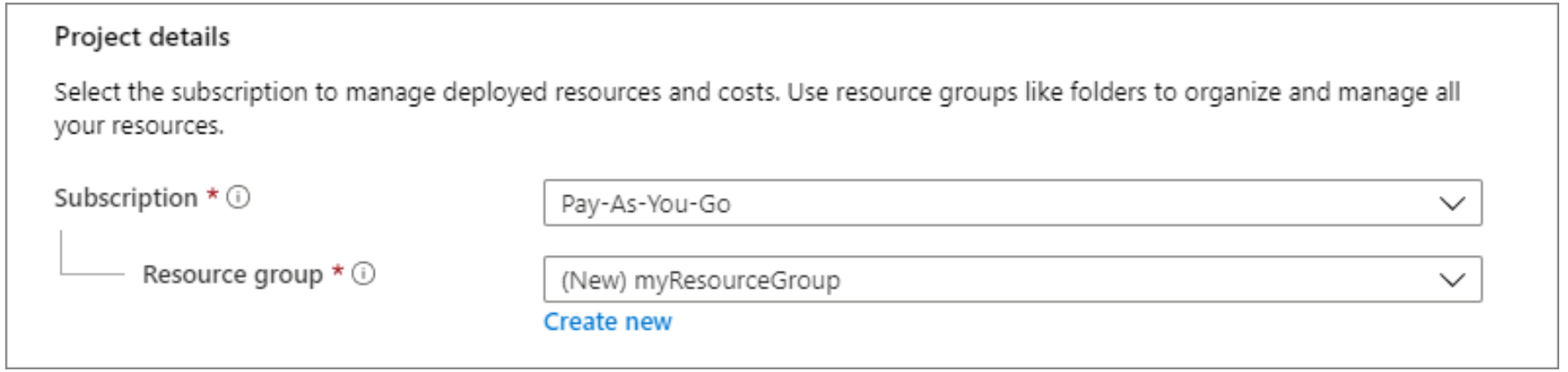
1. Sign in to the Azure portal at https://portal.azure.com.

2. Type **virtual machines** in the search

3. Under **Services**, select **Virtual machines**.

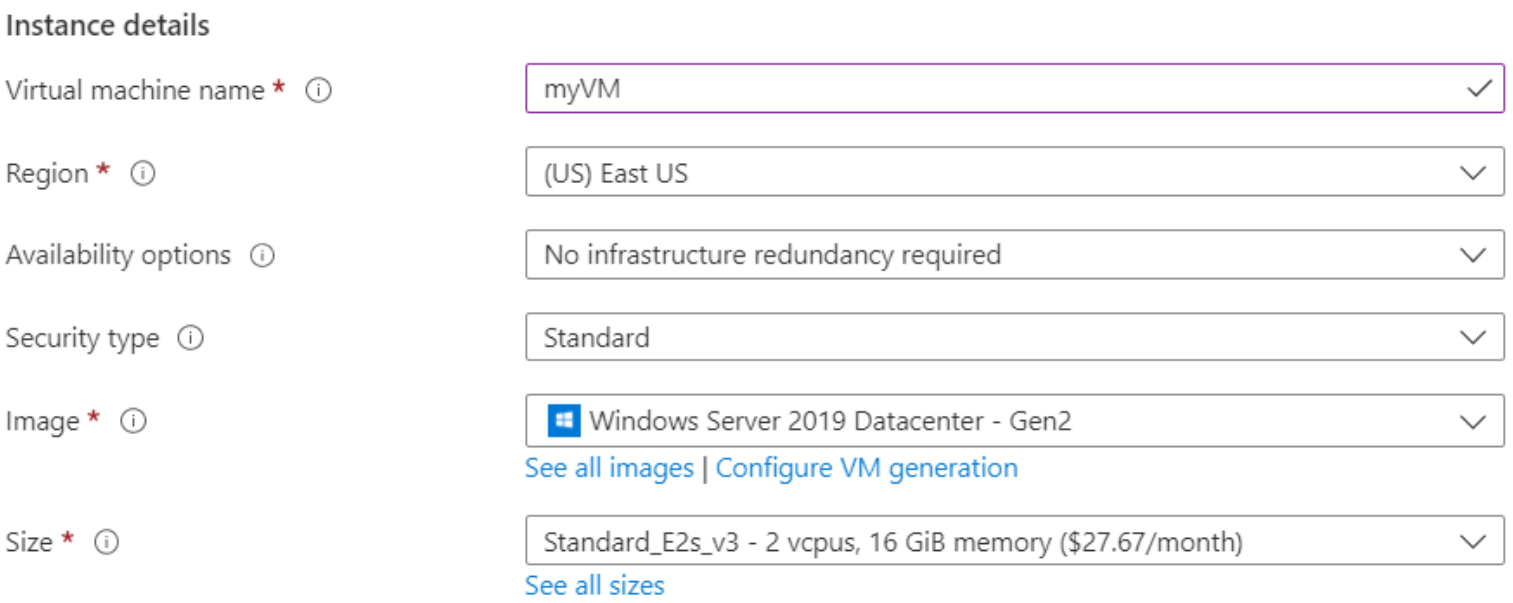
4. In the **Virtual machines** page, select **Create** and then **Virtual machine**. The **Create a virtual machine** page opens.

5. In the **Basics** tab, under **Project details**, make sure the correct subscription is selected and then choose to **Create new** resource group. Type *myResourceGroup* for the name.



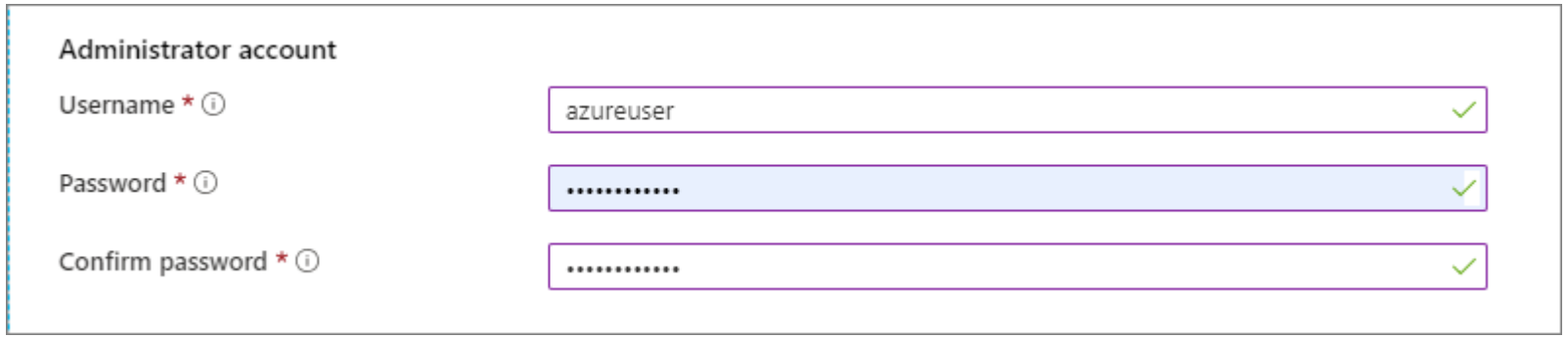
Virtual Machine Creation

6. Under **Instance details**, type *myVM* for the **Virtual machine name** and choose *Windows Server 2019 Datacenter - Gen2* for the **Image**. Leave the other defaults.

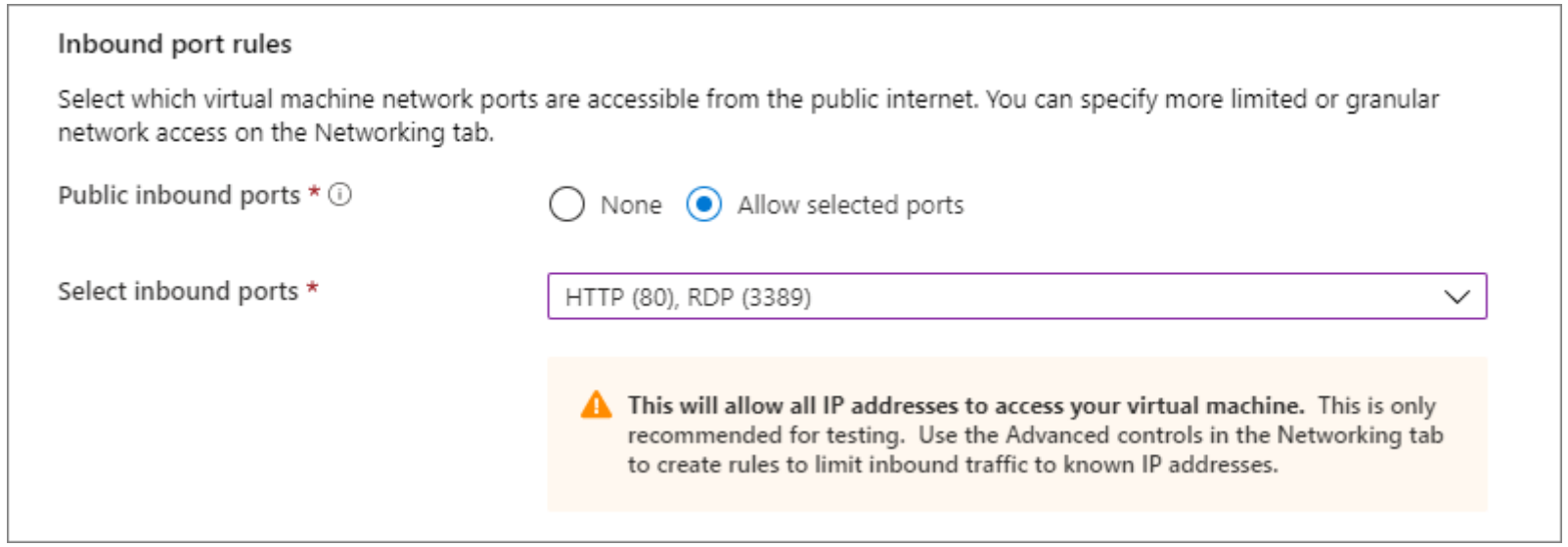


7. Under **Administrator account**, provide a username, such as *azureuser* and a password. The password must be at least 12 characters long and meet the defined complexity requirements.

Virtual Machine Creation

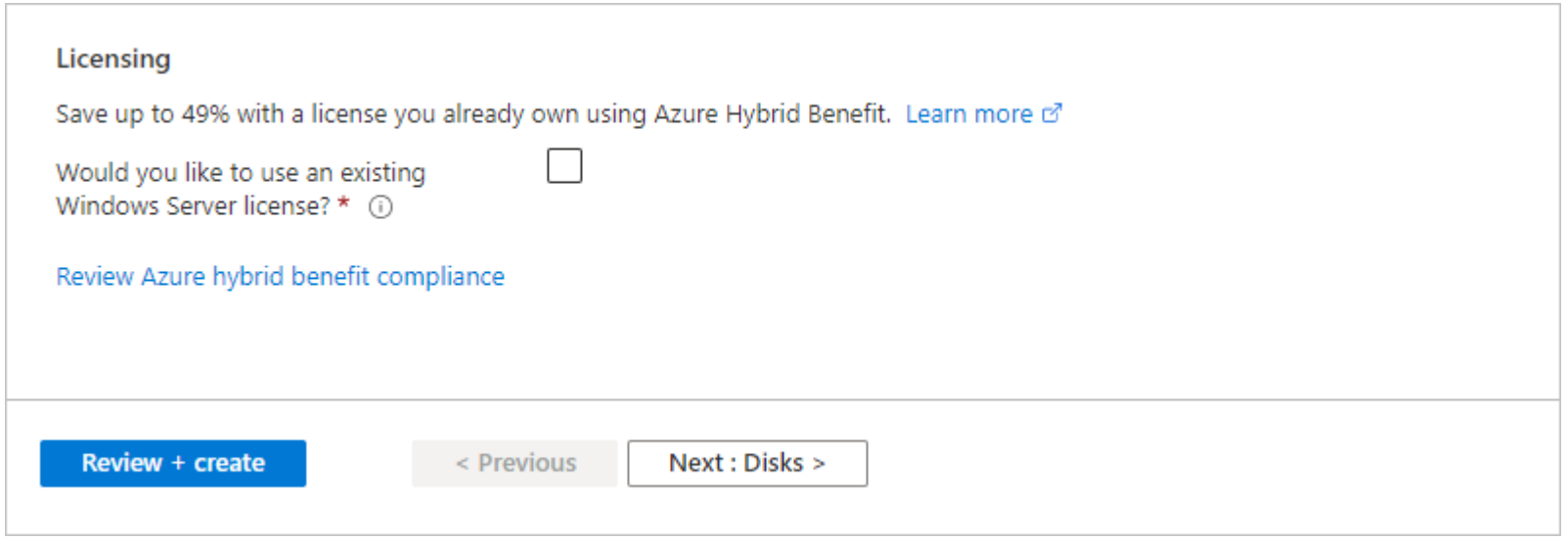


8. Under **Inbound port rules**, choose **Allow selected ports** and then select **RDP (3389)** and **HTTP (80)** from the drop-down.



Virtual Machine Creation

9. Leave the remaining defaults and then select the **Review + create** button at the bottom of the page

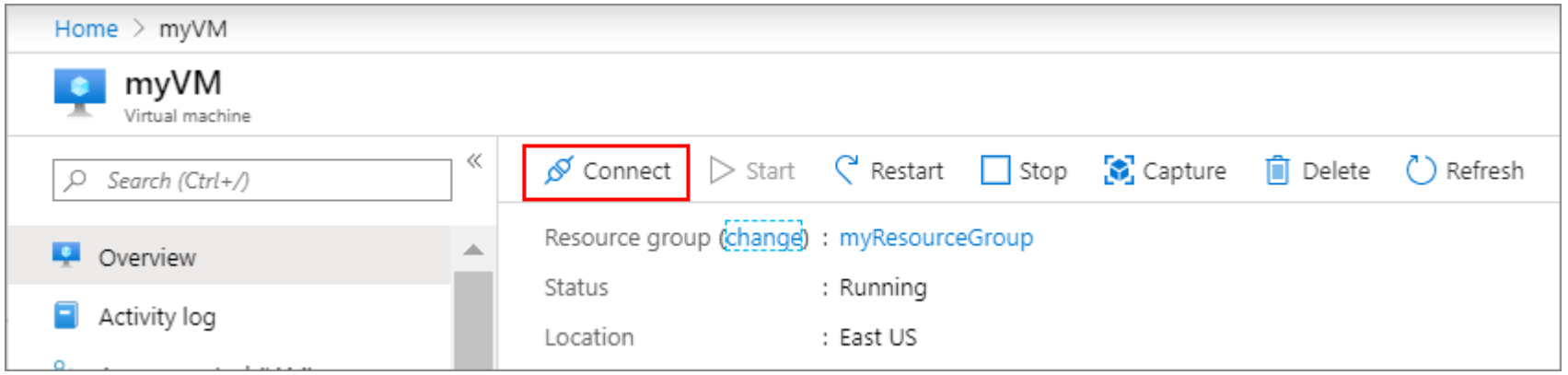


10. After validation runs, select the **Create** button at the bottom of the page.

11. After deployment is complete, select **Go to resource**.

Virtual Machine Creation

12. On the overview page for your virtual machine, select the **Connect** > **RDP**.

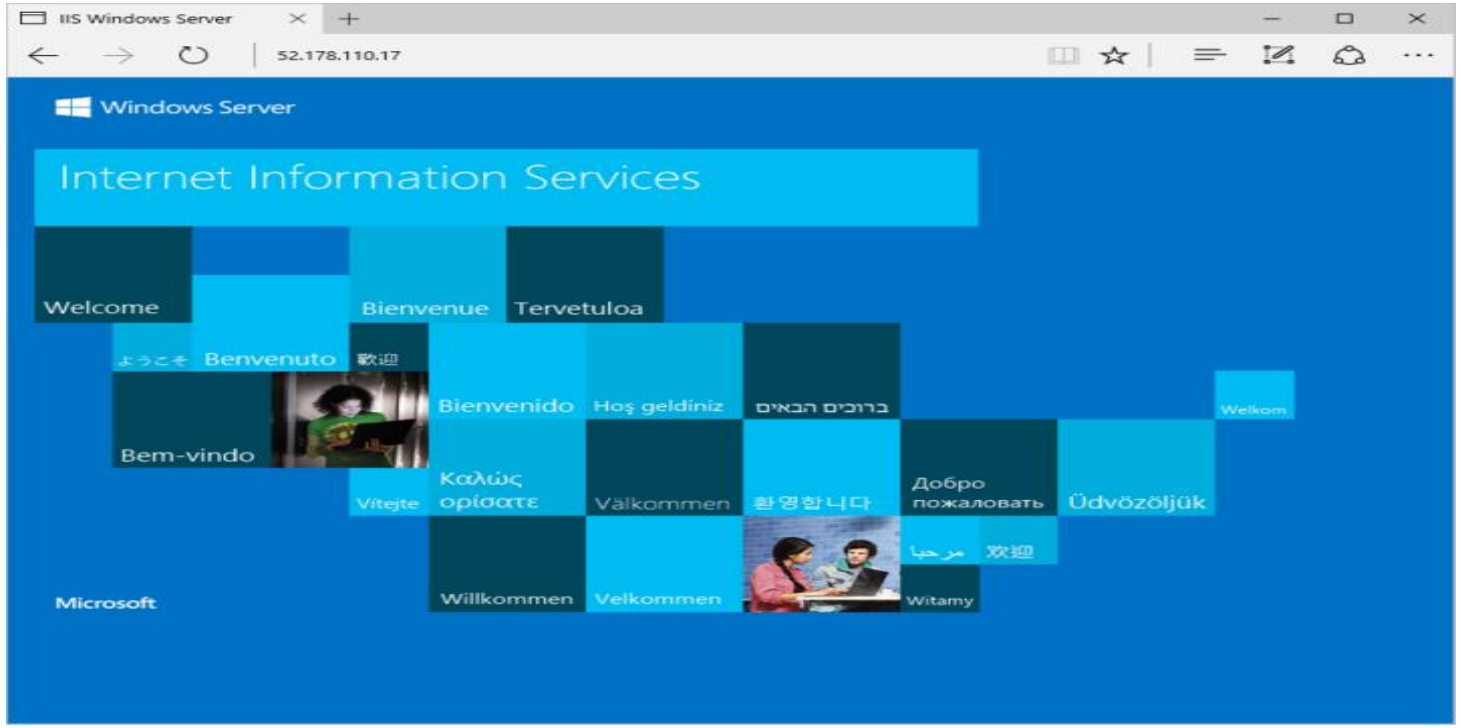


13. In the **Connect with RDP** page, keep the default options to connect by IP address, over port 3389, and click **Download RDP file**.

14. Open the downloaded RDP file and click **Connect** when prompted.

Virtual Machine Creation

15. Enter the credentials and connect



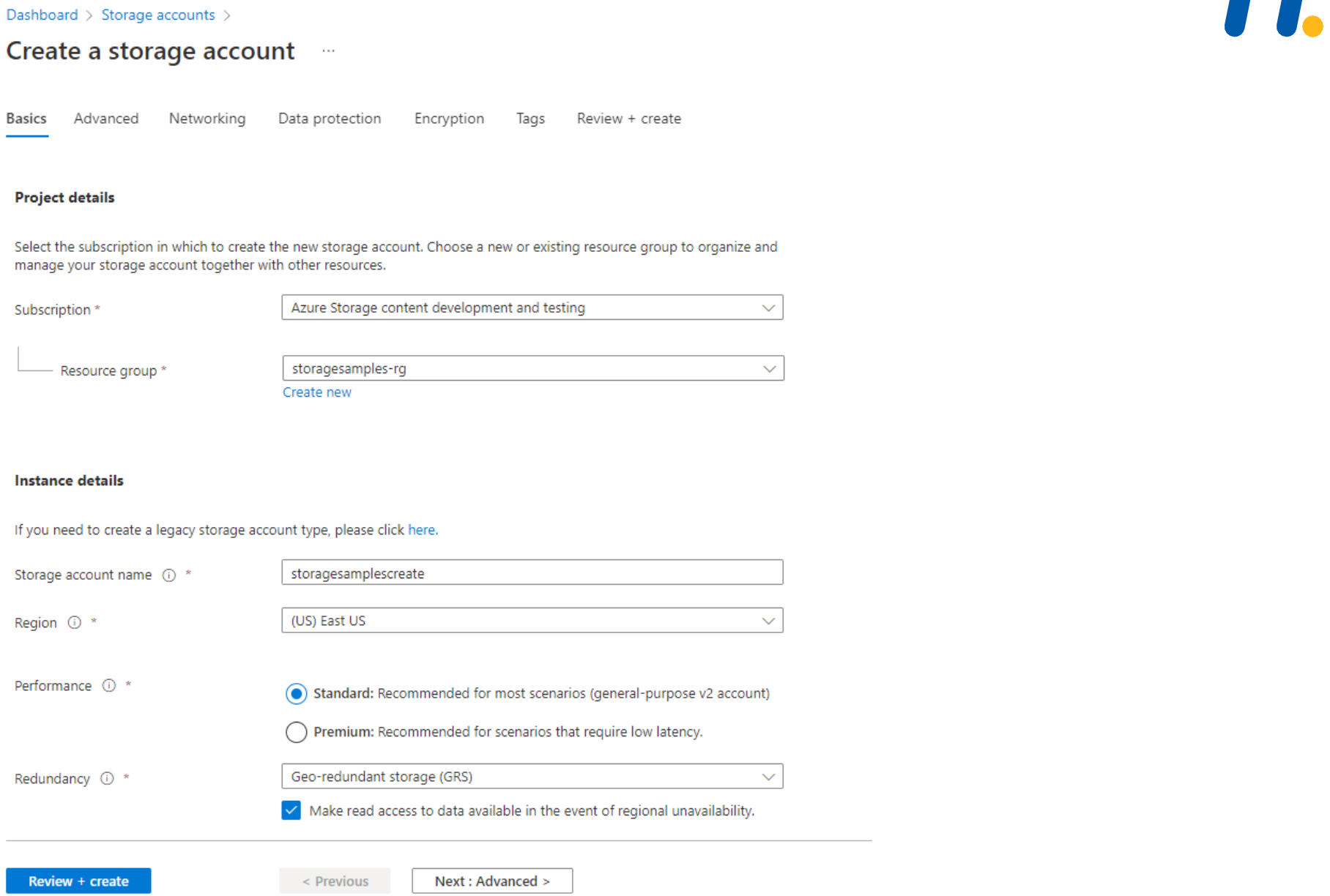
Azure storage : blob

Storage account creation

An Azure storage account contains all of your Azure Storage data objects: blobs, files, queues, and tables

1. From the left portal menu, select **Storage accounts** to display a list of your storage accounts.
On the **Storage accounts** page, select **Create**.

Storage account creation



Container creation

2. Navigate to your new storage account in the Azure portal.

3. In the left menu for the storage account, scroll to the **Data storage** section, then select **Containers**.

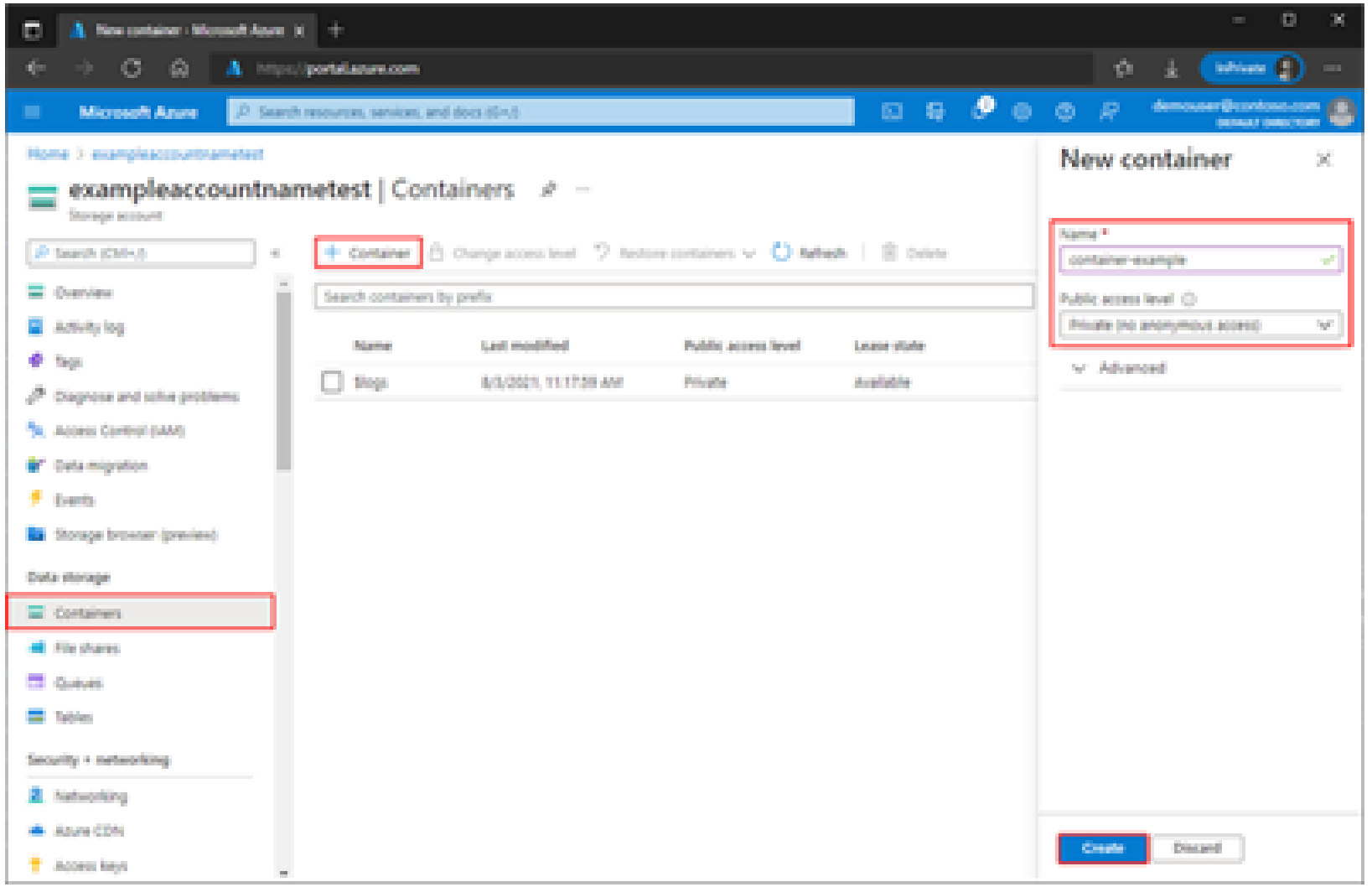
4. Select the **+ Container** button.

5. Type a name for your new container

6. Set the level of public access to the container. The default level is **Private (no anonymous access)**.

7. Select **Create** to create the container.

Container creation



Blob creation

8. In the Azure portal, navigate to the container you created in the previous section.

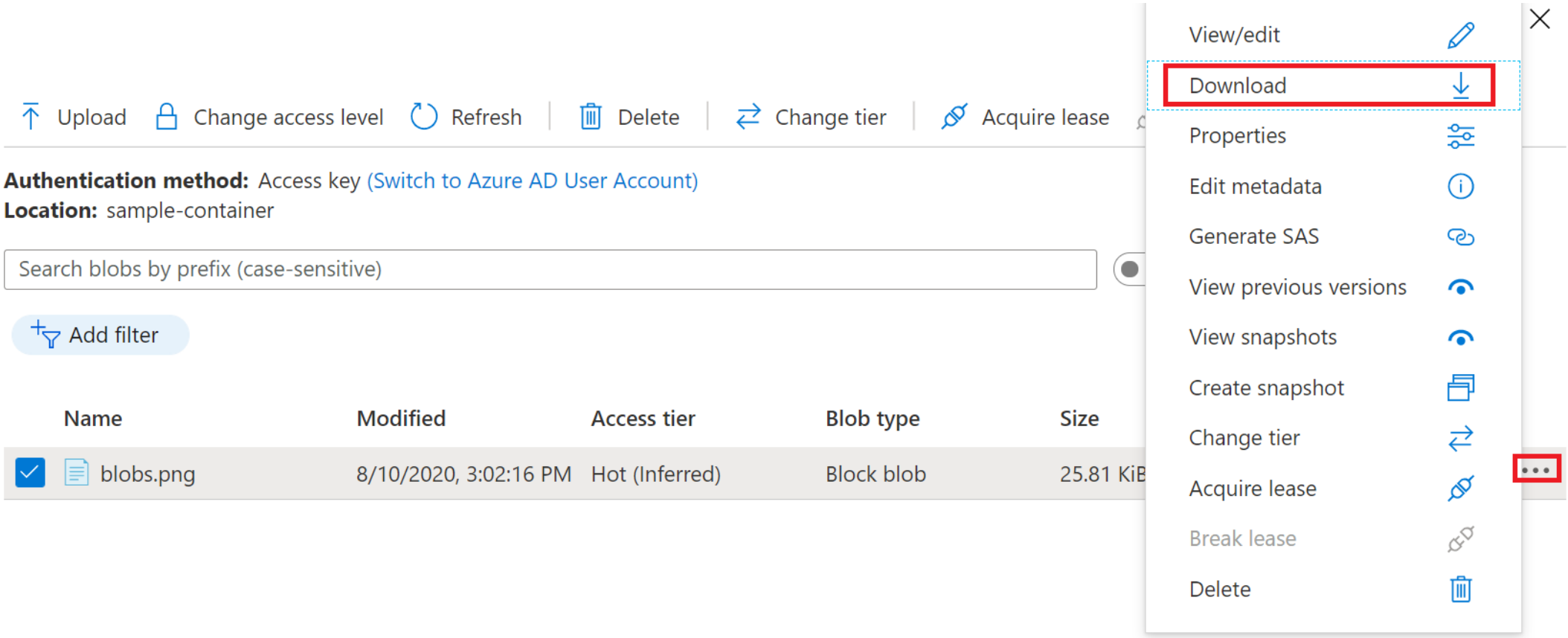
9. Select the container to show a list of blobs it contains. This container is new, so it won't yet contain any blobs.

10. Select the **Upload** button to open the upload blade and browse your local file system to find a file to upload as a block blob. You can optionally expand the **Advanced** section to configure other settings for the upload operation.

11. Select the **Upload** button to upload the blob.

12. Upload as many blobs as you like in this way. You'll see that the new blobs are now listed within the container.

View a blob



Thank you

Innovative Services

Passionate