

# ASSIGNMENT 8

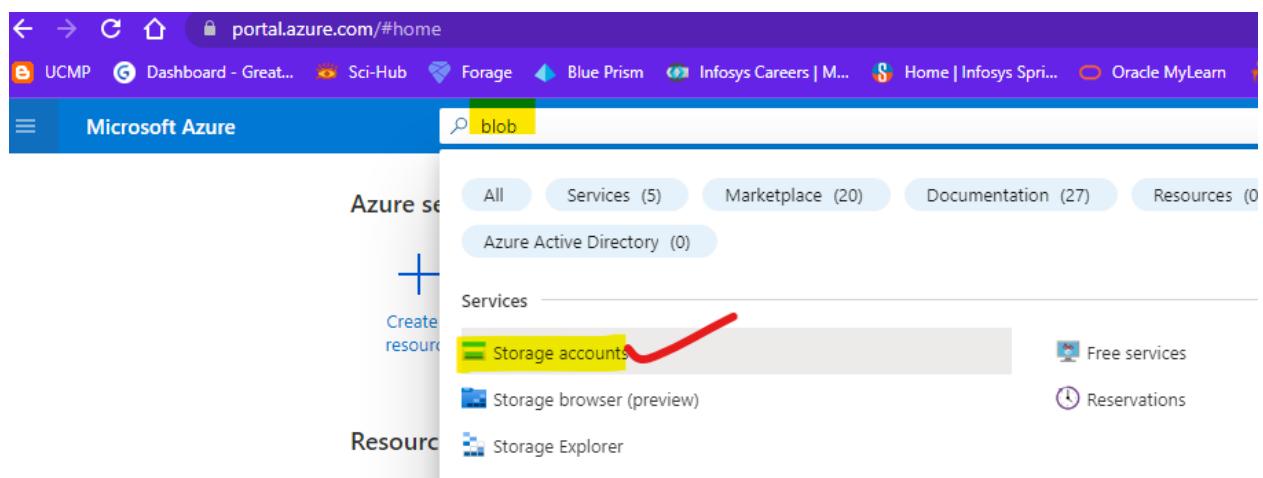
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BATCH – DXC-262-ANALYTICS-B12-AZURE  
EMPLOYEE DOMAIN –AZURE ANALYTICS  
TRAINING UNDER – MANIPAL PRO LEARN  
DATE OF SUBMISSION – 8TH JUNE 2022

ROLL NUMBER – DXC-262-AB-1218  
COMPANY – DXC TECHNOLOGY  
TRAINER NAME – MR. AJAY KUMAR  
NO.OF QUESTIONS: 10

## 1. Explain the steps with screenshots how to create Blob storage in Azure cloud?

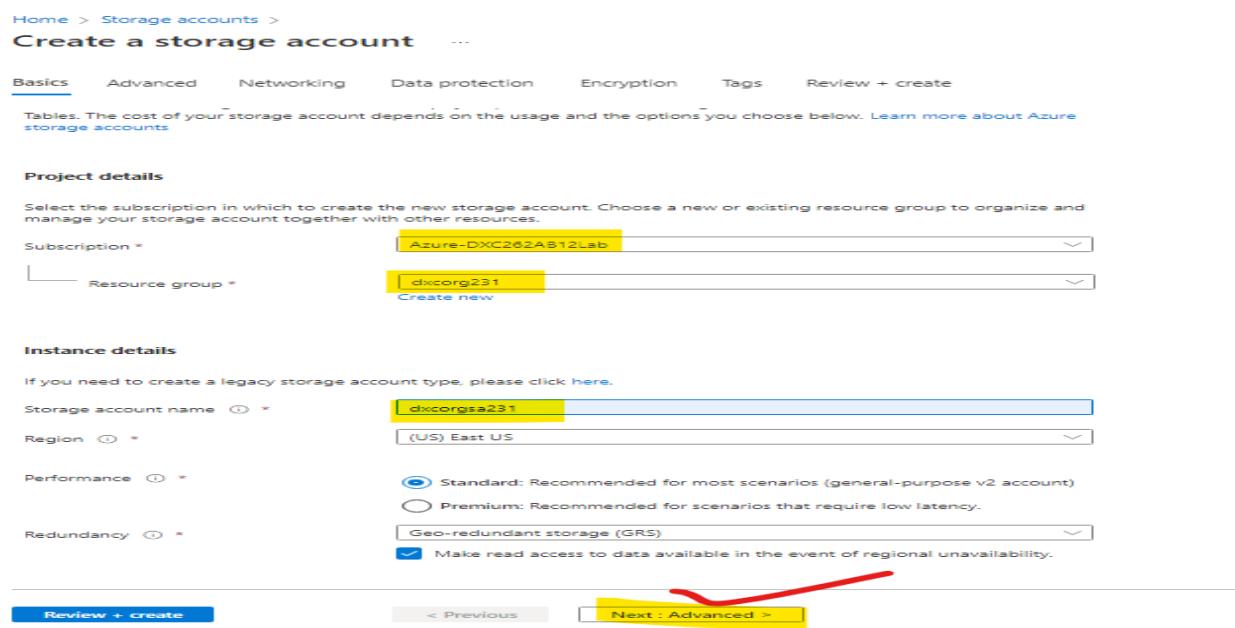
**Ans:** To create blob storage (Also known as Storage account) in azure cloud we have to follow the following steps

### Step-1 :



The screenshot shows the Microsoft Azure portal homepage. At the top, there is a search bar with the word "blob". Below the search bar, there are several service categories: All, Services (5), Marketplace (20), Documentation (27), and Resources (0). Under the "Services" category, "Storage accounts" is highlighted with a yellow box and a red checkmark. Other options include "Storage browser (preview)" and "Storage Explorer". On the left side, there is a sidebar with a "Create resource" button and a "Resource groups" section.

### Step-2:



The screenshot shows the "Create a storage account" wizard on the Azure portal. The current step is "Basics".  
**Project details:**  
Subscription: Azure-DXC262AB12Lab  
Resource group: discorg231 (selected)  
**Instance details:**  
Storage account name: dxcongsa231  
Region: (US) East US  
Performance: Standard: Recommended for most scenarios (general-purpose v2 account) (selected)  
Redundancy: Geo-redundant storage (GRS)  
Make read access to data available in the event of regional unavailability:   
**Buttons:**  
Review + create < Previous Next : Advanced >

### Step-3:

The screenshot shows the 'Create a storage account' wizard in the Microsoft Azure portal. The top navigation bar includes 'Home > Storage accounts > Create a storage account'. A progress bar at the top indicates 'Validation passed' and shows steps: Basics (yellow), Advanced (red), Networking (yellow), Data protection (yellow), Encryption (red), Tags (red), and Review + create (yellow). The 'Review + create' step is highlighted with a red arrow pointing to the 'Create' button at the bottom. The 'Basics' section shows the following configuration:

Subscription	Azure-DXC262AB12Lab
Resource Group	dxcorg231
Location	eastus
Storage account name	dxcorgsa231
Deployment model	Resource manager
Performance	Standard
Replication	Read-access geo-redundant storage (RA-GRS)

The 'Advanced' section shows the following settings:

Secure transfer	Enabled
Allow storage account key access	Enabled
Allow cross-tenant replication	Enabled
Default to Azure Active Directory authorization in the Azure portal	Disabled
Blob public access	Enabled
Minimum TLS version	Version 1.2
Enable hierarchical namespace	Disabled
Enable network file system v3	Disabled
Access tier	Hot
Enable SFTP (preview)	Disabled
Large file shares	Disabled

The 'Networking' section shows the following configuration:

Network connectivity	Public endpoint (all networks)
----------------------	--------------------------------

At the bottom, there are 'Previous' and 'Next >' buttons, and a 'Download a template for automation' link.

### Step-4:

The screenshot shows the 'Overview' page for the storage account 'dxcorgsa231\_1654686555341'. The top navigation bar includes 'Home >'. A deployment status message 'Deployment is in progress...' is displayed, with a red arrow pointing to the deployment details table. The deployment details table shows the following information:

Resource	Type	Status	Operation details
No results.			

### Step-5: The storage Account is created successfully.

The screenshot shows the 'Overview' page for the storage account 'dxcorgsa231\_1654686555341'. The top navigation bar includes 'Home >'. A deployment status message 'Your deployment is complete' is displayed, with a red arrow pointing to the deployment details table. The deployment details table shows the following information:

Resource	Type	Status	Operation details
No results.			

On the right side, there are promotional cards for 'Cost Management' and 'Microsoft Defender for Cloud'.

**2. Explain the steps with screenshots how to create Virtual machine & how to connect from**

**(i) Local Computer - CMD method ?**

**(ii) Using Azure cloud Shell?**

**(iii) Also using Azure Bastion ?**

**Ans: Step 1:** Login to Azure and click on “Virtual Machine”.

The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with links for 'Subscription Details | Nuvepro', 'Home - Microsoft Azure', and a search bar containing 'virtual machine'. Below the navigation bar is a blue header bar with the text 'Microsoft Azure' and a search icon. The main content area has a sidebar on the left with sections for 'Azure Active Directory' (0), 'Services' (22), 'Marketplace' (20), 'Documentation' (27), 'Resources' (0), and 'Recommendations'. The 'Services' section is expanded, showing 'Virtual machines' highlighted with a yellow box and a red arrow pointing to it. Other service icons include 'SQL virtual machines', 'Backup center', 'Backup vaults', and 'Recovery Services vaults'. A 'Zoom out' button is visible next to the 'Virtual machines' icon.

**Step 2:** Click on “create” and then click on “Azure Virtual Machine” to create a Virtual Machine.

The screenshot shows the 'Virtual machines' blade in the Microsoft Azure portal. At the top, there's a breadcrumb trail 'Home > Virtual machines'. Below the title, there's a user profile 'Manipal Pro Learn (manipalazure.onmicrosoft.com)'. On the left, there are two main options: '+ Create' (highlighted with a yellow box and a red arrow) and 'Switch to classic'. The '+ Create' option is further expanded, showing two choices: 'Azure virtual machine' (highlighted with a yellow box and a red arrow) and 'Azure virtual machine with preset configuration'. The 'Azure virtual machine' option is described as 'Create a virtual machine hosted by Azure'. On the right side of the blade, there are filter and sorting options: 'Type == all', 'Resource group == all', 'Location == all', and 'Add filter'. There are also buttons for 'Refresh', 'Export to CSV', 'Open query', and 'Assign'.

**Step 3:** Complete all the required fields and click on “create” after reviewing to deploy a virtual machine.

Validation passed

Search resources, services, and docs (G+)

Home > Virtual machines >

## Create a virtual machine

Basics Disks Networking Management Advanced Tags **Review + create**

**Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.**

**PRODUCT DETAILS**

1 X Standard D2s v3  
by Microsoft  
[Terms of use](#) | [Privacy policy](#)

**Pricing not available for this offering**

**TERMS**

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; and (b) 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.

**You have set SSH port(s) open to the internet.** This is only recommended for testing. If you want to change this setting, go back to Basics tab.

Basics Create < Previous Next > Download a template for automation

## Step 4: Generate new key pairs.

Validation passed

Search resources, services, and docs (G+)

Home > Virtual machines >

## Create a virtual machine

Basics Disks Networking Management Advanced Tags **Review + create**

**Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.**

**PRODUCT DETAILS**

1 X Standard D2s v3  
by Microsoft  
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**You have set SSH port(s) open to the internet.** This is only recommended for testing. If you want to change this setting, go back to Basics tab.

**Generate new key pair**

An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

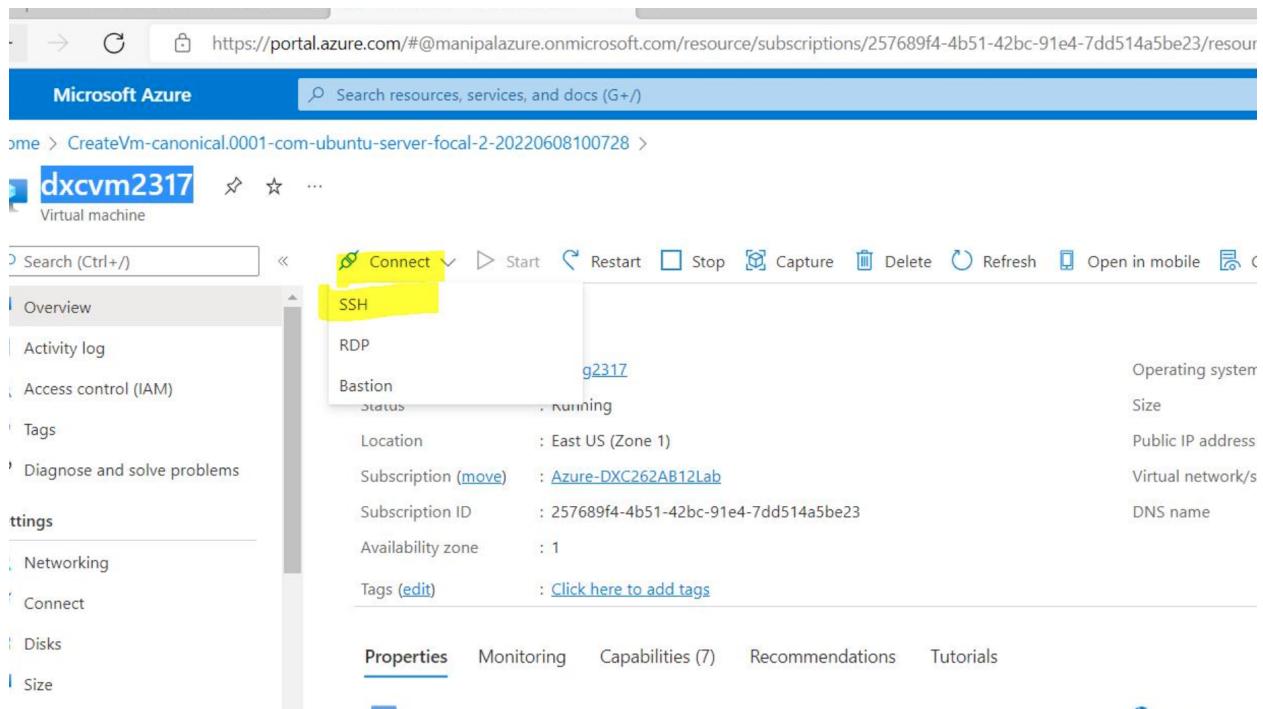
**Download private key and create resource**

Return to create a virtual machine

Basics Create < Previous Next > Download a template for automation

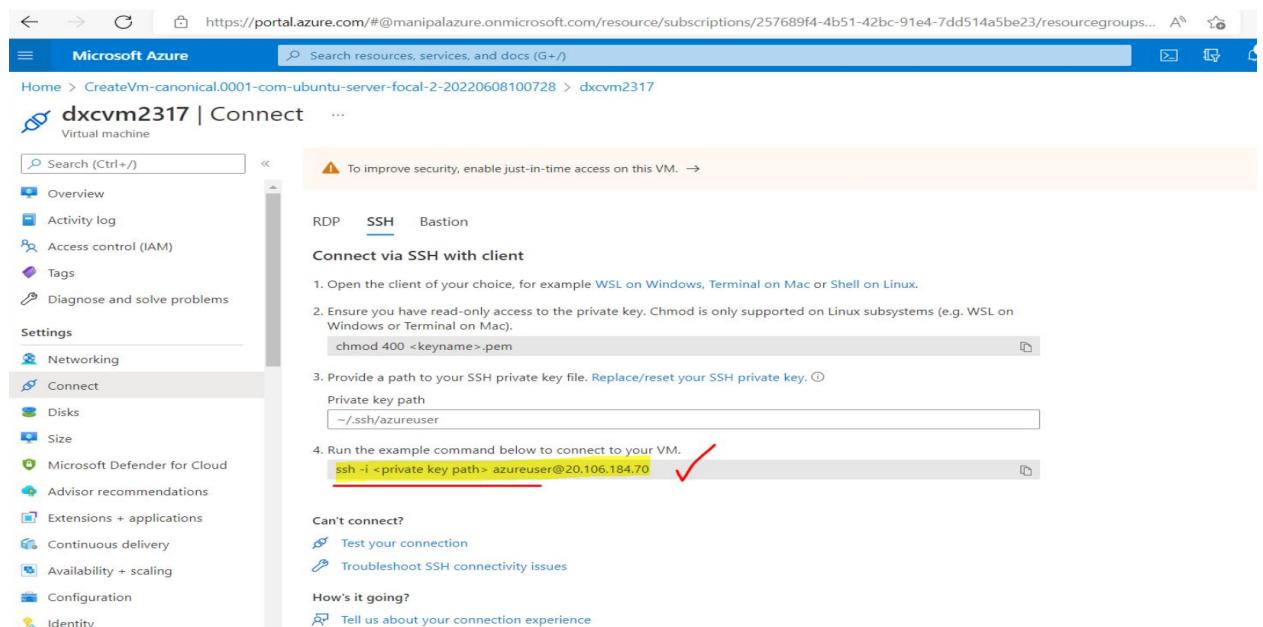
**Step 5:** Connect to a virtual machine using either of the three methods.

(i) Local Computer - CMD method: connect using ssh.



The screenshot shows the Microsoft Azure portal interface. The URL in the address bar is <https://portal.azure.com/#@manipalazure.onmicrosoft.com/resource/subscriptions/257689f4-4b51-42bc-91e4-7dd514a5be23/resourcegroups/CreateVm-canonical.0001-com-ubuntu-server-focal-2-20220608100728/providers/Microsoft.Compute/virtualMachines/dxcmv2317>. The main content area displays the VM details for 'dxcmv2317', which is currently running in East US (Zone 1). The 'SSH' connection option is highlighted with a yellow box in the top navigation bar. The VM status is shown as 'Running'.

To connect with VM run the key path in the command prompt.



The screenshot shows the 'Connect' blade for the VM 'dxcmv2317'. The 'SSH' tab is selected. A warning message at the top says 'To improve security, enable just-in-time access on this VM.' Below it, instructions for connecting via SSH are provided. Step 4 shows the command: `ssh -i <private key path> azureuser@20.106.184.70`, which is highlighted with a yellow box and a red checkmark.

```

Microsoft Windows [Version 10.0.19044.1708]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\system32>cd C:/Users/KITS/Documents\dxcmv2317_key.pem azureuser@20.106.184.70 ↗
The authenticity of host '20.106.184.70 (20.106.184.70)' can't be established.
ECDSA key fingerprint is SHA256:7hr8j6uirKJnidzL2jxQ9pdw6+KNsgbAkXYV4srwDk.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '20.106.184.70' (ECDSA) to the list of known hosts.

Welcome to Ubuntu 20.04.4 LTS (GNU/Linux 5.13.0-1025-azure x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

 System information as of Wed Jun  8 04:54:12 UTC 2022

 System load: 0.0          Processes:           130
 Usage of /: 4.8% of 28.90GB   Users logged in:     0
 Memory usage: 3%           IPv4 address for eth0: 10.0.0.4
 Swap usage: 0%

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo root" for details.

```

(ii) Using Azure cloud Shell: Click on CLI/PS to connect to VM using cloud shell.

**dxcmv2317** Virtual machine

**CLI / PS**

Essentials	Properties	Networking
Resource group (move) : dxcrg2317 Status : Running Location : East US (Zone 1) Subscription (move) : Azure-DXC262AB12Lab Subscription ID : 257689f4-4b51-42bc-91e4-7dd514a5be23 Availability zone : 1 Tags (edit) : Click here to add tags	Operating system : Linux (ubuntu 20.04) Size : Standard D2s v3 (2 vcpus, 8 GiB memory) Public IP address : 20.106.184.70 Virtual network/subnet : dxcrg2317-vnet/default DNS name : Not configured	Public IP address : 20.106.184.70 Public IP address (IPv6) : - Private IP address : 10.0.0.4 Private IP address (IPv6) : -

Click on the icon beside the search bar to open Azure Cloud Shell.

**dxcmv2317** Virtual machine

**CLI / PS**

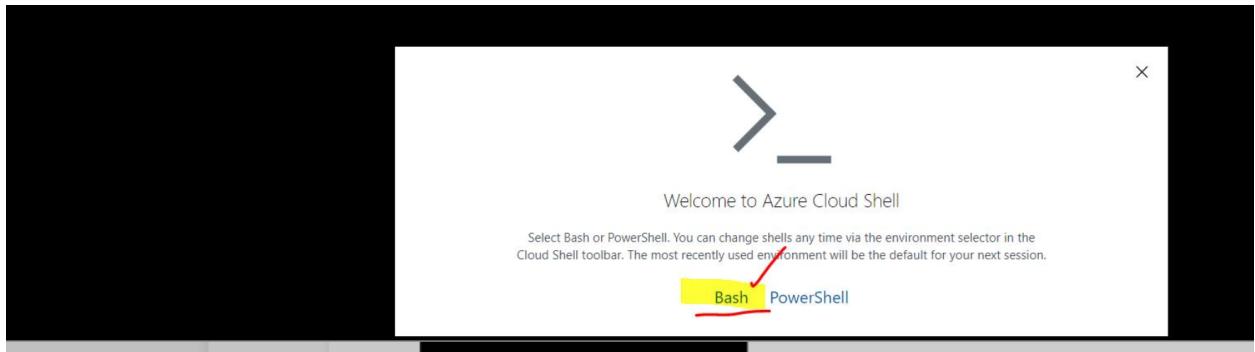
**CLI** PowerShell

The Azure command-line interface (Azure CLI) is a set of commands used to create and manage Azure resources. Learn more about Azure CLI ↗

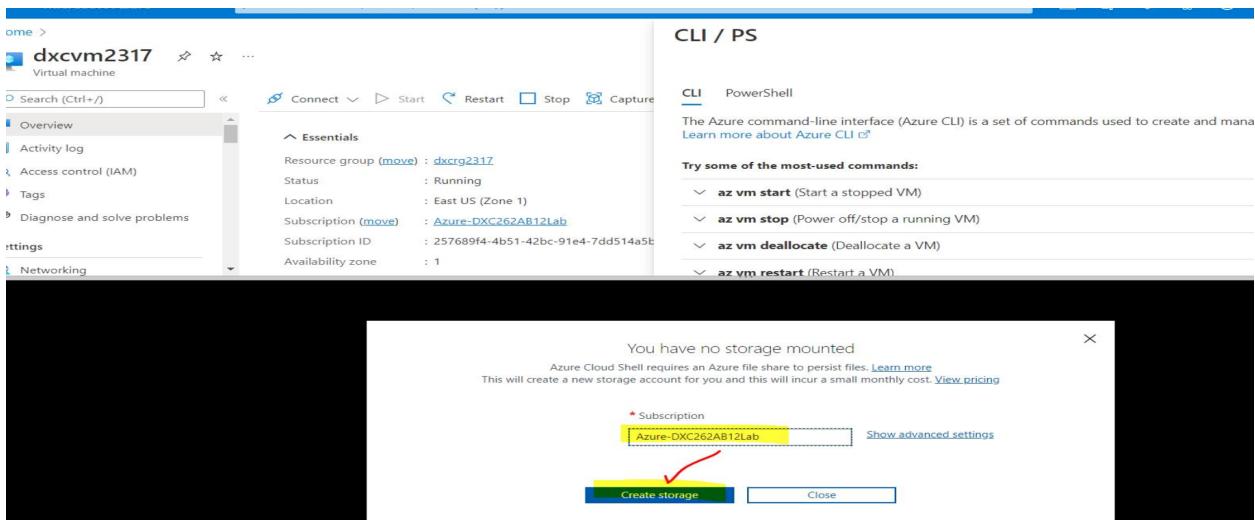
Try some of the most-used commands:

- az vm start (Start a stopped VM)
- az vm stop (Power off/stop a running VM)
- az vm deallocate (Deallocate a VM)
- az vm restart (Restart a VM)

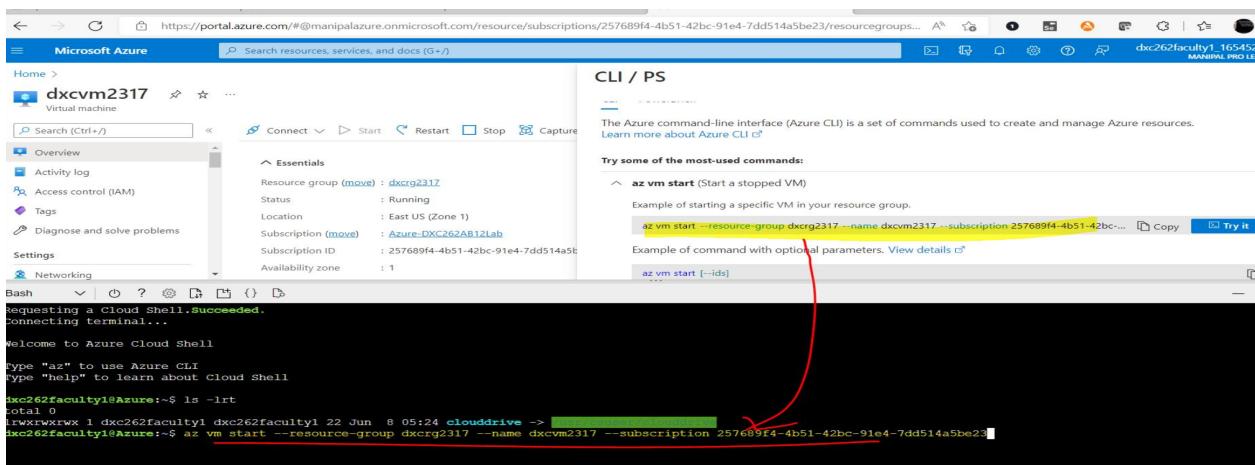
Now click on “bash” to connect to your virtual Machine.



Now create storage as shown in the below screenshot.



Now to start the vm use the az vm start command as shown.



### (iii) Also using Azure Bastion:

Click on connect and select “bastion” to create a virtual machine using Azure Bastion.

The screenshot shows the Microsoft Azure portal interface. The URL is https://portal.azure.com/#@manipalazure.onmicrosoft.com/resource/subscriptions/257689f4-4b51-42bc-91e4-7dd514a5be23/resourcegroups... The page title is "dxcm2317 | Bastion". On the left, there's a sidebar with navigation links like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings (Networking, Connect, Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, Extensions + applications, Continuous delivery), and a search bar. The main content area is titled "Create Bastion" and shows the following details:

- Name: dxcrg2317-vnet-bastion
- Resource group: dxcrg2317
- Virtual network: dxcrg2317-vnet
- Public IP address: dxcrg2317-vnet-ip

A note says "Bastion pricing starts with an hourly base rate." Below that, a message says "\*\*\* Creating a new Bastion 'dxcrg2317-vnet-bastion'." There are two buttons: "Create Azure Bastion using defaults" and "I want to configure Azure Bastion on my own".

To connect to your virtual machine using bastion follow the steps as shown in the below screenshot.

The screenshot shows the Microsoft Azure portal interface, similar to the previous one but with different content. The URL is https://portal.azure.com/#@manipalazure.onmicrosoft.com/resource/subscriptions/257689f4-4b51-42bc-91e4-7dd514a5be23/resourcegroups... The page title is "dxcm2317 | Bastion". The sidebar and search bar are identical. The main content area shows the following details:

- Using Bastion: dxcrg2317-vnet-bastion, Provisioning State: Succeeded
- Please enter username and password to your virtual machine to connect using Bastion.
- Open in new browser tab checkbox is checked.
- Username field contains "azureuser".
- Authentication Type dropdown shows "SSH Private Key (deprecating soon)" selected.
- SSH Private Key (deprecating soon) field contains a long RSA private key string:

```
UV0YIBGtxUJfOfq31vdylBL6arlwEFmdyX6Ejxv5CsmjuJnVTwe8etOOXljiX4C  
e471EB8t9wqsZPa7o0K+hTed5KTE+eeMoZh8Yv1Mc8yDL0pjAoHBAIQy8R2JkP+  
JKsQUHEltQqtsTfETufsMJJQ8znDmOv0pa6mNikdkDtuzEIU+cDiylg6aDfkO69ji  
VzosVNFuCZU41qEZz1YXMn1s4jHF9Fy5eKsZoShdYnOPoixb1x/00Oyb0Ttbh6wM  
uDwWtlk6cr7FnlnPw2bEH8jNh57E8p1O/9jb/pMN0a0pj5ctHI3D2pr/+MY8FdB  
B5hIdgXDVQSmojThtnw188mKFTXgk3ong0AFZTT3NapEj+pk20YC0w==  
-----END RSA PRIVATE KEY-----
```
- Connect button is at the bottom.

### 3. Explain the steps with screenshots how to create a Data factory ?

**Ans:** These are the following steps to create Data factory

**Step-1:** search for data factory in search bar

The screenshot shows the Microsoft Azure search interface. The search bar at the top contains the query "azure data factory". Below the search bar, there are several filter buttons: All, Services (99+), Marketplace (4), Documentation (26), Resources (0), and Resource Groups (0). The "Services" button is highlighted with a yellow box and a red checkmark. The main results section is titled "Services" and lists various services. One item, "Data factories", is highlighted with a yellow box and a red checkmark. Other listed services include Azure Databricks, Datadog, Azure Cosmos DB, Azure Data Explorer Clusters, KoçSistem Azure Data Factory Management, VIAcode Azure Data Factory Monitor, Excel Writer for Azure Data Factory, and Azure Data Factory Analytics (Preview).

**Step-2:** click on create button

The screenshot shows the "Data factories" list page in Microsoft Azure. The top navigation bar includes a "Create" button, which is highlighted with a yellow box and a red checkmark. Below the navigation bar, there are filters for "Subscription == all", "Type == all", "Resource group == all", and "Location". The main table has columns for "Name" and "Type". The "Name" column is sorted in ascending order (indicated by an upward arrow), and the "Type" column is sorted in descending order (indicated by a downward arrow).

**Step-3:**

The screenshot shows the "Create Data Factory" wizard in Microsoft Azure. The current step is "Basics". The "Project details" section requires selecting a subscription and a resource group. The "Subscription" dropdown is set to "Azure-DXC262AB12Lab" and the "Resource group" dropdown is set to "dxcorg231". The "Instance details" section requires specifying a name, region, and version. The "Name" field is filled with "dxcdf231", the "Region" dropdown is set to "East US", and the "Version" dropdown is set to "V2 (Recommended)". At the bottom of the page, there are navigation buttons: "Review + create" (highlighted with a yellow box and a red checkmark), "< Previous", and "Next : Git configuration >".

## Step-4: set all configurations and there is no need to update at last review and create

The screenshot shows the 'Create Data Factory' wizard with the following status:

- Validation Passed**: A green checkmark icon.
- Basics**: A yellow bar with a green checkmark icon.
- Git configuration**: A yellow bar with a red exclamation mark icon.
- Networking**: A yellow bar with a red exclamation mark icon.
- Advanced**: A yellow bar with a green checkmark icon.
- Tags**: A yellow bar with a red exclamation mark icon.
- Review + create**: A yellow bar with a green checkmark icon.

**TERMS**

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**Basics**

Subscription	Azure-DXC262AB12Lab
Resource group	dxcorg231
Name	dxcdf231
Region	East US
Version	V2 (Recommended)

**Networking**

Connect via	Public endpoint
-------------	-----------------

**Create** < Previous Next Download a template for automation

## Step-5: wait it for deployment. and once its is done

The screenshot shows the Azure Data Factory V2 blade for the factory 'dxcdf231'. The 'Essentials' section displays the following information:

- Resource group (move): dxcorg231
- Status: Succeeded
- Location: East US
- Subscription (move): Azure-DXC262AB12Lab
- Subscription ID: 40ef8049-33b2-4e37-bec3-5f8394096bd2

**Getting started**

- Open Azure Data Factory Studio: Start authoring and monitoring your data pipelines and data flows. [Open](#)
- Read documentation: Learn how to be productive quickly. Explore concepts, tutorials, and samples. [Learn more](#)

## Step-6: after clicking on the open button the data factory window will open in new window

The screenshot shows the Azure Data Factory studio for the factory 'dxcdf231'. The main interface includes the following sections:

- Data factory**: dxcdf231
- New** dropdown menu
- Ingest**: Copy data at scale once or on a schedule.
- Orchestrate**: Code-free data pipelines.
- Transform data**: Transform your data using data flows.
- Configure SSIS**: Manage & run your SSIS packages in the cloud.
- Discover more** section with links to:
  - Browse partners (preview)
  - Pipeline templates
  - SAP pipeline templates

#### 4. Explain the steps with screenshots how to copy data from source blob to destination blob?

**Ans:** After creating the source blob(in my case blob name -“aditya”) and destination blob is destination

##### Step-1:

The screenshot shows the 'Containers' section of the Azure Storage account 'dxorgsa231'. It lists three containers: 'Slogs', 'aditya', and 'destination'. The 'aditya' and 'destination' containers are highlighted with yellow boxes and red checkmarks. The 'aditya' container was created at 6/8/2022, 4:39:59 PM, has Private public access level, and is Available. The 'destination' container was created at 6/8/2022, 5:03:16 PM, has Blob public access level, and is Available.

##### Step-2: after That open data factory click on ingest

The screenshot shows the 'Data factory' overview page for 'dxcdf231'. It features several options: 'Ingest' (highlighted with a yellow box and red checkmark), 'Orchestrate', 'Transform data', and 'Configure SSIS'. Each option has a brief description and an icon.

##### Step-3: after clicking on ingest follow these steps

The screenshot shows the 'Copy Data tool' wizard, step 1: 'Properties'. It asks to select a task type: 'Built-in copy task' (selected) or 'Metadata-driven copy task'. Under 'Task type', it says: 'You will get single pipeline to quickly copy objects from data source store to destination in a very intuitive manner.' Below that, it says: 'Task cadence or task schedule \*' with radio buttons for 'Run once now' (highlighted with a yellow box and red checkmark), 'Schedule', and 'Tumbling window'. At the bottom, there are 'Previous' and 'Next >' buttons.

## Step-4: give the data stores account location and required details for source data

## Step-5: give the data stores account location and required details for destination data

**Step-6:** the pipe lines are created and data is ready to transfer

The screenshot shows the Microsoft Azure Data Factory interface. On the left, a sidebar lists steps: Properties, Source, Target, Settings, Review and finish, Review, and Deployment. The main area displays a flow from 'Azure Blob Storage' to 'Azure Blob Storage'. A yellow box highlights the message 'Deployment complete'. Below it, a table shows deployment steps: 'Validating copy runtime environment' (Succeeded), 'Creating datasets' (Succeeded), 'Creating pipelines' (Succeeded), and 'Running pipelines' (Succeeded). A red arrow points from the 'Finish' button at the bottom to the 'Edit pipeline' button.

**Step-7:** the data is shared successfully from source to destination

The screenshot shows the Azure Storage Explorer interface. The left sidebar shows a 'Container' named 'destination'. The main area displays a table of blobs. A yellow box highlights the blob '1000\_Companies.txt' in the 'Name' column. The table includes columns for Name, Modified, Access tier, Archive status, Blob type, Size, and Lease state. The blob details show: Name - 1000\_Companies.txt, Modified - 6/8/2022, 5:43:01 PM, Access tier - Hot (Inferred), Archive status - Not yet archived, Blob type - Block blob, Size - 60.69 KB, Lease state - Available.

## 5. Explain the steps with screenshots how to create Virtual Network in Azure?

**Ans:**

**Step 1:** Login to Azure and click on Virtual Networks

The screenshot shows the Microsoft Azure portal home page. The search bar at the top contains the text 'vnet'. In the center, under the 'Services' section, the 'Virtual networks' service is highlighted with a red box. Other services listed include Network interfaces, Network Managers, Network Watcher, Kubernetes services, Mobile Networks, Network security groups, and Azure NetApp Files.

**Step 2:** Click on create to create a virtual network.

The screenshot shows two pages from the Microsoft Azure portal. The top part is the 'Virtual networks' page, where a 'Create' button is highlighted with a yellow box. The bottom part is the 'Create virtual network' wizard, which has passed validation. The 'Review + create' tab is selected. The configuration details are as follows:

**Basics**

- Subscription: Azure-DXC262AB12Lab
- Resource group: dxcrg2317
- Name: dxcvnet23176
- Region: East US

**IP addresses**

- Address space: 10.0.0.0/16
- Subnet: default (10.0.0.0/24)

**Tags**

- None

**Security**

- BastionHost: Disabled
- DDoS protection plan: Basic
- Firewall: Disabled

At the bottom, there are buttons for 'Create' (highlighted with a yellow box), '< Previous', 'Next >', and 'Download a template for automation'.

### Step 3: Deployment of virtual network.

The screenshot shows the Microsoft Azure portal's "Virtual Network" blade for a deployment named "Microsoft.VirtualNetwork-20220608122303". A prominent green checkmark indicates "Your deployment is complete". Deployment details include the name, subscription ("Azure-DXC262AB12Lab"), resource group ("dxcrg2317"), start time (6/8/2022, 12:29:06 PM), and correlation ID (a208bca0-45ec-4bbd-b445-e8ffb62ea2d8). Below the main message are sections for "Deployment details" (with a download link) and "Next steps" (with a "Go to resource" button).

## 6. Explain the steps with screenshots how to create azure synapse analytics?

Ans:

### Step-1:

The screenshot shows the Microsoft Azure search results page with the query "synapse" highlighted in the search bar. The search results are categorized under "Services" and "Marketplace". Under "Services", the "Azure Synapse Analytics" service is listed and highlighted with a yellow box and a blue arrow pointing to it. Other services like "Incorta Intelligent Ingest for Azure Synapse" and "Moyo Azure Synapse Retail Recommender Solution" are also listed. Under "Marketplace", there are two items: "Azure Synapse Analytics (private link hubs)" and "Xpert BI with Azure Synapse".

### Step-2:

The screenshot shows the Microsoft Azure "Create" blade for "Azure Synapse Analytics". The top navigation bar includes "Home > Azure Synapse Analytics" and a "Create" button highlighted with a yellow box and a blue arrow. The blade features a search bar, filter options for "Subscription", "Resource group", and "Location", and a "Manage view" dropdown. A note at the bottom states: "Synapse Analytics is a fully-managed service to build modern data warehouses for enterprises. Synapse Analytics brings together SQL, Apache Spark, and machine learning into a single workspace, dramatically reducing development time and operational overhead." Below this note, a large "No Azure Synapse Analytics to display" message is shown, accompanied by a hexagonal icon.

## Step-3:

The screenshot shows the 'Create Synapse workspace' wizard on the 'Project details' step. It includes fields for Subscription (selected: 'Azure DXC262AB12Lab'), Resource group (selected: 'dxcrg2317'), and Managed resource group (input field: 'Enter managed resource group name'). Below this, the 'Workspace details' section is shown with fields for Workspace name ('dxcsynapse231'), Region ('East US'), and Data Lake Storage Gen2 selection ('From subscription'). The 'File system name' dropdown shows '(New) filesystem213'. Navigation buttons at the bottom include 'Review + create', '< Previous', and 'Next: Security >'.

## Step-4:

The screenshot shows the 'Create Synapse workspace' wizard on the 'Security' step. It includes tabs for 'Basics' (selected), 'Security' (underlined), 'Networking', 'Tags', and 'Review + create'. Under 'Authentication', it shows 'Use both local and Azure Active Directory (Azure AD) authentication' selected. Fields for 'SQL Server admin login' ('sqladminuser'), 'SQL Password' (redacted), and 'Confirm password' (redacted) are present. Under 'System assigned managed identity permission', it says 'Select to grant the workspace network access to the Data Lake Storage Gen2 account using the workspace system identity.' A note states 'The selected Data Lake Storage Gen2 account does not restrict network access using any network access rules, or you selected a storage account manually via URL under Basics tab.' Navigation buttons at the bottom include 'Review + create', '< Previous', and 'Next: Networking >'.

## Step-5:

The screenshot shows the Microsoft Azure Synapse Analytics Overview page for a deployment named "Microsoft.Azure.SynapseAnalytics-20220608153006". The main message is "Your deployment is complete". Deployment details include a deployment name, subscription, and resource group. A "Go to resource group" button is highlighted.

## Step-6: the synapse creation is done

The screenshot shows the Microsoft Azure Synapse workspace overview for "dxcsynapse23178". It displays various workspace settings and configurations, including resource group, status, location, and networking details. It also includes sections for getting started with Synapse Studio and reading documentation.

## 7. Explain the steps with screenshots how to create an Azure storage account?

Ans:

### Step-1 :

The screenshot shows the Microsoft Azure portal homepage. The "Storage accounts" service is highlighted with a red arrow. Other services like "Storage browser (preview)" and "Storage Explorer" are also visible.

## Step-2:

Home > Storage accounts >  
**Create a storage account** ...

Basics Advanced Networking Data protection Encryption Tags Review + create

Tables. The cost of your storage account depends on the usage and the options you choose below. [Learn more about Azure storage accounts](#)

**Project details**

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.

Subscription: Azure-DXC262AB12Lab

Resource group: dxcorgsa231  
[Create new](#)

**Instance details**

If you need to create a legacy storage account type, please click [here](#).

Storage account name: dxcorgsa231

Region: (US) East US

Performance: Standard: Recommended for most scenarios (general-purpose v2 account)  
Premium: Recommended for scenarios that require low latency.

Redundancy: Geo-redundant storage (GRS)  
 Make read access to data available in the event of regional unavailability.

[Review + create](#) [Next : Advanced >](#)



## Step-3:

Microsoft Azure

Home > Storage accounts >  
**Create a storage account** ...

Validation passed

Basics Advanced Networking Data protection Encryption Tags Review + create

**Basics**

Subscription	Azure-DXC262AB12Lab
Resource Group	dxcorgsa231
Location	eastus
Storage account name	dxcorgsa231
Deployment model	Resource manager
Performance	Standard
Replication	Read-access geo-redundant storage (RA-GRS)

**Advanced**

Secure transfer	Enabled
Allow storage account key access	Enabled
Allow cross-tenant replication	Enabled
Default to Azure Active Directory authorization in the Azure portal	Disabled
Blob public access	Enabled
Minimum TLS version	Version 1.2
Enable hierarchical namespace	Disabled
Enable network file system v3	Disabled
Access tier	Hot
Enable SFTP (preview)	Disabled
Large file shares	Disabled

**Networking**

Network connectivity	Public endpoint (all networks)
----------------------	--------------------------------

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



## Step-4:

The screenshot shows the Microsoft Azure Deployment Overview page for a resource group named 'dxcorgsa231\_1654686555341'. A yellow box highlights the status bar at the top right, which reads 'Deployment in progress... Deployment to resource group 'dxcorg231' is in progress.' Below this, a message says 'We'd love your feedback! →'. A yellow box highlights the 'Deployment is in progress' section, which displays the deployment name, subscription, and resource group information. A red arrow points to the 'Deployment details (Download)' link. The main table shows 'No results.'

## Step-5: The storage Account is created successfully.

The screenshot shows the Microsoft Azure Deployment Overview page for the same resource group. A yellow box highlights the message 'Your deployment is complete' with a green checkmark. A red arrow points to the 'Go to resource' button under the 'Next steps' section. The status bar at the top right now shows 'MANIPAL PRO LEARN (MANIPAL...)'. The main table shows 'No results.'

## 8. Explain the steps with screenshots how to create and upload data into Azure Blobs ?

**Ans:** After creating the storage account the following steps should be followed

### Step-1 :

The screenshot shows the Microsoft Azure Storage Account Containers page for the 'dxcorgsa231' storage account. A red arrow points to the 'Containers' link in the left sidebar under the 'Data storage' section. Another red arrow points to the '+ Container' button at the top right. The main area shows a search bar and a table with one row labeled '\$logs'. The left sidebar also includes links for Overview, Activity log, Tags, Diagnose and solve problems, Access Control (IAM), Data migration, Events, Storage browser (preview), File shares, Queues, and Tables.

## Step-2: Create a container and name it.

The screenshot shows the Azure Storage Explorer interface. On the left, there's a list of containers with one named 'Logs'. On the right, a 'New container' dialog box is open. The 'Name' field is filled with 'aditya'. Under 'Public access level', 'Blob (anonymous read access for blobs only)' is selected. At the bottom, there are 'Create' and 'Discard' buttons, with a red checkmark next to 'Create'.

## Step-3: The blob will be created and to upload the data into it follow the steps.

The screenshot shows the 'aditya' container details page. It includes a search bar, navigation links like Overview, Diagnose and solve problems, and Access Control (IAM), and a Settings section with Shared access tokens. On the right, there's a list of blobs with a 'Name' column. The 'Upload' button is highlighted with a red arrow. Below it, the 'Authentication method' is set to 'Access key' and the 'Location' is 'aditya'. There's also a 'Search blobs by prefix (case-sensitive)' input field and an 'Add filter' button.

## Step-4: upload the file by browsing from the file explorer

The screenshot shows the 'Upload blob' dialog for the 'aditya/' container. It has an 'Files' input field containing '1000\_Companies.csv', a checkbox for 'Overwrite if files already exist', and an 'Upload' button. To the left, there's a sidebar with options like View snapshots, Create snapshot, Show d, status, Blob type, and Size. A red arrow points to the 'Upload' button.

## Step-5 : the data will be uploaded successfully.

The screenshot shows the 'aditya' container details page again. The blob list now includes '1000\_Companies.csv'. A red arrow points to this blob. A second red arrow points to a progress dialog box at the top right that says 'Upload completed for 1000\_Companies.csv'.

## 9. Explain the steps with screenshots how to create a connected SQL Database in Azure ?

Ans:

step-1: search for azure sql in the search bar.

The screenshot shows the Microsoft Azure portal interface. At the top, there's a search bar and a navigation bar with links like Home, Reservations, Manage view, Refresh, Export to CSV, Open query, Assign tags, and Delete. Below the navigation bar, there are filter options for Subscription, Resource group, and Location. The main content area has a heading 'Azure SQL' with a 'Create' button highlighted by a red arrow. It displays a message: 'No Azure SQL resources to display. Try changing or clearing your filters.' with a 'Create Azure SQL resource' button.

Step-2:after click on create follow the steps

The screenshot shows the 'Create SQL Database Server' configuration page. The URL is 'Home > SQL databases > Create SQL Database > Create SQL Database Server'. The page title is 'Create SQL Database Server'. It asks for required settings like server name ('dxcsv1') and location ('(US) East US'). Under 'Authentication', 'Use SQL authentication' is selected. The 'Server admin login' is set to 'azueruser' and the 'Password' and 'Confirm password' fields are filled. The 'OK' button at the bottom is highlighted with a red arrow.

## Step-3:

Home > SQL databases >

### Create SQL Database

Microsoft

Server \*

Want to use SQL elastic pool?  Yes  No

Compute + storage \*

Backup storage redundancy  Locally-redundant backup storage  
 Zone-redundant backup storage  
 Geo-redundant backup storage

**⚠ Selected value for backup storage redundancy is Geo-redundant backup storage. Database backups will be geo-replicated which might impact your data residency requirements. [Learn more](#)**

## Step-4:

Home > SQL databases >

### Create SQL Database

Microsoft

Basics Networking Security Additional settings Tags

**Product details**  
SQL database by Microsoft   
[Terms of use](#) | [Privacy policy](#)

**Estimated cost per month**  
---  
[View pricing details](#)

**Terms**  
By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) auth my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the additional details see [Azure Marketplace Terms](#).

**Basics**

Subscription	Azure-DXC262AB12Lab
Resource group	dxc231
Region	East US
Database name	dxcdb231
Server	(new) dxcsv1
Authentication method	SQL authentication
Server admin login	azueruser

## Step-5:

The screenshot shows the Azure portal's 'Deployment' blade for a resource group named 'Microsoft.SQLDatabase.newDatabaseNewServer\_f31c06e2541a4b4e9323a'. A large yellow progress bar at the top indicates 'Deployment is in progress'. Below it, deployment details are listed:

Resource	Type	Status	Operation details
sqlva6ko236hakqj7m	Microsoft.Storage/storageAccounts	OK	Operation details
sqlva6ko236hakqj7m	Microsoft.Storage/storageAccounts	OK	Operation details
dxcsv1	Microsoft.Sql/servers	Accepted	Operation details

## Step-6:

The screenshot shows the Azure portal's 'Query editor (preview)' blade for a database named 'dxcdb231'. A success message 'Successfully updated server firewall rules' is displayed. The SQL authentication section shows a login 'azuseruser' and a password. A note about firewall rules is present, and the 'OK' button is highlighted with a red arrow.

**Step-7:** login with the credentials and allow firewall to allow the changes and click on ok the sql database is available now

The screenshot shows the Azure portal's 'Query editor (preview)' blade for a database named 'dxcdb231'. The left sidebar shows the database structure with tables, views, and stored procedures. The right pane shows a query editor with a single digit '1' entered. A success message 'Ready' is at the bottom.

## 10. Explain the steps with screenshots how to insert data into an azure SQL database ?

**Ans:** To enter the data into the database we have to follow the steps mentioned below

**Step-1:** search for Azure sql databases and select the AZURE SQL databases from the search results

A screenshot of the Microsoft Azure portal search interface. The search bar at the top contains the text "sql databases". Below the search bar, there are several filter buttons: All, Services (22), Marketplace (7), Documentation (27), Resources (0), and Resource Groups (0). The "All" button is highlighted. A red checkmark points to the "SQL databases" link in the search results list. Other results include "Azure Database for MySQL flexible servers", "Azure SQL", "Reservations", "SQL Server stretch databases", and "Azure Database for PostgreSQL flexible servers".

**Step-2 :** after selecting the Sql databases. Click on create button as shown below

A screenshot of the Microsoft Azure SQL databases management page. The title bar says "Microsoft Azure" and "Search resources, services, and". Below the title, there's a breadcrumb navigation: "Home > SQL databases". The main heading is "SQL databases" with a yellow background. Below it, the text "Manipal Pro Learn (manipalazure.onmicrosoft.com)" is displayed. There are several buttons: "+ Create" (highlighted with a red checkmark), "Reservations", "Manage view", "Refresh", and "Export to CS". Below these buttons are filters: "Filter for any field...", "Subscription == all", and "Resource group == all".

**Step-3:** select all options as mentioned below

A screenshot of the "Create SQL Database" wizard in the Microsoft Azure portal. The top navigation bar shows "Create portal menu" and "Create SQL Database". The main area has several tabs: "Basic" (selected), "Networking", "Security", "Additional settings", "Tags", and "Review + create". A note at the top says "Did you know that new users in Azure can create a free Azure SQL Database and use it for 12 months using Azure free account? Learn more".  
The "Project details" section shows "Subscription" set to "Azure-DXC2020S12Lab" and "Resource group" set to "dxc2020s12".  
The "Database details" section includes "Database name" (set to "dxc2020s12"), "Server" (set to "dxc2020s12"), and "Want to use SQL elastic pool?" (radio button set to "No").  
The "Compute + storage" section shows "General Purpose" selected for "Service tier" and "Compute Units" set to "100".  
The "Backup storage redundancy" section shows "Standard" selected for "Redundancy".  
At the bottom, there are "Previous", "Next: Networking", and "Create" buttons.

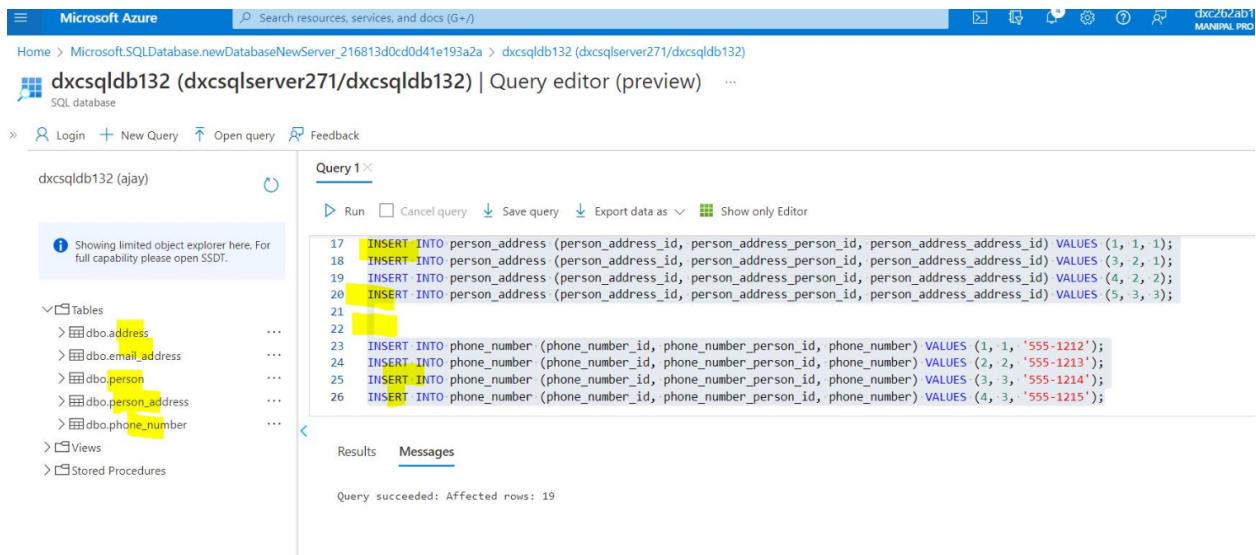
**Step-4:** after completing this step navigate to the next menus without changing any settings and click on create

**Step-5:** after clicking on create it takes some time to deploy after that we can access the Database and click on query editor

**Step-6:** login with your login credentials



## Step-7: insert the data by using the traditional SQL methods.



The screenshot shows the Microsoft Azure portal interface for a SQL database named 'dxcsqlldb132'. The top navigation bar includes 'Microsoft Azure', a search bar, and various icons. The main content area displays a 'Query editor (preview)' window titled 'Query 1'. The query pane contains the following SQL code:

```
17 INSERT INTO person_address (person_address_id, person_address_person_id, person_address_address_id) VALUES (1, 1, 1);
18 INSERT INTO person_address (person_address_id, person_address_person_id, person_address_address_id) VALUES (3, 2, 1);
19 INSERT INTO person_address (person_address_id, person_address_person_id, person_address_address_id) VALUES (4, 2, 2);
20 INSERT INTO person_address (person_address_id, person_address_person_id, person_address_address_id) VALUES (5, 3, 3);
21
22
23 INSERT INTO phone_number (phone_number_id, phone_number_person_id, phone_number) VALUES (1, 1, '555-1212');
24 INSERT INTO phone_number (phone_number_id, phone_number_person_id, phone_number) VALUES (2, 2, '555-1213');
25 INSERT INTO phone_number (phone_number_id, phone_number_person_id, phone_number) VALUES (3, 3, '555-1214');
26 INSERT INTO phone_number (phone_number_id, phone_number_person_id, phone_number) VALUES (4, 3, '555-1215');
```

The results pane shows the message 'Query succeeded: Affected rows: 19'.

