

NUTAN COLLEGE OF ENGINEERING & RESEARCH (NCER)
Department of Computer Science & Engineering (CSE)

Experiment No. 10

Title: Implementing and Using Sample Cloud Services with Microsoft Azure

Objective:

To implement and utilize sample cloud services provided by Microsoft Azure, exploring functionalities and capabilities within the Azure cloud platform.

Tools used:

- Microsoft Azure Portal

Prerequisite:

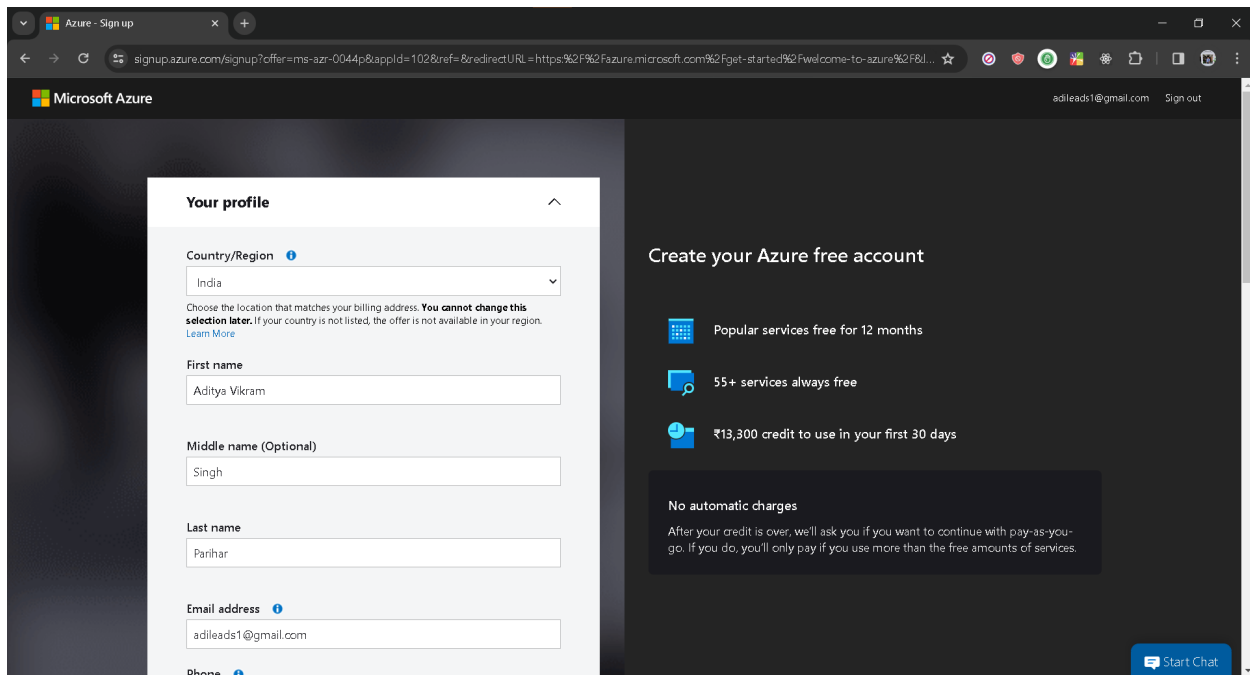
- An active Microsoft Azure account with necessary permissions and access
- Basic understanding of cloud computing concepts

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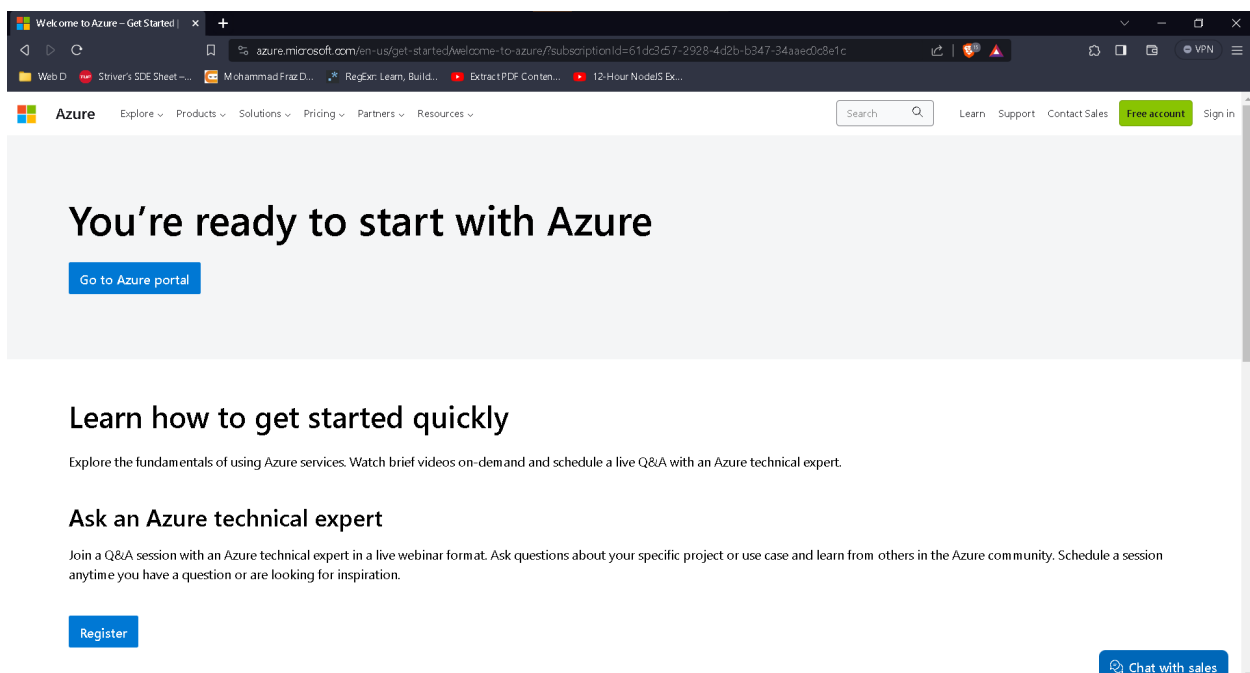
Steps:

Step 1. Access Azure Portal

- Log in to the Azure Portal using your Azure account credentials <https://azure.microsoft.com/en-in>



The screenshot shows the Azure Sign-up page. On the left, there is a 'Your profile' form with fields for Country/Region (India), First name (Aditya Vikram), Middle name (Optional) (Singh), Last name (Panihar), Email address (adileads1@gmail.com), and Phone. On the right, there is a 'Create your Azure free account' section with bullet points: 'Popular services free for 12 months', '55+ services always free', and '₹13,300 credit to use in your first 30 days'. Below these, it states 'No automatic charges' and explains that after the credit is over, users will be asked if they want to continue with pay-as-you-go. A 'Start Chat' button is at the bottom right.



The screenshot shows the 'Welcome to Azure - Get Started' page. The header includes the Azure logo and navigation links: Explore, Products, Solutions, Pricing, Partners, Resources. A search bar and links for Learn, Support, Contact Sales, Free account, and Sign in are also present. The main content area features a large heading 'You're ready to start with Azure' with a 'Go to Azure portal' button. Below this, there is a section 'Learn how to get started quickly' with a paragraph about exploring fundamentals and scheduling a Q&A session. Another section 'Ask an Azure technical expert' describes joining a Q&A session in a live webinar format. A 'Register' button is at the bottom left, and a 'Chat with sales' button is at the bottom right.

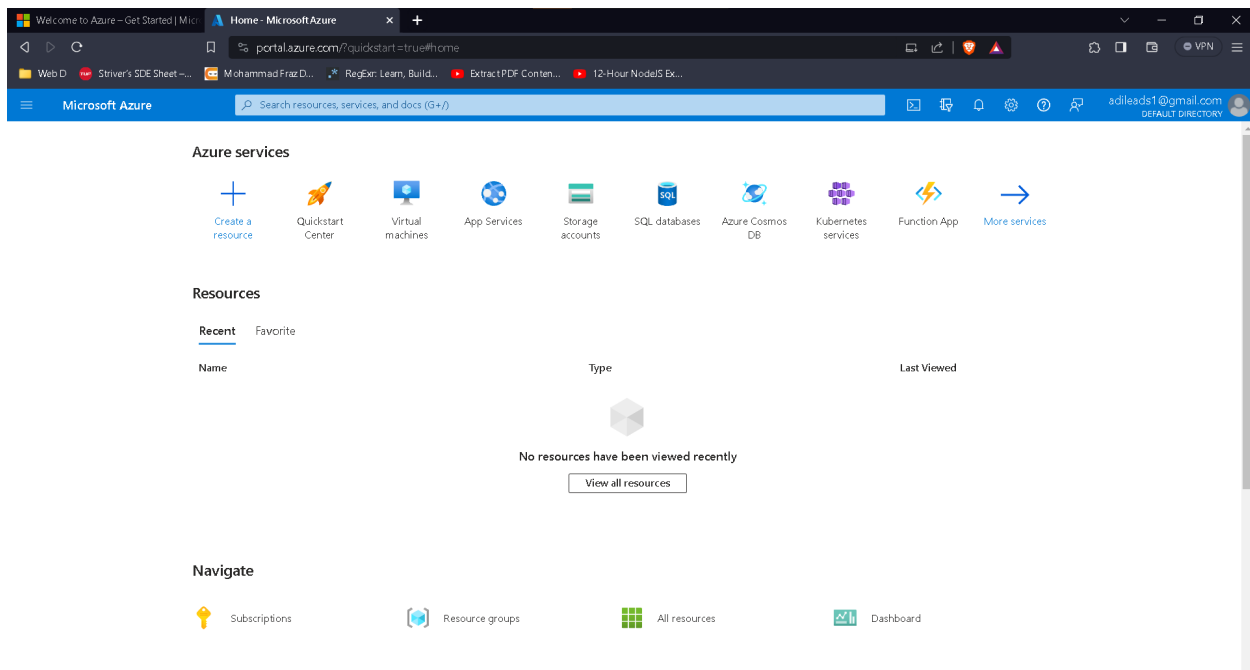
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Step 2. Explore Azure Services

- Navigate through the Azure Portal to discover various services offered.
- Identify sample cloud services such as Azure Virtual Machines, Azure Storage, Azure App Services, etc.

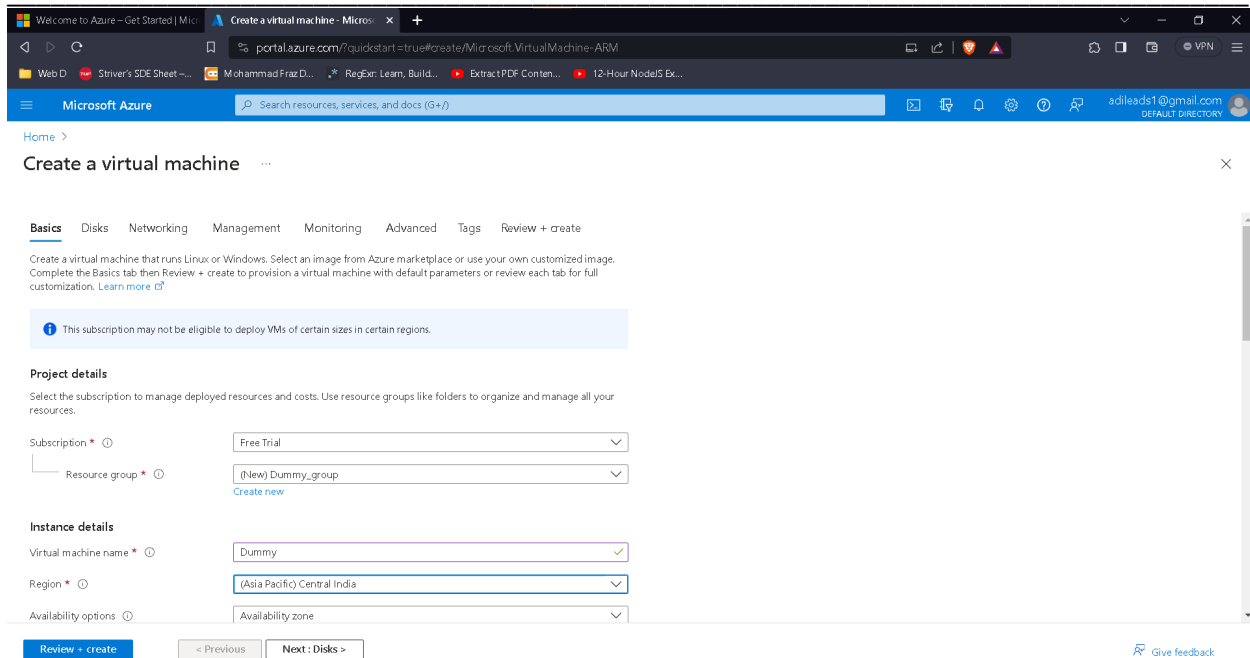
Step 3. Create and Deploy Sample Service

- Choose a sample service (e.g., Azure Virtual Machine).



- Follow the Azure interface to create and deploy the selected service.

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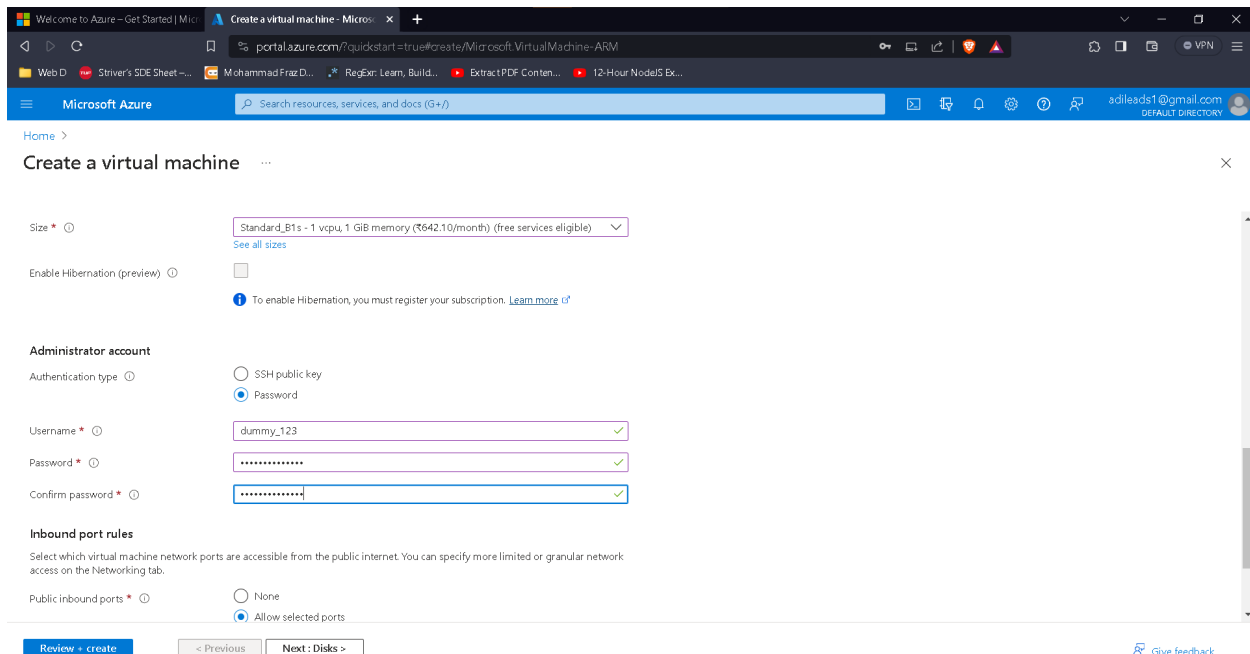


The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Basics' tab is selected. The page includes a navigation bar with tabs: Basics, Disks, Networking, Management, Monitoring, Advanced, Tags, and Review + create. A message states: 'This subscription may not be eligible to deploy VMs of certain sizes in certain regions.' The 'Project details' section shows 'Subscription' as 'Free Trial' and 'Resource group' as '(New) Dummy_group'. The 'Instance details' section shows 'Virtual machine name' as 'Dummy', 'Region' as '(Asia Pacific) Central India', and 'Availability options' as 'Availability zone'. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Disks >'. A 'Give feedback' link is also present.

- Configure settings as required during the creation process.

Step 4. Utilize the Service

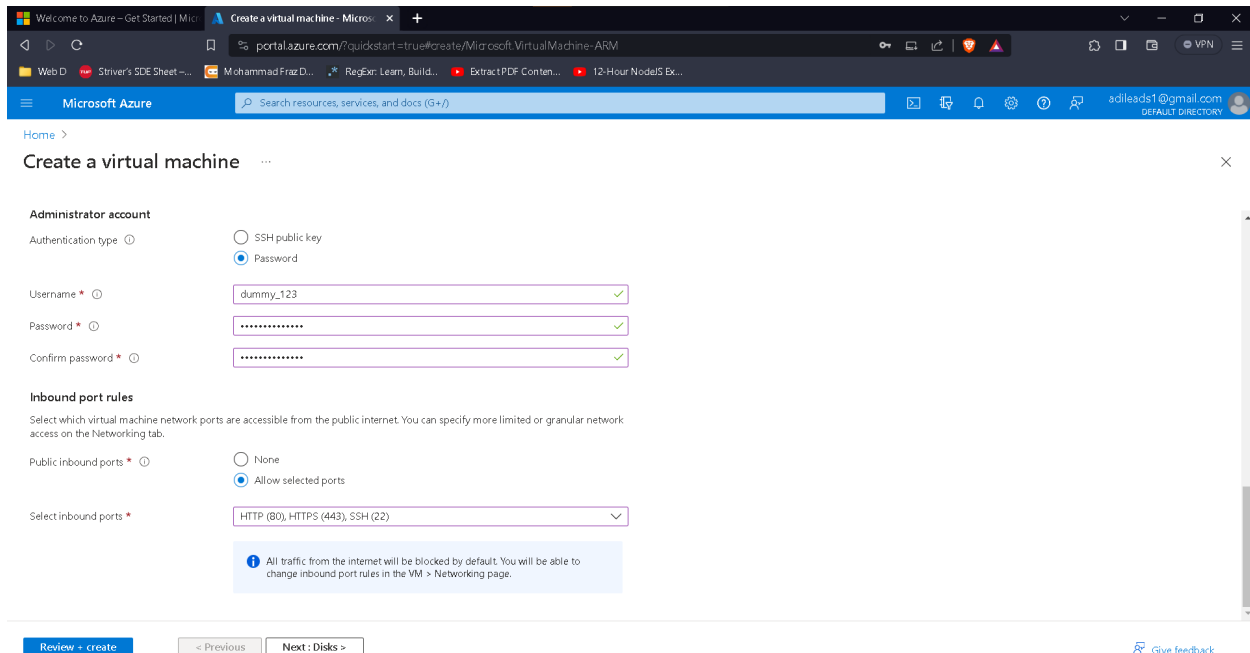
- Access and interact with the deployed service to understand its functionalities.



The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, continuing from the previous step. The 'Inbound port rules' section is visible. It shows 'Size' as 'Standard_B1s - 1 vcpu, 1 GiB memory (₹642.10/month) (free services eligible)'. Under 'Administrator account', 'Authentication type' is set to 'Password'. The 'Username' is 'dummy_123', and the 'Password' and 'Confirm password' fields are filled with masked characters. The 'Inbound port rules' section has a message: 'Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.' The 'Public inbound ports' are set to 'Allow selected ports'. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Disks >'. A 'Give feedback' link is also present.

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- Experiment with features like scalability, management, and monitoring provided by Azure.



Microsoft Azure

Create a virtual machine

Administrator account

Authentication type

☐ SSH public key

☒ Password

Username *

dummy_123

Password *

Confirm password *

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports *

☐ None

☒ Allow selected ports

Select inbound ports *

HTTP (80), HTTPS (443), SSH (22)

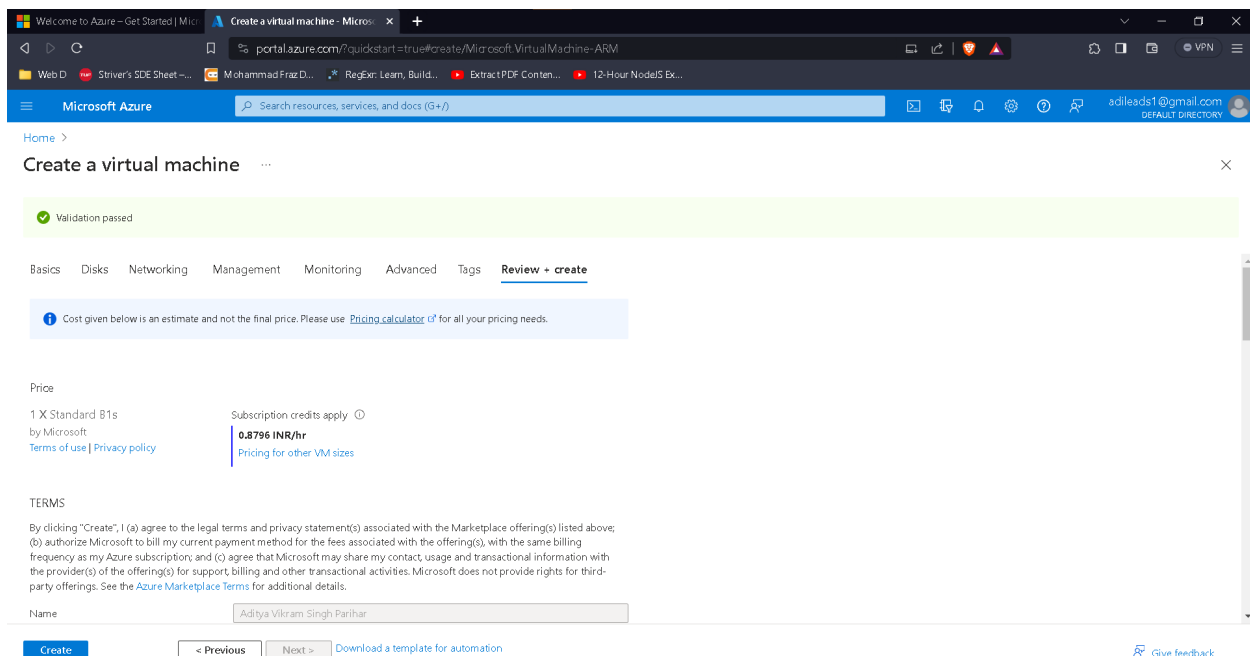
All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create

Previous

Next: Disks

Give feedback



Microsoft Azure

Create a virtual machine

Validation passed

Basics Disks Networking Management Monitoring Advanced Tags Review + create

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

Price

1 X Standard B1s

by Microsoft

[Terms of use](#) | [Privacy policy](#)

Subscription credits apply

0.8796 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.

Name

Aditya Vikram Singh Parihar

Create

Previous

Next

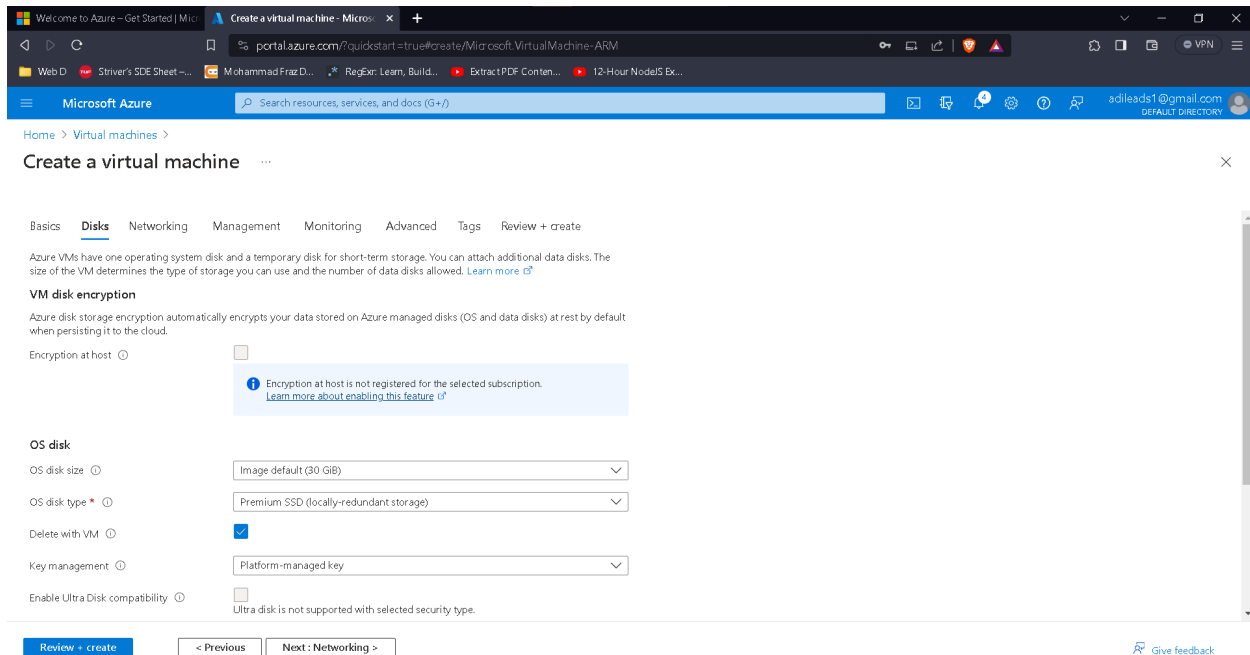
[Download a template for automation](#)

Give feedback

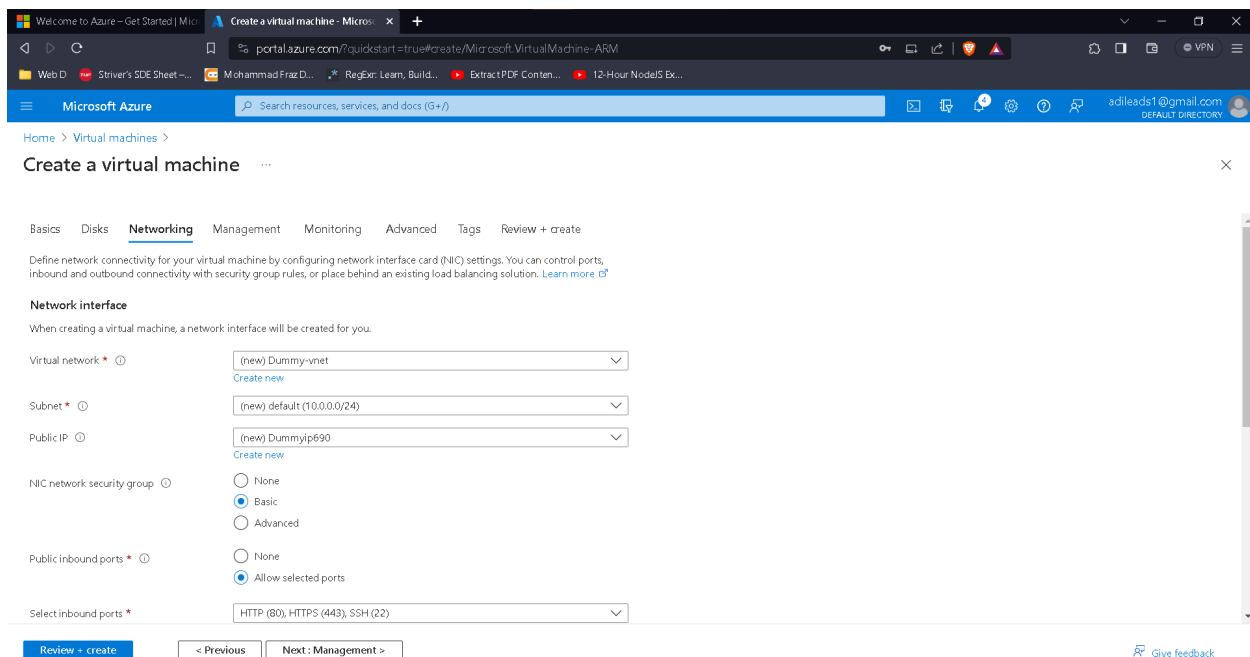
Step 5. Explore Integration

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- Investigate how different Azure services can be integrated to create comprehensive cloud solutions.

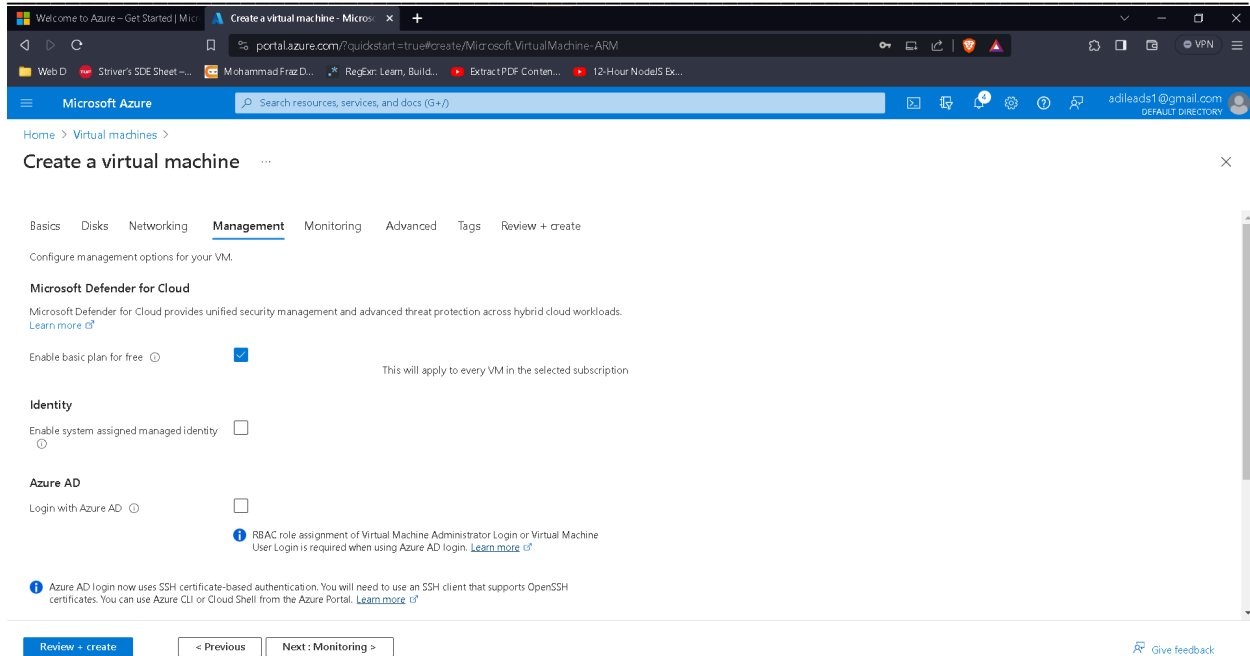


Microsoft Azure portal interface showing the 'Create a virtual machine' page, specifically the 'Disks' tab. The page includes tabs for Basics, Disks, Networking, Management, Monitoring, Advanced, Tags, and Review + create. The 'Disks' tab is active, displaying information about VM disk encryption and OS disk configuration. The 'OS disk' section shows a size of 30 GiB, type of Premium SSD (locally-redundant storage), and a checked option for 'Delete with VM'. The 'Key management' section shows 'Platform-managed key'. The 'Enable Ultra Disk compatibility' option is unchecked, with a note that Ultra disk is not supported with the selected security type. Navigation buttons include 'Review + create', '< Previous', and 'Next: Networking >'. A 'Give feedback' link is also present.



Microsoft Azure portal interface showing the 'Create a virtual machine' page, specifically the 'Networking' tab. The page includes tabs for Basics, Disks, Networking, Management, Monitoring, Advanced, Tags, and Review + create. The 'Networking' tab is active, displaying information about network interface configuration. The 'Network interface' section shows a 'Virtual network' of '(new) Dummy-vnet', a 'Subnet' of '(new) default (10.0.0.0/24)', and a 'Public IP' of '(new) Dummyip690'. The 'NIC network security group' is set to 'Basic', and 'Public inbound ports' are set to 'Allow selected ports'. The 'Select inbound ports' dropdown shows 'HTTP (80), HTTPS (443), SSH (22)'. Navigation buttons include 'Review + create', '< Previous', and 'Next: Management >'. A 'Give feedback' link is also present.

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Microsoft Azure portal interface showing the 'Create a virtual machine' page, Management tab. The page displays configuration options for a new VM, including Microsoft Defender for Cloud, Identity, and Azure AD login settings. The 'Enable basic plan for free' checkbox is checked. The 'Review + create' button is visible at the bottom.

Home > Virtual machines > Create a virtual machine

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

Configure management options for your VM.

Microsoft Defender for Cloud
Microsoft Defender for Cloud provides unified security management and advanced threat protection across hybrid cloud workloads. [Learn more](#)

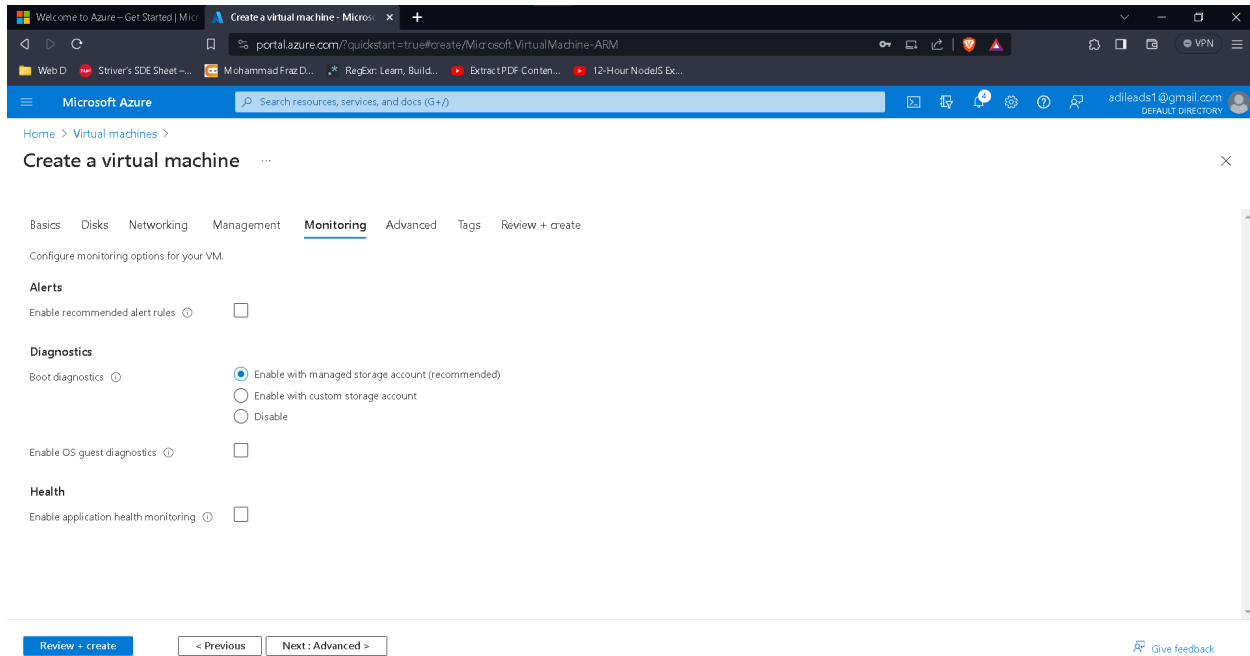
Enable basic plan for free ☒ This will apply to every VM in the selected subscription

Identity
Enable system assigned managed identity ☐

Azure AD
Login with Azure AD ☐
RBAC role assignment of Virtual Machine Administrator Login or Virtual Machine User Login is required when using Azure AD login. [Learn more](#)

Azure AD login now uses SSH certificate-based authentication. You will need to use an SSH client that supports OpenSSH certificates. You can use Azure CLI or Cloud Shell from the Azure Portal. [Learn more](#)

[Review + create](#) < Previous Next: Monitoring > [Give feedback](#)



Microsoft Azure portal interface showing the 'Create a virtual machine' page, Monitoring tab. The page displays configuration options for monitoring, including Alerts, Diagnostics, and Health. The 'Enable with managed storage account (recommended)' option is selected under Diagnostics. The 'Review + create' button is visible at the bottom.

Home > Virtual machines > Create a virtual machine

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

Configure monitoring options for your VM.

Alerts
Enable recommended alert rules ☐

Diagnostics
Boot diagnostics ☒ Enable with managed storage account (recommended)
☐ Enable with custom storage account
☐ Disable
Enable OS guest diagnostics ☐

Health
Enable application health monitoring ☐

[Review + create](#) < Previous Next: Advanced > [Give feedback](#)

- Understand how Azure resources can interact with each other within the Azure environment.

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Step 6. Experiment and Learn

- Experimented with other sample services available in Azure to gain familiarity with the diverse capabilities of the platform.

Conclusion:

Successfully implemented and utilized sample cloud services within Microsoft Azure, gaining insights into the functionalities and capabilities offered by the Azure cloud platform.