

DEVOPS with MULTI-CLOUD

Practice Tasks

Institute Name : V Cube software solutions
Course : DevOps with Multi-Cloud
Batch : 30
Trainer : Krishna reddy sir

Prepared by : G.Bhavish
(MCD-AZ30-024)

TASK-2 : Virtual Network, Virtual Machine Creation & Nginx installation

Date : 21/01/26

Objective : The objective of this task is to create basic Azure infrastructure components such as a virtual network, subnet, and virtual machine, connect to the virtual machine using SSH, and install a web server for validation.

Virtual Network : The Azure Virtual Network (VNet) is a private, isolated network in Microsoft Azure that enables Azure resources to securely communicate with each other, the internet, and on-premises networks.

- Created a virtual network under the resource group rg01 with the one default subnet.

The screenshot shows the Microsoft Azure portal interface. The URL in the address bar is <https://portal.azure.com/#@gilakarababu@gmail.onmicrosoft.com/resource/subscriptions/24c251a0-1cbb-4a97-8576-0fd76172d25c/resourcegroups/RG01/providers/Microsoft.Network/virtualNetworks/VN01>. The page title is "VN01 - Virtual network". The left sidebar shows navigation options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Favorites, Subnets, Address space, Peering, Settings, and Monitoring. The main content area displays the "Essentials" section for the virtual network VN01, which includes details such as Resource group (RG01), Location (Central India), Subscription (Azure subscription 1), Subscription ID (24c251a0-1cbb-4a97-8576-0fd76172d25c), Address space (10.0.0.0/16), Subnets (1 subnet), DNS servers (Azure provided DNS service), BGP community string (Configure), and Virtual network ID (5fcf6c8d-6edd-4b29-a959-8678f670dd0a). There are also "Tags (edit)" and "Add tags" buttons at the bottom of the essentials section. A "JSON View" link is located in the top right corner of the main content area.

Virtual Machine : Azure Virtual Machine (VM) is a virtual computer that runs in the Microsoft Azure cloud. It lets you install an operating system and run applications just like a physical computer.

- Created a Virtual Machine vm01 with the Ubuntu Linux Operating System in virtual n/w vn01 under rg01, With allowing the port numbers 80(http) and 22(ssh)

The screenshot shows the Microsoft Azure portal interface for a virtual machine named 'VM01'. The left sidebar contains navigation links such as Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Favorites, Connect, Networking, Settings, and Availability + scale. The main content area displays the 'Essentials' section with details about the VM's configuration. Key information includes:

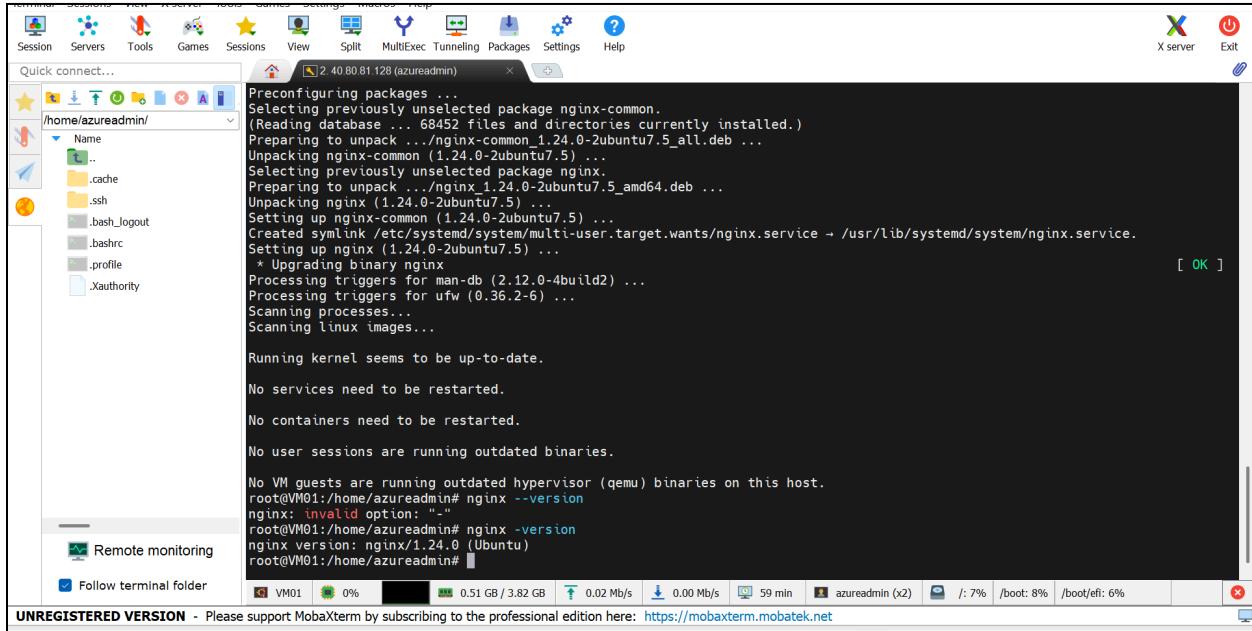
Resource group	Operating system
RG01	Linux (ubuntu 24.04)
Status	Size
Running	Standard D2v5 (2 vcpus, 4 GiB memory)
Location	Primary NIC public IP
Central India	40.80.81.128
Subscription	1 associated public IPs
Azure subscription 1	VN01/default
Subscription ID	DNS name
24c251a0-1ccb-4a97-8576-0fd76172d25c	Not configured
	Health state

fig(2)

Nginx Web Server : Nginx is used to host and serve web pages to users over the internet. This setup allows the virtual machine to function as a basic web server in the Azure cloud.

- Now using the mobaxterm, logged in to the virtual machine and installed the nginx web server.

- The fig(3) shows that the nginx is successfully installed in the virtual machine vm01.



The screenshot shows a terminal window in MobaXterm with the title '2.40.80.1128 (azureadmin)'. The terminal displays the following output:

```

Preconfiguring packages ...
Selecting previously unselected package nginx-common.
(Reading database ... 68452 files and directories currently installed.)
Preparing to unpack .../nginx-common_1.24.0-2ubuntu7.5_all.deb ...
Unpacking nginx-common (1.24.0-2ubuntu7.5) ...
Selecting previously unselected package nginx.
Preparing to unpack .../nginx_1.24.0-2ubuntu7.5_amd64.deb ...
Unpacking nginx (1.24.0-2ubuntu7.5) ...
Setting up nginx-common (1.24.0-2ubuntu7.5) ...
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/nginx.service.
Setting up nginx (1.24.0-2ubuntu7.5) ...
 * Upgrading binary nginx
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for ufw (0.36.2-6) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.

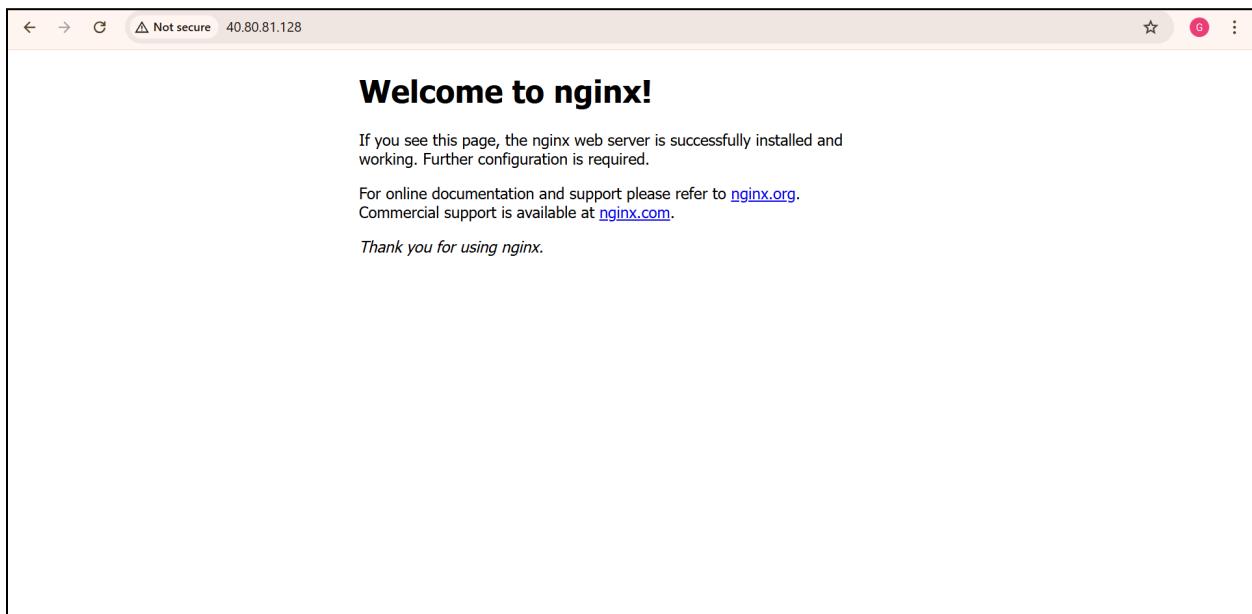
No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@VM01:/home/azureadmin# nginx --version
nginx: invalid option: "-"
root@VM01:/home/azureadmin# nginx -version
nginx version: nginx/1.24.0 (Ubuntu)
root@VM01:/home/azureadmin# [ OK ]

```

The terminal window includes a file browser sidebar on the left and a status bar at the bottom with information about the session and disk usage.

fig(3)

- To validate the installation we can check it by opening the virtual machine in the browser using its public ip address.



fig(4)