

Create an Azure Virtual machine in France central using of Ubuntu image and attach a data disk with VM. disk size should be 8Gb

LTIMindtree Favorites Folder Microsoft Azure Search resources, services, and docs (G+) Copilot Home > Virtual machines Create a virtual machine Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload Subscription * Pay-As-You-Go Resource group * (New) exam Create new Estimated monthly cost ₹7,333.44 / month View cost details Instance details Virtual machine name * VM-1 Region * (Europe) France Central Availability options Availability zone Zone options Self-selected zone Choose up to 3 availability zones, one VM per zone < Previous Next : Disks > Review + create Give feedback

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LTIMindtree Favorites Folder Microsoft Azure Search resources, services, and docs (G+) Copilot Home > Virtual machines Create a virtual machine Validation passed Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload Basics Disks Networking Management Monitoring Price 1 X Standard D2s v3 by Microsoft Subscription credits apply 9.3178 INR/hr Terms of use | Privacy policy Pricing for other VM sizes TERMS < Previous Next > Create 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 Estimated monthly cost ₹8,302.65 / month View cost details *** Initializing deployment... Initializing template deployment to resource group 'exam'. Download a template for automation Give feedback

Microsoft Azure | CreateVm-canonical.ubuntu-24_04-lts-server-20240927171935 | Overview

Deployment is in progress

Deployment name: CreateVm-canonical.ubuntu-24_04-lt... Start time: 9/27/2024, 5:24:21 PM
Subscription: Pay-As-You-Go Correlation ID: 2e26a813-3d3c-4205-a738-0d
Resource group: exam

Deployment details

Resource	Type	Status	Operation details
No results.			

Give feedback

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Microsoft Azure | CreateVm-canonical.ubuntu-24_04-lts-server-20240927171935 | Overview

Your deployment is complete

Deployment name: CreateVm-canonical.ubuntu-24_0... Start time: 9/27/2024, 5:24:21 PM
Subscription: Pay-As-You-Go Correlation ID: 2e26a813-3d3c-4205-a738-0d
Resource group: exam

Deployment details

Next steps

- Setup auto-shutdown Recommended
- Monitor VM health, performance and network dependencies Recommended
- Run a script inside the virtual machine Recommended

Go to resource Create another VM

Give feedback

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Microsoft Azure | CreateVm-canonical.ubuntu-24_04-lts-server-20240927171935 | Overview | VM-1

VM-1 | Disks

Virtual machine

dis

Refresh Additional settings Feedback Troubleshoot

Data disks

Filter by name

Showing 1 of 1 attached data disks

Create and attach a new disk Attach existing disks

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MiB/s)	Encryption
0	disk1	Premium SSD LRS	8	120	25	Platform-

Apply Discard changes

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Home > CreateVm-canonical.ubuntu-24_04-lts-server-20240927171935 | Overview > VM-1

VM-1 | Disks

Virtual machine

dis Refresh Additional settings Feedback Troubleshoot

Settings Disks Backup + disaster recovery Disaster recovery

Data disks

Filter by name Showing 1 of 1 attached data disks

+ Create and attach a new disk Attach existing disks

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MiB/s)	Encryption
0	disk1	Premium SSD LRS	8	120	25	SSE with PI

Apply Discard changes

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Home > VM-1

VM-1 | Connect

Virtual machine

Search Overview Activity log Access control (IAM) Tags Diagnose and solve problems Connect Connect Bastion Networking Settings Availability + scale

Just-in-time policy Unsupported by plan

Recommended

SSH using Azure CLI

Quickly connect in browser. Supports Microsoft Entra ID authentication. Private key not required.

Public IP address (20.199.14.221)

Select

Native SSH

Connect from your local machine (Windows)

Validating...

2 Open a local shell (on Windows)

Open Terminal (Windows 11), PowerShell (Windows 10 or less), or a shell of your choice. Or switch the local machine OS above to view more instructions.

3 Copy and execute SSH command

Provide a path to your SSH private key file on your local machine.

~/ssh/id_rsa.pem

Can't find your private key? [Reset your SSH private key](#)

SSH to VM with specified private key.

ssh -i ~/ssh/id_rsa.pem azureuser@20.199.14.221

Other Information

Using a Linux subsystem like WSL or Ubuntu on Terminal?

Copy your private key path to the Linux subsystem and ensure it has the correct read-only access.

Close Troubleshooting Give feedback

```
root@VM-1:~# 
0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

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.

azureuser@VM-1:~$ sudo su -
root@VM-1:~# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda    8:0     0   30G  0 disk
└─sda1  8:1     0   29G  0 part /
└─sda14 8:14    0   4M  0 part
└─sda15 8:15    0 106M  0 part /boot/efi
└─sda16 259:0   0  913M  0 part /boot
sdb    8:16    0   16G  0 disk
└─sdb1  8:17    0   16G  0 part /mnt
sdc    8:32    0   8G  0 disk
sr0   11:0     1  628K  0 rom
root@VM-1:~# 
```

```
ls history
root@VM-1:~# sudo mkdir /datadrive
root@VM-1:~# cd /datadrive
root@VM-1:/datadrive# sudo mount /dev/sdc /datadrive
mount: (hint) your fstab has been modified, but systemd still uses
      the old version; use 'systemctl daemon-reload' to reload.
root@VM-1:/datadrive# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda     8:0    0   30G  0 disk
└─sda1   8:1    0   29G  0 part /
  └─sda14  8:14   0    4M  0 part
  └─sda15  8:15   0  106M  0 part /boot/efi
  └─sda16 259:0   0  913M  0 part /boot
sdb     8:16   0   16G  0 disk
└─sdb1   8:17   0   16G  0 part /mnt
sdc     8:32   0    8G  0 disk /datadrive
sr0    11:0    1  628K  0 rom
root@VM-1:/datadrive# |
```

Create a VNET in EAST-US region and create a web subnet. Then provision a load balancer and expose Apache server on port number 80.

The screenshot shows the Microsoft Azure portal interface for creating a new virtual network. The top navigation bar includes 'Microsoft Azure', a search bar, 'Copilot', and user information ('srushtikhandade@gmail... DEFAULT DIRECTORY'). The main page title is 'Create virtual network'. The 'Basics' tab is selected. Under 'Subscription', 'Pay-As-You-Go' is chosen. Under 'Resource group', 'aks-test' is selected. The 'Instance details' section shows 'Virtual network name' as 'network-1' and 'Region' as '(US) East US'. At the bottom, there are 'Previous', 'Next', and 'Review + create' buttons, along with a 'Give feedback' link.

This screenshot shows the 'Review + create' step of the virtual network creation process. The 'Review + create' button is highlighted in blue. The 'Basics' tab is selected. The 'View automation template' link is visible. The 'Basics' section displays the configuration: Subscription (Pay-As-You-Go), Resource Group (aks-test), Name (network-1), and Region (East US). The 'Security' section is collapsed. At the bottom, there are 'Previous', 'Next', and 'Create' buttons, along with a 'Give feedback' link.

This screenshot shows the 'Overview' page for a deployment named 'network-1-1727440784426'. The deployment status is marked as 'Your deployment is complete'. Deployment details include: Deployment name: network-1-1727440784426, Subscription: Pay-As-You-Go, Start time: 9/27/2024, 6:09:51 PM, Correlation ID: bfa87c7b-0bbe-4333-91ee-a8e..., and Resource group: aks-test. Below this, there are sections for 'Deployment details' and 'Next steps', with a 'Go to resource' button. On the right side, there are promotional cards for 'Cost management', 'Microsoft Defender for Cloud', and 'Free Microsoft tutorials'. Navigation links like 'Home' and 'Search' are at the top left, and a 'Give feedback' link is at the bottom left.

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Home > Recent > network-1

Recent

Name ↑

- network-1
- aks-test
- azure1111
- azure-eks-test
- aks-cluster

Showing 1 - 5 of 5. Display 10 count:

Add a subnet

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. [Learn more](#)

Subnet purpose: Default

Name: sub-1

IPv4

Include an IPv4 address space:

IPv4 address range: 10.0.0.0/16
10.0.0.0 - 10.0.255.255

Starting address: 10.0.1.0

Size: /24 (256 addresses)

Subnet address range: 10.0.1.0 - 10.0.1.255

Add Cancel Give feedback

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Home > Recent > network-1

Recent

Name ↑

- network-1
- aks-test
- azure1111
- azure-eks-test
- aks-cluster

Showing 1 - 5 of 5. Display 10 count:

network-1 | Subnets

Virtual network

Subnet Gateway subnet Refresh Manage users Delete

Search subnets

Name	IPv4	IPv6	Available IPs	Delegated
default	10.0.0.0/24	-	251	-
sub-1	10.0.1.0/24	-	251	-

Give feedback

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Home > Load balancing

Load balancing | Load Balancer

Search Create Manage view Refresh Export to CSV Open query Assign tags

Overview Load Balancing Services Application Gateway Front Door and CDN profiles Load Balancer Traffic Manager

Filter for any field... Subscription equals all Resource group equals all Location equals all Add filter

Showing 1 to 1 of 1 records.

Name	Resource group	Location	Subscription
kubernetes	MC_aks-test_aks-cluster_eastus	East US	Pay-As-You-Go

< Previous Page 1 of 1 Next >

Give feedback

Microsoft Azure Search resources, services, and docs (G+) Copilot ? DEFAULT DIRECTORY

Home > Load balancing | Load Balancer >

Create load balancer

Project details

Subscription * Pay-As-You-Go

Resource group * aks-test Create new

Instance details

Name * balancer

Region * East US

SKU * Standard (Recommended) Gateway Basic (Retiring soon)

Type * Public

Review + create < Previous Next : Frontend IP configuration > Download a template for automation Give feedback

Home > Load balancing | Load Balancer >

Create load balancer

Instance details

Name * balancer

Region * East US

SKU * Standard (Recommended) Gateway Basic (Retiring soon)

Type * Public Internal

Tier * Regional Global

Review + create < Previous Next : Frontend IP configuration > Download a template for automation Give feedback

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Home > Load balancing | Load Balancer >

Create load balancer

Frontend IP configuration

A frontend IP configuration is an IP address used for inbound and/or outbound communication as defined within load balancers.

+ Add a frontend IP configuration

Name ↑	IP address
Add a frontend IP to get started	

Add frontend IP configuration

balancer

Name * fe-ip-1

IP version IPv4 IPv6

IP type IP address IP prefix

Public IP address * Select public IP address Create new

Gateway Load balancer None

Save Cancel Give feedback

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

Home > Load balancing | Load Balancer > Create load balancer ...

Basics Frontend IP configuration Backend pools Inbound rules Outbound rules Tags Review + create

A frontend IP configuration is an IP address used for inbound and/or outbound communication as defined within load balancers.

+ Add a frontend IP configuration

Name ↑	IP address
Add a frontend IP to get started	

Name fe-ip-1 IP version IPv4
IP type IP address
Public IP address (new) fe-ip Create new
Gateway Load balancer None

Save Cancel Give feedback

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

Home > Load balancing | Load Balancer > Create load balancer ...

Basics Frontend IP configuration Backend pools Inbound rules Outbound rules Tags Review + create

A frontend IP configuration is an IP address used for inbound and/or outbound communication as defined within load balancing, inbound NAT, and outbound rules.

+ Add a frontend IP configuration

Name ↑	IP address ↑
fe-ip-1	(new) fe-ip (To be created)

Review + create < Previous Next : Backend pools > Download a template for automation Give feedback

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

Home > Load balancing | Load Balancer > Create load balancer > Add backend pool ...

Name backend
Virtual network network-1 (aks-test)
Backend Pool Configuration NIC
IP address

IP addresses

You can only add resources IP address in the Virtual Network. The configuration is associated with the IP address and will apply to any resource which has this IP address assigned.

⚠ When a backend pool is configured by IP address, the backend instances are not secure by default and still use default outbound access. To secure your backend pool, please add a NAT Gateway to your subnet or leverage the private subnet parameter. [Learn more](#)

Backend Address Name	IP address	Resource Name

Save Cancel Give feedback

using of the Ansible configuration management tool install httpd package and start and make it enable of this service. and copy a fstab file in the /tmp folder on the remote server via Playbook.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-095819cdd29380297	SSH	TCP	22	Cus... ▾	<input type="text"/> 0.0.0.0/0 X
sgr-0cc8d7fba2e4e13d5	All ICMP - IPv4	ICMP	All	Cus... ▾	<input type="text"/> 0.0.0.0/0 X


```

Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\10748164\Downloads> ssh -i "git.pem" ec2-user@ec2-18-207-223-247.compute-1.amazonaws.com
The authenticity of host 'ec2-18-207-223-247.compute-1.amazonaws.com (18.207.223.247)' can't be established.
ED25519 key fingerprint is SHA256:j4BeM7IvF+ymPqRF17SiUjvSUKwDeVi7JIihh5C8QY.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-18-207-223-247.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

[ec2-user@ip-172-31-82-65 ~]$ sudo su -
[ec2-user@ip-172-31-82-65 ~]# ip a s
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enX0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc fq_codel state UP group default qlen 1000
    link/ether 12:f1:75:99:c8:4b brd ff:ff:ff:ff:ff:ff
    altname eni-0455875b22c7f9aca
    altname device-number-0.0

```

```
controller      node-1      + | - | v
link/ether 12:f1:75:99:c8:4b brd ff:ff:ff:ff:ff:ff
  altname eni-0455875b22c7f9aca
  altname device-number-0.0
inet 172.31.82.65/20 metric 512 brd 172.31.95.255 scope global dynamic enX0
  valid_lft 3470sec preferred_lft 3470sec
inet6 fe80::10f1:75ff:fe99:c84b/64 scope link
  valid_lft forever preferred_lft forever
[root@ip-172-31-82-65 ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:sxTAEP00kICKWU7/kjp0YGYZGroZfqNi9kCrTu7dZc root@ip-172-31-82-65.ec2.internal
The key's randomart image is:
+---[RSA 3072]---+
|.*+++.++.
|B+= o ...
|*.+o+ o o .
|o.++ + . +
| += . S
|.oo+o .
|...oo.E
|oo+...
|+B.o
+---[SHA256]---+
[root@ip-172-31-82-65 ~]# hostnamectl set-hostname controller.example.com
[root@ip-172-31-82-65 ~]# bash
[root@controller ~]# vim /etc/hosts
[1]+ Stopped vim /etc/hosts/
```

```
controller      node-1      + | - | v
[1]+ Stopped vim /etc/hosts/
[root@controller ~]#
[1]+ Stopped vim /etc/hosts/
[root@controller ~]# vim /etc/hosts
[root@controller ~]# "/etc/hosts" 4L, 167B written
[root@controller ~]# vim /etc/hosts
[root@controller ~]#
[root@controller ~]# vim /etc/ssh/sshd_config
[root@controller ~]# ping 172.31.88.222
PING 172.31.88.222 (172.31.88.222) 56(84) bytes of data.
^C
--- 172.31.88.222 ping statistics ---
25 packets transmitted, 0 received, 100% packet loss, time 24992ms

[root@controller ~]# ping 172.31.88.222
PING 172.31.88.222 (172.31.88.222) 56(84) bytes of data.
64 bytes from 172.31.88.222: icmp_seq=1 ttl=127 time=1.44 ms
64 bytes from 172.31.88.222: icmp_seq=2 ttl=127 time=0.493 ms
64 bytes from 172.31.88.222: icmp_seq=3 ttl=127 time=0.719 ms
64 bytes from 172.31.88.222: icmp_seq=4 ttl=127 time=0.953 ms
172.31.88.22264 bytes from 172.31.88.222: icmp_seq=5 ttl=127 time=0.656 ms
64 bytes from 172.31.88.222: icmp_seq=6 ttl=127 time=0.672 ms
^C
--- 172.31.88.222 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5153ms
rtt min/avg/max/mdev = 0.493/0.822/1.440/0.307 ms
[root@controller ~]# yum install ansible* -y
Last metadata expiration check: 0:16:43 ago on Fri Sep 27 14:46:31 2024.
Dependencies resolved.
=====
Package           Architecture      Version       Repository      Size
=====
```

```
controller node-1

ansible-8.3.0-1.amzn2023.0.1.noarch
ansible-packaging-1-11.amzn2023.0.1.noarch
ansible-srpm-macros-1-11.amzn2023.0.1.noarch
git-core-2.40.1-1.amzn2023.0.3.x86_64
python3-execnet-1.7.1-5.amzn2023.0.2.noarch
python3-packaging-21.3-2.amzn2023.0.2.noarch
python3-py-1.10.0-2.amzn2023.0.2.noarch
python3-pytest-6.2.2-1.amzn2023.0.3.noarch
python3-pytest-mock-3.5.1-2.amzn2023.0.2.noarch
python3-toml-0.10.2-2.amzn2023.0.2.noarch
ansible-core-2.15.3-1.amzn2023.0.4.x86_64
ansible-packaging-tests-1-11.amzn2023.0.1.noarch
ansible-test-2.15.3-1.amzn2023.0.4.x86_64
python3-apipkg-1.5-12.amzn2023.0.2.noarch
python3-iniconfig-1.1.1-2.amzn2023.0.2.noarch
python3-pluggy-0.13.1-3.amzn2023.0.2.noarch
python3-pyparsing-2.4.7-6.amzn2023.0.2.noarch
python3-pytest-forked-1.3.0-2.amzn2023.0.2.noarch
python3-pytest-xdist-2.2.0-2.amzn2023.0.2.noarch
sshpasst-1.09-6.amzn2023.0.1.x86_64

Complete!
[root@controller ~]# cd /etc/ansible
[root@controller ansible]# vim ansible.cfg
[root@controller ansible]# vim playbook.yml
[root@controller ansible]# [New] 22L, 419B written
[root@controller ansible]# ansible-playbook playbook.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Install and configure HTTPD and copy fstab file] ****
skipping: no hosts matched

PLAY RECAP ****

[root@controller ansible]# vim hosts
[root@controller ansible]# "hosts" [New] 4L, 54B written
[root@controller ansible]# ansible-playbook playbook.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details

PLAY [Install and configure HTTPD and copy fstab file] ****
TASK [Gathering Facts] ****
```

```
[root@controller ~]# cd .ssh
[root@controller .ssh]# cd
[root@controller ~]# cd .ssh
[root@controller .ssh]# cat authorized_keys
no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \"ec2-user\" rather than the user \"root\"';echo;sleep 10;exit 142" ssh AAAAB3NzaC1yc2EAAAQABAAgQDQuTsazazuCxieR8pAs1+GmBamNe55r4w60eqrnOsL7yWGA7qh=4nVfIKB34m9MbILYLUkbrsRILrZkPjmGt7jgA7R1Vs/SZ
h9e9IOUpw6GWZj1VtI1j+8NlujydXp7sevKD+0A9ERLyLwKwSwkCPBe1CBf0hg+wL00JIKS79QgFgbTfRyaY+pdVqgTvA5Y9WlQm0EG04ihov43M2tG
QXECN1mpwiRxhmpbTF2F2j4a1lwGr6xEUNI03lbibg00VygDzAuMnaixGixqWaxXmb3TG409gd69eTfNbGx+C0ZKpvwUNsksBrvPm4zuXkAbm0w-TT1z081rlZlkjb9hRl
tkQkTzLD/Gg1jqfnqdif3lis3fQqbWtNAppTmxrrWnfZRjnYQVa9w+pgcrQT21beuA4v/+1TEGUsoIl7xFLXYbIcT47A4L+t4ksCaFYDD/cS3zkFpTsQwRNdFG3aF/Va9M
83yfuhRLD3Id9q9eHc= root@ip-172-31-82-65.ec2.internal
[root@controller ~]# vim authorized_keys
[root@controller ~]# 3L, 1140B written
[root@controller ~]# cd
[root@controller ~]# cd /etc/ansible
[root@controller ansible]# ansible-playbook playbook.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details

PLAY [Install and configure httpd and copy fstab file] ****
```

```
controller      node-1      + | ->
83yfuHrDLD3IlDq9eHc= root@ip-172-31-82-65.ec2.internal
[root@controller .ssh]# vim authorized_keys
[root@controller .ssh]# 3L, 1140B written
[root@controller .ssh]# cd
[root@controller ~]# cd /etc/ansible
[root@controller ansible]# ansible-playbook playbook.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details

PLAY [Install and configure httpd and copy fstab file] ****
TASK [Gathering Facts] ****
fatal: [172.31.82.65]: UNREACHABLE! => {"changed": false, "msg": "Failed to connect to the host via ssh: root@172.31.82.65: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).", "unreachable": true}
[WARNING]: Platform linux on host 172.31.88.222 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.88.222]

TASK [Install httpd package] ****
changed: [172.31.88.222]

TASK [Start and enable httpd service] ****
changed: [172.31.88.222]

TASK [Copy fstab file to /tmp folder] ****
changed: [172.31.88.222]

PLAY RECAP ****
172.31.82.65 : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
172.31.88.222 : ok=4    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@controller ansible]# client_loop: send disconnect: Connection reset
PS C:\Users\10748164\Downloads> |
```

Node-1

```
controller node-1
Windows PowerShell
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PS C:\Users\10748164\Downloads> ssh -i "git.pem" ec2-user@ec2-35-175-234-129.compute-1.amazonaws.com
The authenticity of host 'ec2-35-175-234-129.compute-1.amazonaws.com (35.175.234.129)' can't be established.
ED25519 key fingerprint is SHA256:otMbW8gnh/GKqToabAtb2c3MHPtkMs75PHI1ZNmMgE.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-35-175-234-129.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

#_ _ _ _ _ Amazon Linux 2023
~~~ \####\_
~~~ \###\_
~~~ \#\#
~~~ \#/ ___ https://aws.amazon.com/linux/amazon-linux-2023
~~~ V~' '->
~~~ /_
~~~ .-'/-
~~~ /_/
/_/m'_

[ec2-user@ip-172-31-88-222 ~]$ sudo su -
[root@ip-172-31-88-222 ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:EwpCsBEEbNC0ncLurKmGoq51BCyIhQVJSj87ZHUA6o root@ip-172-31-88-222.ec2.internal
The key's randomart image is:
+---[RSA 3072]---
```

```
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SHA256:EwpCsBEEbNC0ncLurKmGoq51BCyIhQVJSj87ZHUA6o root@ip-172-31-88-222.ec2.internal
The key's randomart image is:
+---[RSA 3072]---+
|X&= . o.+ |
|Ox+o..o . o |
|B.B=+. . |
| oo+++. . |
| .E. . S |
| o .. . |
| . + . |
|o= . |
|&= . |
+---[SHA256]---+
[root@ip-172-31-88-222 ~]#
[root@ip-172-31-88-222 ~]# ip a s
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host noprefixroute
                valid_lft forever preferred_lft forever
2: enX0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc fq_codel state UP group default qlen 1000
    link/ether 12:18:64:86:ea:ef brd ff:ff:ff:ff:ff:ff
        altname eni-01c1ecd8f73563971
        altname device-number-0.0
        inet 172.31.222.20 metric 512 brd 172.31.95.255 scope global dynamic enX0
            valid_lft 3306sec preferred_lft 3306sec
            inet6 fe80::1018:64ff:fe86:eaef/64 scope link
                valid_lft forever preferred_lft forever
[root@ip-172-31-88-222 ~]# hostnamectl set-hostname node-1.example.com
[root@ip-172-31-88-222 ~]# bash
[root@node-1 ~]# vim /etc/hosts
[root@node-1 ~]# vim /etc/ssh/sshd_config
```

```
[root@node-1 ~]# vim /etc/hosts
[root@node-1 ~]# vim /etc/ssh/sshd_config
[root@node-1 ~]# ping 172.31.82.65
PING 172.31.82.65 (172.31.82.65) 56(84) bytes of data.
64 bytes from 172.31.82.65: icmp_seq=1 ttl=127 time=1.19 ms
64 bytes from 172.31.82.65: icmp_seq=2 ttl=127 time=1.06 ms
64 bytes from 172.31.82.65: icmp_seq=3 ttl=127 time=1.10 ms
^C
--- 172.31.82.65 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 1.063/1.119/1.194/0.055 ms
[root@node-1 ~]# vim /etc/hosts
[root@node-1 ~]# client_loop: send disconnect: Connection reset
PS C:\Users\10748164\Downloads> ssh -i "git.pem" ec2-user@ec2-35-175-234-129.compute-1.amazonaws.com
#_
#_ #####
#_ \#### Amazon Linux 2023
#_ \####
#_ \#/ ___ https://aws.amazon.com/linux/amazon-linux-2023
#_ \~'__->
#_ / \
#_ /_ \
#_ /_ \
#_ /_ \
#_ /_ \
Last login: Fri Sep 27 14:47:29 2024 from 136.226.233.25
[ec2-user@node-1 ~]$ sudo su -
Last login: Fri Sep 27 14:47:33 UTC 2024 on pts/1
[root@node-1 ~]# cd .ssh
[root@node-1 .ssh]# cat authorized_keys
no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \'ec2-user\' rather than the user \'root\'";echo;sleep 10;exit 142" ssh-rsa AAAAB3NzaC1yC2EAAAADQABAAQCYzCPgtrq5w9NHGxbWob2dLXKDb2e10jhe2zyihHe4bzSFYxpy/0N4z7oPtJKH5G9qzKXrWoOc2nKgolJxEm8kW4Mb1RoUd36fHguKNW4FK1jsqS97VqtHBfg5inRN2oxWUqj8BStn92yb80CJqbJWtAxUpaWUervbt6g0kW43Ms/2/rteqHIkOdIRESY+DXUH56k4qrEjM3yIlnHUmcYjrfx5vWLwydCQ83fa1Tk9HY9tP67ZYsJ3cmgDPDX6/QhmQu2FzDZB78L0m3m603h7M1FIklv9nChC5wQGf0eCzy4QpCtiSXYPG2WxMVbshwp0MuN5uzoKDiP31Cn git
[root@node-1 .ssh]# cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yC2EAAAADQABAAQGQCM6xeIR0kJ/+VwebguJQjskdMFI7MpZ1qaErTwfcW16a/kPLPKI0sjZe1UDiCdGtGnx5pkM93QYf+jYls5ogNCq8K8GlpqzzLs/CldMaewVE354WE1WPBP+BrhXPeBpDp6Y6gsQpJ4QYVVbnf9D0WiXqM/d61sVh5XIV5EELkM/hxyb7/eFOALjRz80/+p9P5MsUvKAJnwCkj0phwZwdzxzCaCrVj2pmZeS2vKJXnjzp3L40L1JFWD0HYFZUkzUbVcqJZAgDlFUk8PuysS0kjkjd3Nsua7oJ7ueFs1ljUoA1Jkjb7bs00Q8J/4QYxG8wf501M6Sj1UOhwOrBM9p0dvtHzVolY6RpNG5pFGunJ0x5/0x/EypCsJr84RCryPiy6n83stW1jUR85DkH0qDyxPsRwnbqFrXedUvJ7tfU1vBiShBkBDx1cpNEV3Trm4472VK9E+IjrRpcwlE59R0oJ3m38= root@ip-172-31-38-22.ec2.internal
[root@node-1 .ssh]# vim authorized_keys
[root@node-1 .ssh]# "authorized_keys" 3L, 1139B written
[root@node-1 .ssh]# cd
[root@node-1 ~]# rpmquery httpd
httpd-2.4.62-1.amzn2023.x86_64
[root@node-1 ~]# client_loop: send disconnect: Connection reset
PS C:\Users\10748164\Downloads>
```

history

1 vim /etc/hosts

2 vim /etc/ssh/sshd_config

3 ping 172.31.82.65

4 vim /etc/hosts

5 ssh-keygen

6 ips

7 hosts

8 bash

9 cd .ssh

```
11 cat id_rsa.pub
```

```
12 vim authorized_keys
```

```
13 cd
```

```
14 rpmquery httpd
```

Pull the Ubuntu image from Docker hub and Launch a web application in the container on port no. 8080 and this application should be reachable globally.

```
root@055d36a0581c:/var/www ~ + x
Windows PowerShell
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PS C:\Users\10748164\Downloads> ssh -i "git.pem" ec2-user@ec2-44-211-192-250.compute-1.amazonaws.com
The authenticity of host 'ec2-44-211-192-250.compute-1.amazonaws.com (44.211.192.250)' can't be established.
ED25519 key fingerprint is SHA256:F5ZC/XNS3akT2nJ+43c6jAiWQ1qmFK7t6UTLwtcixyU.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-44-211-192-250.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

#_
~\_ #####_ Amazon Linux 2023
~~\_#####_
~~ \###|
~~ \#/   https://aws.amazon.com/linux/amazon-linux-2023
~~ V~`-'>
~~ /
~~ .-' /-
~~ /_ /-
~/m'/

[ec2-user@ip-172-31-85-17 ~]$ sudo su -
[root@ip-172-31-85-17 ~]# yum install docker* -y
Last metadata expiration check: 0:00:40 ago on Fri Sep 27 15:35:37 2024.
Dependencies resolved.
=====
Package           Architecture Version       Repository      Size
=====
Installing:
 docker            x86_64      25.0.6-1.amzn2023.0.2    amazonlinux   44 M
Installing dependencies:
 containerd        x86_64      1.7.20-1.amzn2023.0.1    amazonlinux   35 M
 iptables-libs    x86_64      1.8.8-3.amzn2023.0.2.x86_64  amazonlinux   401 k
```

```
root@055d36a0581c:/var/www ~ + x
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /usr/lib/systemd/system/docker.socket.

Verifying : containerd-1.7.20-1.amzn2023.0.1.x86_64                                     1/10
Verifying : docker-25.0.6-1.amzn2023.0.2.x86_64                                       2/10
Verifying : iptables-libs-1.8.8-3.amzn2023.0.2.x86_64                                 3/10
Verifying : iptables-nft-1.8.8-3.amzn2023.0.2.x86_64                                4/10
Verifying : libcgroup-3.0-1.amzn2023.0.1.x86_64                                    5/10
Verifying : libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64                      6/10
Verifying : libnfnetlink-1.0.1-19.amzn2023.0.2.x86_64                           7/10
Verifying : libnftnl-1.2.2-2.amzn2023.0.2.x86_64                                8/10
Verifying : pigz-2.5-1.amzn2023.0.3.x86_64                                         9/10
Verifying : runc-1.1.13-1.amzn2023.0.1.x86_64                               10/10

Installed:
 containerd-1.7.20-1.amzn2023.0.1.x86_64    docker-25.0.6-1.amzn2023.0.2.x86_64    iptables-libs-1.8.8-3.amzn2023.0.2.x86_64
 iptables-nft-1.8.8-3.amzn2023.0.2.x86_64  libcgroup-3.0-1.amzn2023.0.1.x86_64    libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64
 libnfnetlink-1.0.1-19.amzn2023.0.2.x86_64 libnftnl-1.2.2-2.amzn2023.0.2.x86_64  pigz-2.5-1.amzn2023.0.3.x86_64
 runc-1.1.13-1.amzn2023.0.1.x86_64

Complete!
[root@ip-172-31-85-17 ~]#
[root@ip-172-31-85-17 ~]# systemctl start docker
[root@ip-172-31-85-17 ~]# systemctl enable docker
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.
[root@ip-172-31-85-17 ~]# docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
dafa2b0c44d2: Pull complete
Digest: sha256:dfc10878be8d8fc9c61cbff33166cb1d1fe44391539243703c72766894fa834a
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
```

```
[root@ip-172-31-85-17 ~]# docker run -it --name webapp -p 8080:80 ubuntu:latest /bin/bash
root@055d36a0581c:/# cd /var/www/html
bash: cd: /var/www/html: No such file or directory
root@055d36a0581c:/#
[root@ip-172-31-85-17 ~]# [root@ip-172-31-85-17 ~]# cd /var/www/html
-bash: cd: /var/www/html: No such file or directory
[root@ip-172-31-85-17 ~]# docker attach webapp
root@055d36a0581c:/# apt update -y
Get:1 http://archive.ubuntu.com/ubuntu noble InRelease [256 kB]
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [446 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [331 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble/main amd64 Packages [1808 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [476 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [364 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [13.7 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [19.3 MB]
Get:12 http://archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [117 kB]
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [503 kB]
Get:14 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [446 kB]
Get:15 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [678 kB]
Get:16 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [17.8 kB]
Get:17 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [11.8 kB]
Fetched 25.2 MB in 2s (16.1 MB/s)
Reading package lists... Done
Building dependency tree... Done
Building dependency tree... Done
Reading state information... Done
```

```
root@055d36a0581c:/var/www x + v
root@055d36a0581c:/# apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  adduser apache2-bin apache2-data apache2-utils
  ca-certificates krb5-locales libapr1t64
  libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libaprutil1t64 libbrotli libcurl4t64 libexpat1
  libgdbm-compat4t64 libgdbm6t64 libgssapi-krb5-2
  libicu74 libjansson4 libk5crypto3 libkeyutils1
  libkrb5-3 libkrb5support0 libldap-common libldap2
  liblua5.4-0 libnghttp2-14 libperl5.38t64 libpsl5t64
  librtmp1 libsasl2-2 libsasl2-modules
  libsasl2-modules-db libsqlite3-0 libssh-4 libssl3t64
  libxml2 media-types netbase openssl perl
  perl-modules-5.38 publicsuffix ssl-cert
Suggested packages:
  liblocale-gettext-perl cron quota cryptfs-utils
  apache2-doc apache2-suexec-pristine
  | apache2-suexec-custom www-browser ufw gdbm-l10n
  krb5-doc krb5-user libsasl2-modules-gssapi-mit
  | libsasl2-modules-gssapi-heimdal
  libsasl2-modules-ldap libsasl2-modules-otp
  libsasl2-modules-sql perl-doc
  libterm-readline-gnu-perl
  | libterm-readline-perl-perl make
  libtap-harness-archive-perl
The following NEW packages will be installed:
  adduser apache2 apache2-bin apache2-data
  apache2-utils ca-certificates krb5-locales libapr1t64
  libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libaprutil1t64 libbrotli libcurl4t64 libexpat1
  libicu74 libjansson4 libk5crypto3 libkeyutils1
  libkrb5-3 libkrb5support0 libldap-common libldap2
  liblua5.4-0 libnghttp2-14 libperl5.38t64 libpsl5t64
  librtmp1 libsasl2-2 libsasl2-modules
  libsasl2-modules-db libsqlite3-0 libssh-4 libssl3t64
  libxml2 media-types netbase openssl perl
  perl-modules-5.38 publicsuffix ssl-cert
```

The screenshot shows a terminal window with two log entries. The first entry is the Docker command to run a webapp container. The second entry is the output of the 'apt update' command, which lists numerous packages and dependencies being fetched from the Ubuntu repositories.

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0ca9268bf5e4edd61	HTTP	TCP	80	Cus... ▾	<input type="text"/> 0.0.0.0 X
sgr-0b80d41ec37225ddf	Custom TCP	TCP	8080	Cus... ▾	<input type="text"/> 0.0.0.0 X
sgr-0710422e621559515	SSH	TCP	22	Cus... ▾	<input type="text"/> 0.0.0.0 X

```
root@055d36a0581c:/var/www ~ + | ^ invoke-rc.d: could not determine current runlevel invoke-rc.d: policy-rc.d denied execution of start. Processing triggers for libc-bin (2.39-0ubuntu0.3) ... Processing triggers for ca-certificates (20240203) ... Updating certificates in /etc/ssl/certs... 0 added, 0 removed; done. Running hooks in /etc/ca-certificates/update.d... done. root@055d36a0581c:/# service apache2 start * Starting Apache httpd web server apache2 AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress this message * root@055d36a0581c:/# service apache2 enable Usage: apache2 {start|stop|graceful-stop|restart|reload|force-reload} root@055d36a0581c:/# cd /var/www/html root@055d36a0581c:/var/www/html# touch index.html root@055d36a0581c:/var/www/html# cat > index.html ^C root@055d36a0581c:/var/www/html# cat > index.html ^C root@055d36a0581c:/var/www/html# cat index.html root@055d36a0581c:/var/www/html# cat > index.html hieee^C root@055d36a0581c:/var/www/html# cat index.html root@055d36a0581c:/var/www/html# touch index.html root@055d36a0581c:/var/www/html# cat > index.html hieeee^C root@055d36a0581c:/var/www/html# cat index.html hieeee root@055d36a0581c:/var/www/html# |
```

