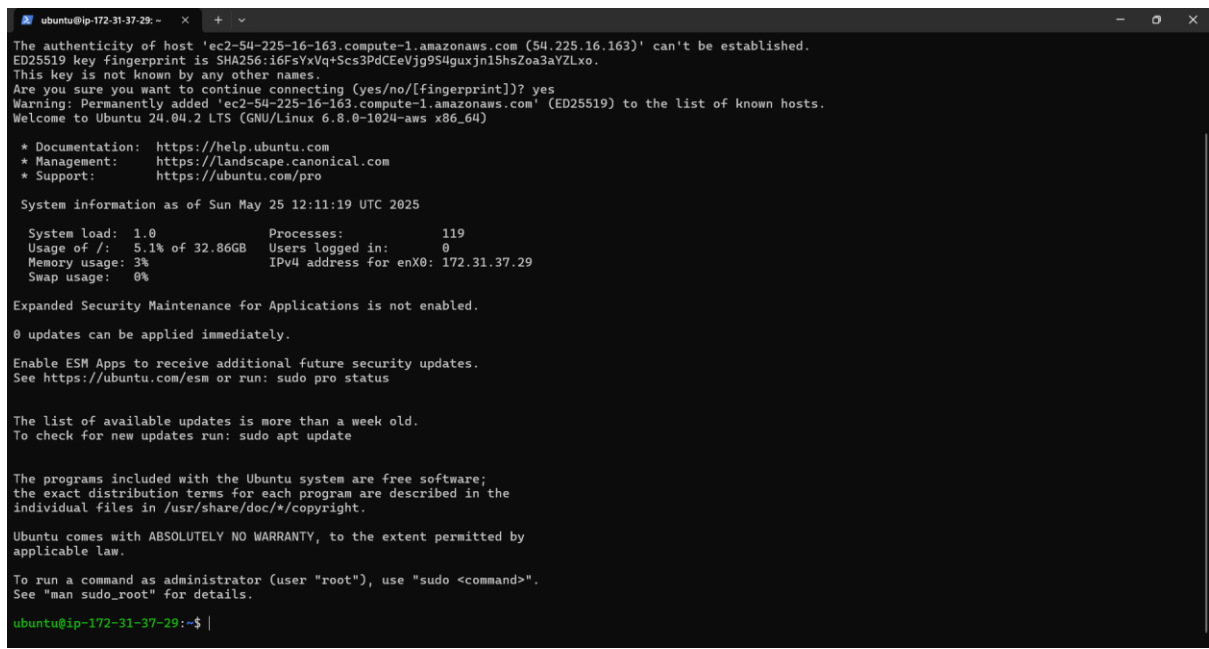
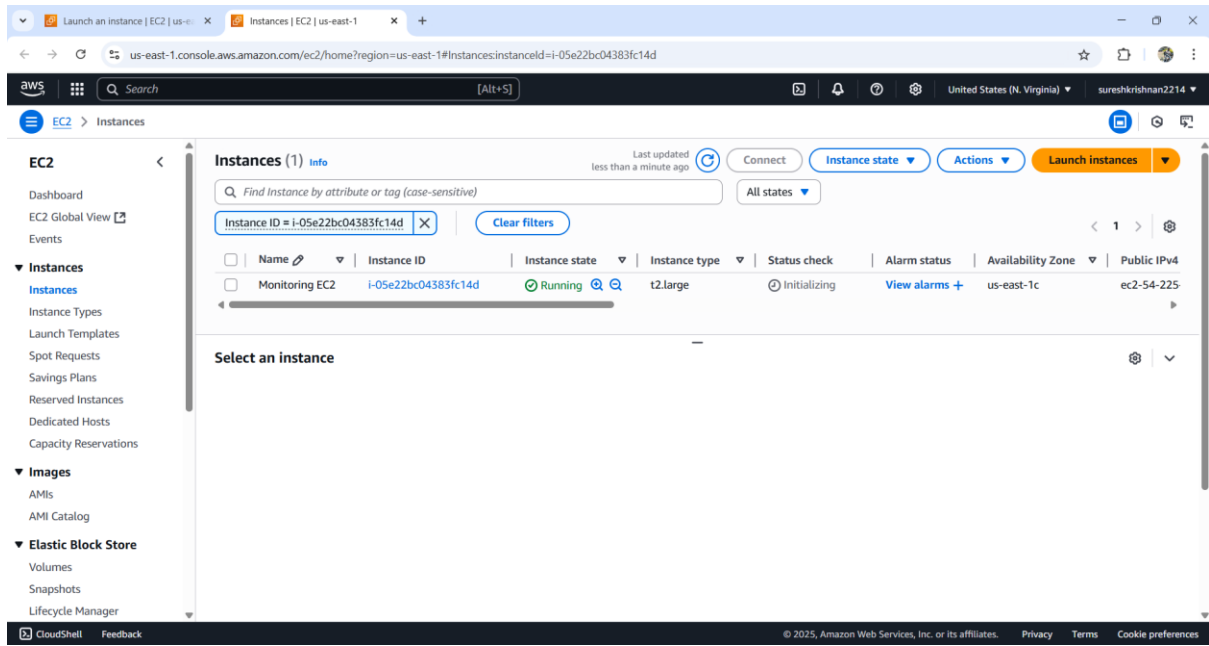
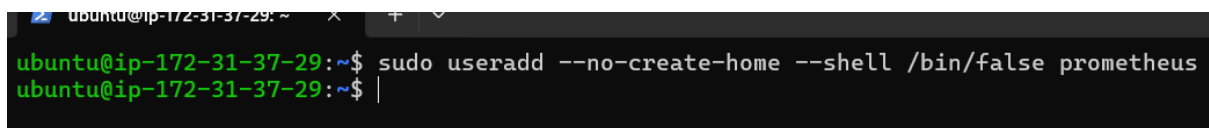


## Monitoring Task

### Connecting EC2 Instance:



### Installing Prometheus:



```
ubuntu@ip-172-31-37-29: ~  
ubuntu@ip-172-31-37-29:~$ sudo useradd --no-create-home --shell /bin/false prometheus  
ubuntu@ip-172-31-37-29:~$ sudo mkdir /etc/prometheus /var/lib/prometheus  
ubuntu@ip-172-31-37-29:~$ |
```

```
ubuntu@ip-172-31-37-29: /tm  
ubuntu@ip-172-31-37-29:~$ sudo useradd --no-create-home --shell /bin/false prometheus  
ubuntu@ip-172-31-37-29:~$ sudo mkdir /etc/prometheus /var/lib/prometheus  
ubuntu@ip-172-31-37-29:~$ cd /tmp  
curl -LO https://github.com/prometheus/prometheus/releases/download/v2.52.0/prometheus-2.52.0.linux-amd64.tar.gz  
tar xvf prometheus-2.52.0.linux-amd64.tar.gz  
cd prometheus-2.52.0.linux-amd64  
% Total % Received % Xferd Average Speed Time Time Time Current  
Dload Upload Total Spent Left Speed  
0 0 0 0 0 0 0 0 0:00:00 0:00:00 0:00:00 0  
100 99.8M 100 99.8M 0 92.5M 0 0:00:01 0:00:01 --:--:-- 113M  
prometheus-2.52.0.linux-amd64/  
prometheus-2.52.0.linux-amd64/LICENSE  
prometheus-2.52.0.linux-amd64/promtool  
prometheus-2.52.0.linux-amd64/console_libraries/  
prometheus-2.52.0.linux-amd64/console_libraries/prom.lib  
prometheus-2.52.0.linux-amd64/console_libraries/menu.lib  
prometheus-2.52.0.linux-amd64/prometheus  
prometheus-2.52.0.linux-amd64/conssoles/  
prometheus-2.52.0.linux-amd64/conssoles/node-overview.html  
prometheus-2.52.0.linux-amd64/conssoles/prometheus.html  
prometheus-2.52.0.linux-amd64/conssoles/node.html  
prometheus-2.52.0.linux-amd64/conssoles/index.html.example  
prometheus-2.52.0.linux-amd64/conssoles/node-disk.html  
prometheus-2.52.0.linux-amd64/conssoles/node-cpu.html  
prometheus-2.52.0.linux-amd64/conssoles/prometheus-overview.html  
prometheus-2.52.0.linux-amd64/prometheus.yml  
prometheus-2.52.0.linux-amd64/NOTICE  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ |
```

```
ubuntu@ip-172-31-37-29: /tm  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo cp prometheus /usr/local/bin/  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo cp promtool /usr/local/bin/  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo cp -r conssoles/ console_libraries/ /etc/prometheus/  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo cp prometheus.yml /etc/prometheus/  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo chown -R prometheus:prometheus /etc/prometheus /var/lib/prometheus /usr/local/bin/prometheus  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ |
```

**Creating systemd service:**

```
ubuntu@ip-172-31-37-29: /tm  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo tee /etc/systemd/system/prometheus.service > /dev/null <<EOF  
[Unit]  
Description=Prometheus  
Wants=network-online.target  
After=network-online.target  
  
[Service]  
User=prometheus  
Group=prometheus  
Type=simple  
ExecStart=/usr/local/bin/prometheus \\  
--config.file=/etc/prometheus/prometheus.yml \\  
--storage.tsdb.path=/var/lib/prometheus/ \\  
--web.console.templates=/etc/prometheus/conssoles \\  
--web.console.libraries=/etc/prometheus/console_libraries  
  
[Install]  
WantedBy=multi-user.target  
EOF  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ |
```

**Starting Prometheus:**

```
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo systemctl daemon-reexec  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo systemctl daemon-reload  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo systemctl enable prometheus  
Created symlink /etc/systemd/system/multi-user.target.wants/prometheus.service → /etc/systemd/system/prometheus.service.  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ sudo systemctl start prometheus  
ubuntu@ip-172-31-37-29:/tmp/prometheus-2.52.0.linux-amd64$ |
```

## Installing Node Exporter:

```
ubuntu@ip-172-31-37-29: /tm  X  +  v
ubuntu@ip-172-31-37-29: /tmp/prometheus-2.52.0.linux-amd64$ cd /tmp
curl -LO https://github.com/prometheus/node_exporter/releases/download/v1.8.0/node_exporter-1.8.0.linux-amd64.tar.gz
tar xvf node_exporter-1.8.0.linux-amd64.tar.gz
cd node_exporter-1.8.0.linux-amd64
sudo cp node_exporter /usr/local/bin/
sudo useradd -rs /bin/false node_exporter
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left     Speed
  0     0    0     0    0     0      0      0  --:--:-- --:--:-- --:--:--    0
100 10.1M 100 10.1M    0     0  54.1M      0  --:--:-- --:--:-- --:--:-- 54.1M
node_exporter-1.8.0.linux-amd64/
node_exporter-1.8.0.linux-amd64/NOTICE
node_exporter-1.8.0.linux-amd64/node_exporter
node_exporter-1.8.0.linux-amd64/LICENSE
ubuntu@ip-172-31-37-29: /tmp/node_exporter-1.8.0.linux-amd64$ |
```

```
ubuntu@ip-172-31-37-29: /tmp/node_exporter-1.8.0.linux-amd64$ sudo tee /etc/systemd/system/node_exporter.service > /dev/null <<EOF
[Unit]
Description=Node Exporter
After=network.target

[Service]
User=node_exporter
Group=node_exporter
Type=simple
ExecStart=/usr/local/bin/node_exporter

[Install]
WantedBy=multi-user.target
EOF
ubuntu@ip-172-31-37-29: /tmp/node_exporter-1.8.0.linux-amd64$ |
```

## Starting Node Exporter:

```
ubuntu@ip-172-31-37-29: /tm  X  +  v
ubuntu@ip-172-31-37-29: /tmp/node_exporter-1.8.0.linux-amd64$ sudo systemctl daemon-reload
ubuntu@ip-172-31-37-29: /tmp/node_exporter-1.8.0.linux-amd64$ sudo systemctl enable node_exporter
Created symlink /etc/systemd/system/multi-user.target.wants/node_exporter.service → /etc/systemd/system/node_exporter.service.
ubuntu@ip-172-31-37-29: /tmp/node_exporter-1.8.0.linux-amd64$ sudo systemctl start node_exporter
ubuntu@ip-172-31-37-29: /tmp/node_exporter-1.8.0.linux-amd64$ |
```

```
Launch an instance | EC2 | us-east-1  X  SecurityGroup | EC2 | us-east-1  X  54.225.16.163:9100/metrics  X  +
← → ↻ ⚠ Not secure 54.225.16.163:9100/metrics ☆ 📄 🌐 ⋮
# HELP go_gc_duration_seconds A summary of the pause duration of garbage collection cycles.
# TYPE go_gc_duration_seconds summary
go_gc_duration_seconds{quantile="0"} 0
go_gc_duration_seconds{quantile="0.25"} 0
go_gc_duration_seconds{quantile="0.5"} 0
go_gc_duration_seconds{quantile="0.75"} 0
go_gc_duration_seconds{quantile="1"} 0
go_gc_duration_seconds_sum 0
go_gc_duration_seconds_count 0
# HELP go_goroutines Number of goroutines that currently exist.
# TYPE go_goroutines gauge
go_goroutines 8
# HELP go_info Information about the Go environment.
# TYPE go_info gauge
go_info{version="go1.22.2"} 1
# HELP go_memstats_alloc_bytes Number of bytes allocated and still in use.
# TYPE go_memstats_alloc_bytes gauge
go_memstats_alloc_bytes 2.762904e+06
# HELP go_memstats_alloc_bytes_total Total number of bytes allocated, even if freed.
# TYPE go_memstats_alloc_bytes_total counter
go_memstats_alloc_bytes_total 2.762904e+06
# HELP go_memstats_buck_hash_sys_bytes Number of bytes used by the profiling bucket hash table.
# TYPE go_memstats_buck_hash_sys_bytes gauge
go_memstats_buck_hash_sys_bytes 1.449898e+06
# HELP go_memstats_frees_total Total number of frees.
# TYPE go_memstats_frees_total counter
go_memstats_frees_total 1344
# HELP go_memstats_gc_sys_bytes Number of bytes used for garbage collection system metadata.
# TYPE go_memstats_gc_sys_bytes gauge
go_memstats_gc_sys_bytes 2.082848e+06
# HELP go_memstats_heap_alloc_bytes Number of heap bytes allocated and still in use.
# TYPE go_memstats_heap_alloc_bytes gauge
go_memstats_heap_alloc_bytes 2.762904e+06
# HELP go_memstats_heap_idle_bytes Number of heap bytes waiting to be used.
# TYPE go_memstats_heap_idle_bytes gauge
go_memstats_heap_idle_bytes 3.825664e+06
# HELP go_memstats_heap_inuse_bytes Number of heap bytes that are in use.
# TYPE go_memstats_heap_inuse_bytes gauge
go_memstats_heap_inuse_bytes 4.120576e+06
# HELP go_memstats_heap_objects Number of allocated objects.
# TYPE go_memstats_heap_objects gauge
go_memstats_heap_objects 20940
# HELP go_memstats_heap_released_bytes Number of heap bytes released to OS.
# TYPE go_memstats_heap_released_bytes gauge
go_memstats_heap_released_bytes 3.825664e+06
# HELP go_memstats_heap_sys_bytes Number of heap bytes obtained from system.
# TYPE go_memstats_heap_sys_bytes gauge
```

## Connecting Node Exporter to Prometheus:

Launch an instance | EC2 | us-east-1

SecurityGroup | EC2 | us-east-1

54.225.16.163:9100/metrics

Prometheus Time Series Collect

← → ↻ ⚠ Not secure 54.225.16.163:9090/targets?search=

Prometheus

Alerts Graph Status Help

Targets

All scrape pools

All Unhealthy Collapse All

Filter by endpoint or labels

Unknown Unhealthy Healthy

node\_exporter (1/1 up) show links

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9100/metrics	UP	instance="localhost:9100" job="node_exporter"	6.644s ago	10.990ms	

prometheus (1/1 up) show links

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090" job="prometheus"	1.550s ago	4.325ms	

## Installing Grafana:

```
ubuntu@ip-172-31-37-29:/tm
Processing triggers for libc-bin (2.39-0ubuntu8.4) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for sgml-base (1.31) ...
Setting up libfontconfig1:amd64 (2.15.0-1.1ubuntu2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.4) ...
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.
--2025-05-25 12:30:59-- https://dl.grafana.com/oss/release/grafana_10.4.2_amd64.deb
Resolving dl.grafana.com (dl.grafana.com)... 146.75.38.217, 2a04:4e42:79::729
Connecting to dl.grafana.com (dl.grafana.com)[146.75.38.217]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 114265924 (109M) [application/octet-stream]
Saving to: 'grafana_10.4.2_amd64.deb'

grafana_10.4.2_amd64.deb      100%[=====] 108.97M  13.9MB/s   in 7.8s

2025-05-25 12:31:07 (14.0 MB/s) - 'grafana_10.4.2_amd64.deb' saved [114265924/114265924]

Selecting previously unselected package grafana.
(Reading database ... 78698 files and directories currently installed.)
Preparing to unpack grafana_10.4.2_amd64.deb ...
Unpacking grafana (10.4.2) ...
dpkg: dependency problems prevent configuration of grafana:
 grafana depends on musl; however:
  Package musl is not installed.

dpkg: error processing package grafana (--install):
 dependency problems - leaving unconfigured
Errors were encountered while processing:
 grafana
ubuntu@ip-172-31-37-29:/tmp/node_exporter-1.8.0.linux-amd64$
```

## Starting Grafana:

