TASK 7: Monitor System Resources Using Netdata

Objective:

Install and run Netdata using Docker to monitor system metrics like CPU, memory, disk, and Docker containers, and configure email alerts.

Step-by-Step: Install and Run Netdata with Docker:

Launch the ec2 instance (ubuntu)

➢ **Install Docker**
  o sudo apt update
  o sudo apt install docker.io -y
  o sudo systemctl start docker
  o sudo systemctl enable docker

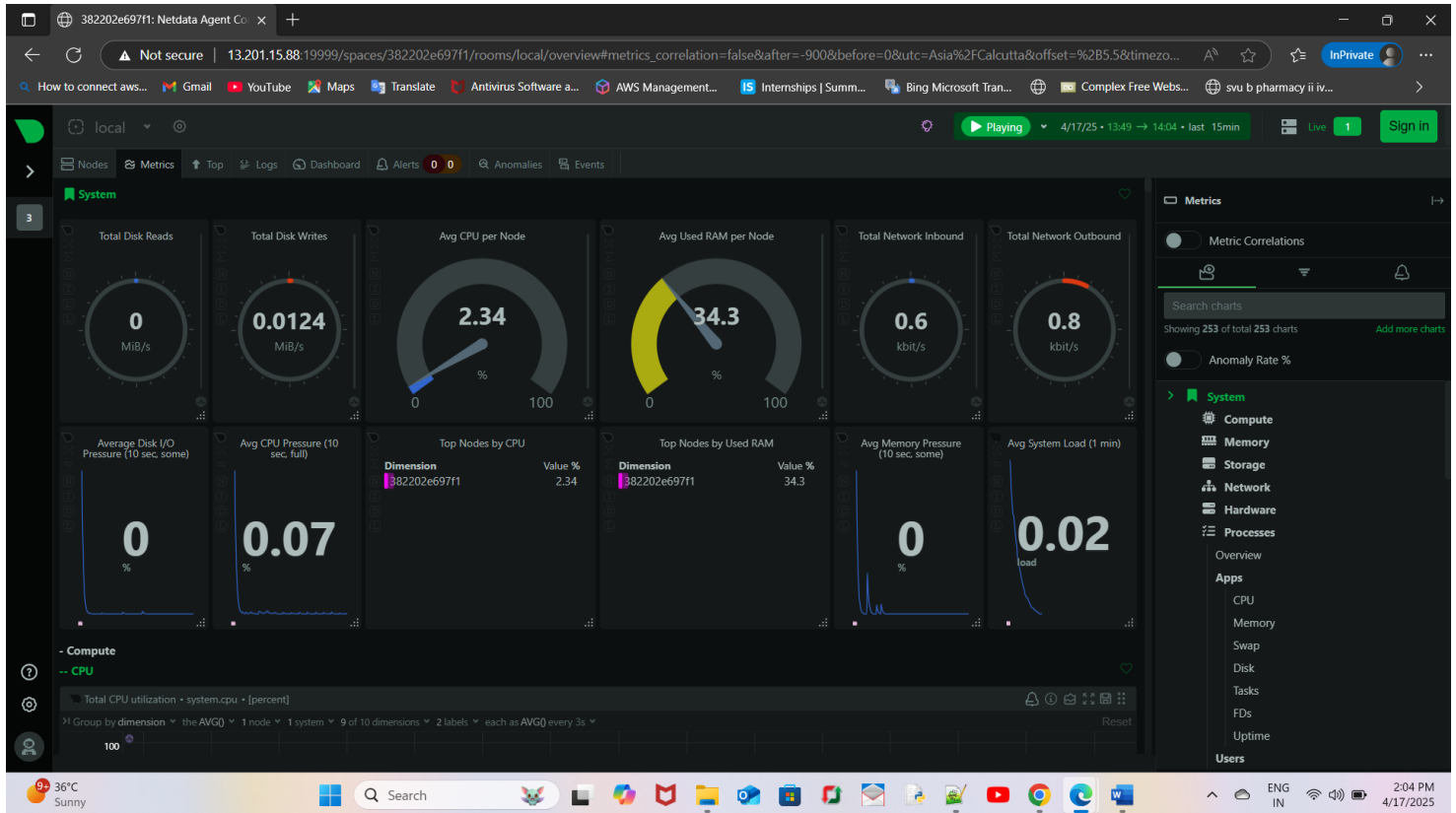➢ **Run Netdata Container**:
    docker run -d --name=netdata \
      -p 19999:19999 \
      --cap-add=SYS_PTRACE \
      --security-opt apparmor=unconfined \
      -v netdataconfig:/etc/netdata \
      -v netdatalib:/var/lib/netdata \
      -v netdatacache:/var/cache/netdata \
      -v /etc/passwd:/host/etc/passwd:ro \
      -v /etc/group:/host/etc/group:ro \
      -v /proc:/host/proc:ro \
      -v /sys:/host/sys:ro \
      -v /etc/os-release:/host/etc/os-release:ro \
      netdata/netdata

```
root@ip-172-31-34-175:~# docker ps
CONTAINER ID   IMAGE           COMMAND            CREATED         STATUS               PORTS                                               NAMES
76ae743794b9   netdata/netdata "/usr/sbin/run.sh"  28 minutes ago  Up 28 minutes (healthy) 0.0.0.0:19999->19999/tcp, :::19999->19999/tcp   netdat
a
```

➢ **Access Dashboard**: Open your browser and go to:
   o http://public_ip:19999

➢ **Using Netdata Dashboard**
   o **Monitor Metrics:**
      ▪ CPU usage
      ▪ RAM & swap
      ▪ Disk I/O
      ▪ Network interfaces
      ▪ Docker container stats (e.g., CPU, memory, network)

   o **Explore Panels**:
      ▪ Click charts to zoom in and filter
      ▪ Use the left panel to navigate between system components
   o **Alerts**:
      ▪ See active alarms and thresholds under the "Alarms" tab

➢ **View Logs:** Inside container
   o docker exec -it netdata bash
   o cd /var/log/netdata
   o tail -f error.log

- ➢ **SET UP msmtp TO SEND EMAILS FROM NETDATA (Docker Host)**
  - o sudo apt update
  - o sudo apt install msmtp msmtp-mta -y

- ➢ **Create a Config File for msmtp:**
  - o **Create the file (on the host, not in the container):** nano ~/.msmtprc
  - o **Paste this config (replace the placeholders with your Gmail info):**

    # Gmail SMTP configuration

    defaults

    auth   on

    tls   on

    tls_trust_file /etc/ssl/certs/ca-certificates.crt

    logfile   ~/.msmtp.log

    account   gmail

    host   smtp.gmail.com

    port   587

    from   yourgmail@gmail.com

    user   yourgmail@gmail.com

    password your_app_password

    account default : gmail

- ➢ Set File Permissions: chmod 600 ~/.msmtprc (This protects your email credentials.)
- ➢ Set Netdata to Use msmtp for Email:
  - o Inside container:
    - ▪ docker exec -it netdata bash
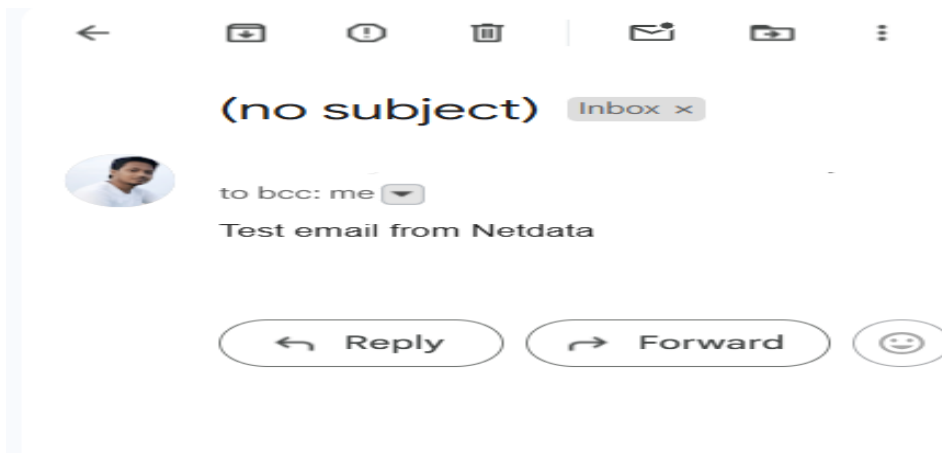   - ▪ nano /etc/netdata/health_alarm_notify.conf
  - o set:

    SEND_EMAIL="YES"

    EMAIL_CMD="msmtp -C /etc/netdata/.msmtprc"

    DEFAULT_RECIPIENT_EMAIL="yourgmail@gmail.com"

- ➢ Test Email from Command Line
  - o Run this test:
    - ▪ echo "Test email from Netdata" | msmtp yourgmail@gmail.com
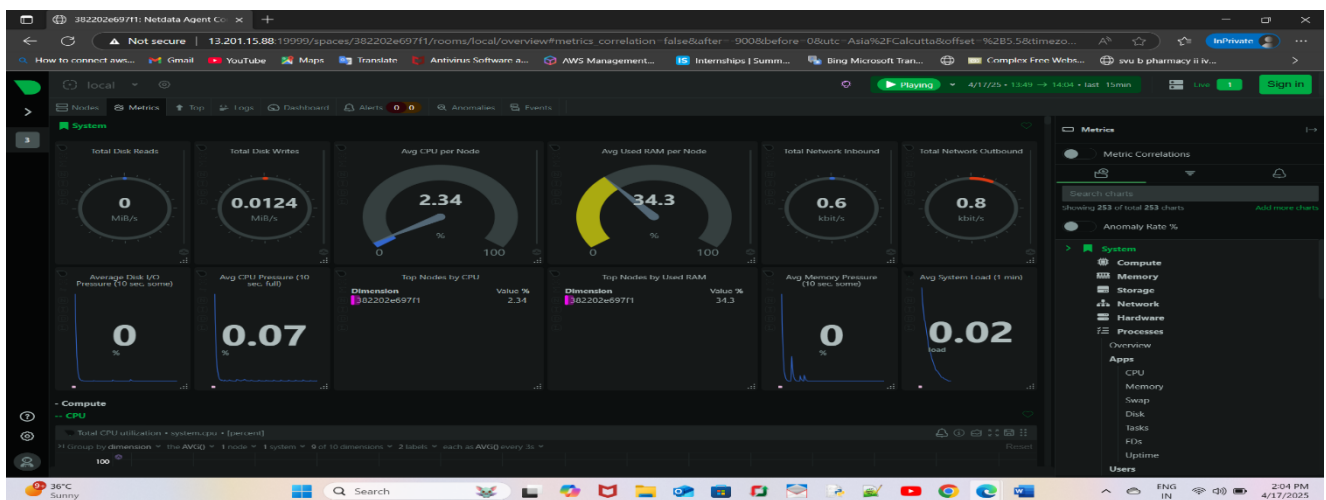 - o Check your inbox. If it arrives, you're good to go.

(no subject) Inbox ×

to bcc: me ▼

Test email from Netdata

← Reply   → Forward   ☺

➢ **Install stress**
  - ○ sudo apt update
  - ○ sudo apt install stress -y
➢ Run stress command for 60seconds
  - ○ stress --cpu 4 --timeout 60

➢ **Explore Logs**
  - ○ **If running inside Docker:**
    - ▪ **Enter the container:**
      - • **docker exec -it netdata bash**
  - ○ **Navigate to the log directory:**
    - ▪ **cd /var/log/netdata**

- ▪ **ls -lh**


```
root@ip-172-31-34-175:/var/log# docker exec -it 76ae743794b9 /bin/bash
root@76ae743794b9:/# cd /var/log/netdata
root@76ae743794b9:/var/log/netdata# ls
access.log  aclk.log  collector.log  daemon.log  debug.log  error.log  health.log
```

➢ FINALLY, ALARMS:

- o Onces the threshold range will reached means it shows the alert like this