**SNMP/Prometheus/Grafana Setup:**

NOTE: I got inspiration from this tutorial on how to install SNMP exporter <https://sbcode.net/prometheus/snmp-exporter/>

To install SNMP Exporter run these commands:

wget https://github.com/prometheus/snmp\_exporter/releases/download/v0.19.0/snmp\_exporter-0.19.0.linux-amd64.tar.gz

tar xzf snmp\_exporter-0.19.0.linux-amd64.tar.gz

cd snmp\_exporter-0.26.0.linux-amd64

ls -lh

cp ./snmp\_exporter /usr/local/bin/snmp\_exporter

cp ./snmp.yml /usr/local/bin/snmp.yml

cd /usr/local/bin/

After, we want to create the snmp-exporter.service:

sudo vim /etc/systemd/system/snmp-exporter.service

[Unit]

Description=Prometheus SNMP Exporter Service

After=network.target

[Service]

Type=simple

User=prometheus

ExecStart=/usr/local/bin/snmp\_exporter --config.file="/usr/local/bin/snmp.yml"

[Install]

WantedBy=multi-user.target

Now run the snmp-exporter:

systemctl daemon-reload

sudo service snmp-exporter start

sudo service snmp-exporter status

Now we want to install Prometheus:

sudo apt update

sudo apt install prometheus

Now we want to install Grafana:

sudo apt update

sudo apt-get install -y adduser libfontconfig1

wget https://dl.grafana.com/oss/release/grafana\_9.3.2\_amd64.deb

sudo dpkg -i grafana\_9.3.2\_amd64.deb

sudo service grafana-server start

To get SNMP working in Grafana we must…

1st create a Prometheus data source:

Navigate to <http://localhost:3000/connections/datasources> and in the top right select “Add a data source”

Enter the connection as “http://localhost:9090”

Scroll down and click “Save and Test”

A screenshot of a computer

Description automatically generated

2nd create/import a Dashboard:

In my case, I imported pre-created dashboards to display my SNMP metrics.

Navigate to <http://localhost:3000/dashboards> and in the top right click New 🡪 Import

Input your Dashboard ID and select Prometheus as the data source

A screenshot of a computer

Description automatically generated

**InfluxDB/gRPC Setup:**

As denoted in the Lab2Guide, configure all devices for gRPC

Now download gnmic:

bash -c "$(curl -sL https://get-gnmic.openconfig.net)"

Create a gnmic.yml file to add hosts to the gRPC calls:

username: admin

password: admin

insecure: true

targets:

  R1:

    address: 10.100.0.6:6030

  R2:

    address: 10.100.0.7:6030

  R3:

    address: 10.100.0.8:6030

  R4:

    address: 10.100.0.9:6030

  S3:

    address: 10.100.0.3:6030

  S4:

    address: 10.100.0.4:6030

  S1:

    address: 10.200.0.1:6030

  S2:

    address: 10.200.0.2:6030

subscriptions:

  interface-counters:

    paths:

      - /interfaces/interface/state/oper-status

      - /components/component/cpu/utilization/state/instant

    sample-interval: 10s

outputs:

  influxdb:

    type: influxdb

    url: http://localhost:8086

    org: boulder

    bucket: netman

    token: NzDeX6UuoJRiSbcpy7BBKeqzecFC9ennIzHsiOVkUpVoAfmbKt3B6SYfbcL2dwxGjzuO\_xEu5-NFLOJqgKGmzQ==

    override-timestamps: false

    timestamp-precision: s

    health-check-period: 30s

    debug: true

Now we install InfluxDB:

sudo apt-get update && sudo apt-get install influxdb2

sudo service influxdb start

Now navigate to localhost:8086 and follow the signup instructions.

Once logged in, create a bucket by navigating to Load Data 🡪 Buckets. In the top right create a bucket named ‘netman’.

After the bucket is created, run the command:

gnmic subscribe --config gnmic.yml -d

Now navigate to Load Explorer and select a query to see CPU data.

**Syslog/Promtail/Loki/Grafana Setup:**

Install Syslog-ng, Promtail and Loki:

wget https://github.com/lux4rd0/grafana-loki-syslog-aio/archive/main.zip

unzip main.zip

cd grafana-loki-syslog-aio-main

docker-compose -f ./docker-compose-filesystem.yml up -d

Now navigate to the Grafana instance we created earlier. Please follow the instructions to add a data source, but for the instance select Loki instead of Prometheus.

For adding the dashboard, follow the dashboard adding instructions above and used Dashboard ID: 13766