How to configure remote Prometheus and Grafana to monitor Secure Malware Analytics (Formerly Threat Grid) Appliance

Contents

Introduction

In the Secure Malware Analytics (SMA) Appliance, we do not offer SNMP protocol to monitor the appliance resource usage, instead, the appliance offersPrometheus.

This document will outline how to configure a remote Prometheus instance and useGrafanato visualize the data pulled from the appliance.

Prerequisites

Download and install the following tools to your local machine/server:

- Prometheus -https://prometheus.io/download/
- Grafana -https://grafana.com/oss/grafana/

Requirements

- Secure Malware Analytics (SMA) Appliance Software Version 2.18 and above
- Windows Machine
- Admin access to Appliance Admin(Opadmin) Console
- Secure Malware Analytics (SMA) Appliance Opadmin SSL Certificate Trusted by the local machine

Components Used

- Secure Malware Analytics (SMA) Appliance
- Windows 11 Pro machine
- Prometheus
- Grafana

Configure

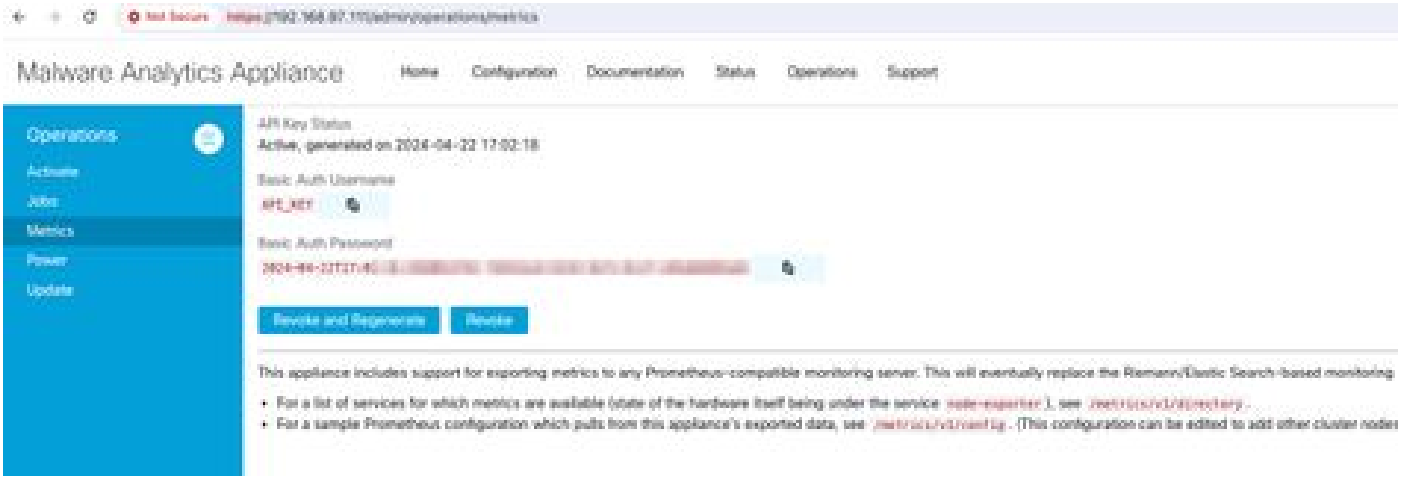
For this document, We have used a Windows 11 Pro as a remote host where we installed Prometheus and

Grafana. These tools are also available for Linux or MacOS.

1. Generate API key in Secure Malware Analytics (SMA) Appliance to access metrics

Login to SMA Appliance Opadmin. Generate API Key for Metrics from **Opadmin > Operation > Metrics**

2. A Basic Auth Username and Password will be generated which we will need to use in Remote Prometheus config.



3. Install and Configure Prometheus

Follow the instructions provided by Prometheus user guides to install your instance if you're using Linux or MacOS. For this document, we have installed Prometheus on a Windows 11 machine, and for the installation process, we followed this[Youtube video.]

4. Create a config file with the name `prometheus.yml`with the following content -

```
scrape_configs:
  - job_name: metrics
    scheme: https
    file_sd_configs:
      - files:
        - 'targets.json'

    relabel_configs:
      - source_labels: [__address__]
        regex:  '[^/]+(/.*)'            # capture '/...' part
        target_label: __metrics_path__  # change metrics path
      - source_labels: [__address__]
```

```
      regex:  '([^/]+)/.*'            # capture host:port
      target_label: __address__       # change target
  basic_auth:
    username: "API_KEY"
    password: "2024-04-22T15:32:14.082689318Z xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"
```

5. in `basic_auth` section use the Basic Auth Username and Password generated in Step 1.

6. Pull the configuration of services you will be able to pull metrics from by entering the following in the UI after logging into Opadmin -

```
https://<opadmin IP>/metrics/v1/config
```

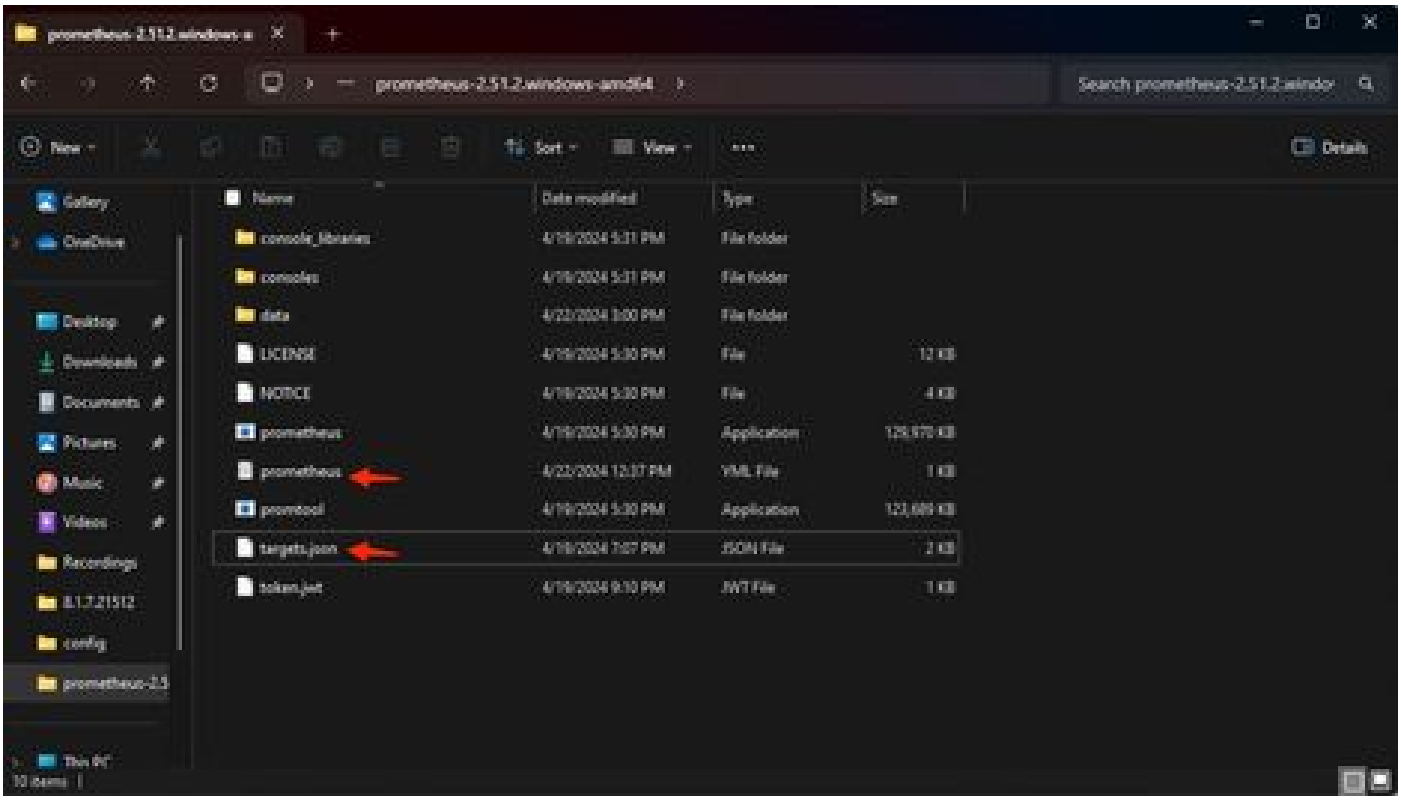
You will get something like -

```
[{"labels":{"service":"classifier"},"targets":["192.168.97.111:443/metrics/v1/service/classifier"]},{"l
```

Here `192.168.97.111` is Admin IP for my SMA appliance.

7. Create a file with the name `targets.json` and copy the above content into that file.

8. Copy `prometheus.yml` and `targets.json` to the Prometheus directory (follow installation guides), For Windows, I have created a Folder in C:\ drive and extracted the Prometheus installation files there. Then copied `prometheus.yml` and `targets.json` to that same folder.



9. Start Prometheus

Start Prometheus. For Windows execute `prometheus.exe` from the command line.

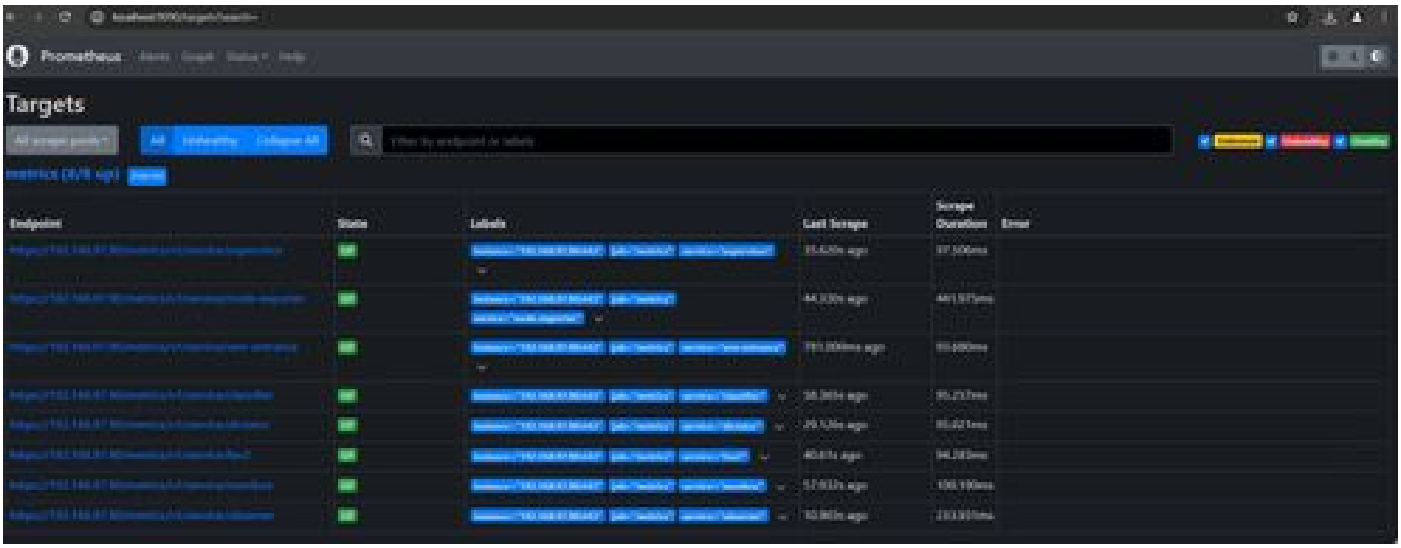
```
C:\Prometheus\prometheus-2.51.2.windows-amd64\prometheus-2.51.2.windows-amd64>prometheus.exe
```

This will start the Prometheus and start pulling the metrics from the SMA appliance. Note: Do not close the command line or Prometheus will shut down.

10. To check if your local Prometheus instance is able to pull metric from SMA Appliance load Prometheus UI - `http://localhost:9090/`

11. Go to `Status` > `Targets` - http://localhost:9090/targets?search=

Within a few minutes you should see all targets and status `UP` .



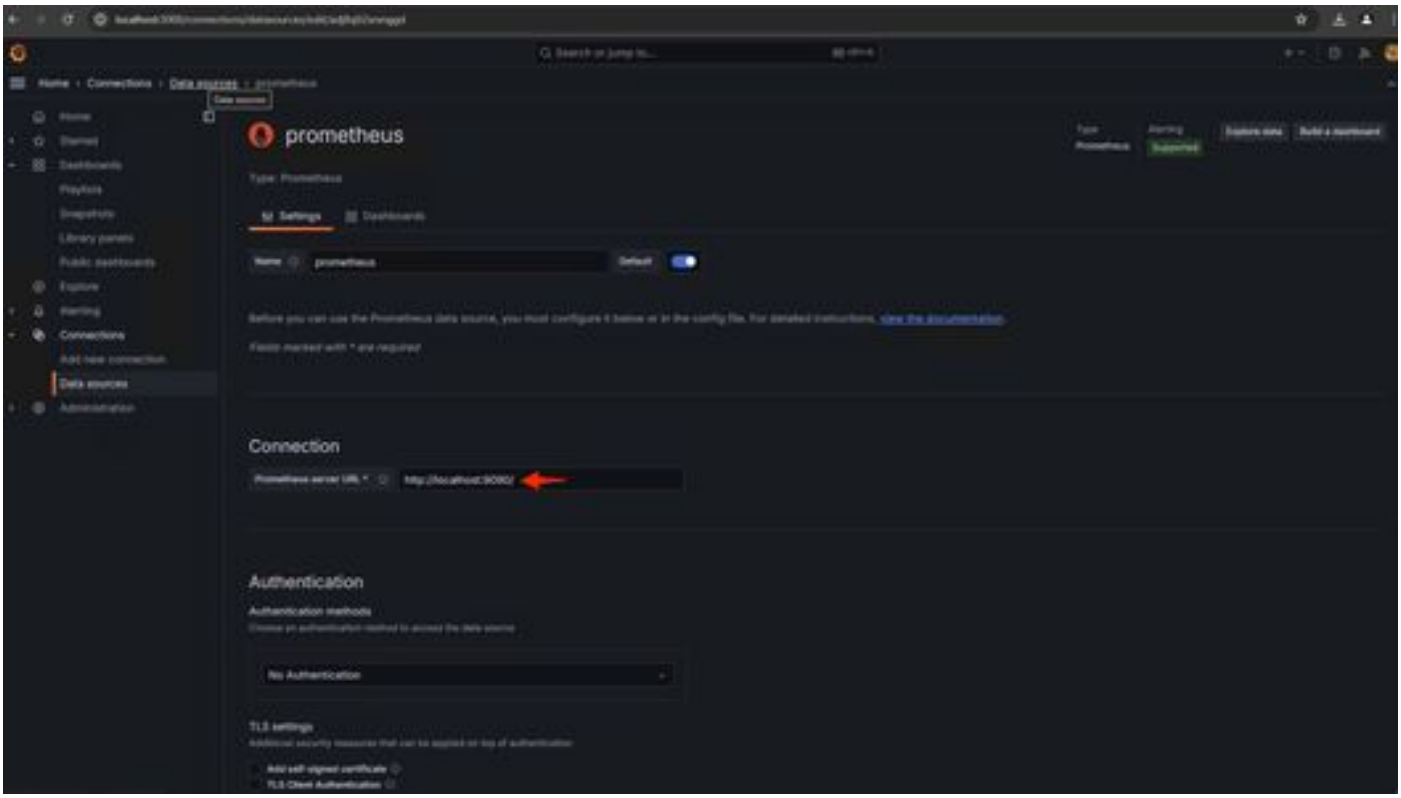
12. Install and Configure Grafana

Download the Grafana executable from Grafana Labs. Install Granafa, and follow the instructions provided by the installer.

13. After installing Grafana access UI in the browser -`http://localhost:3000/`

Go to **Home > Connections > Data sources** - `http://localhost:3000/connections/datasources`

Select`Add New Datasource` and Select`Prometheus` from the list. Enter the `http://localhost:9090/` as the Prometheus Server URL



At the bottom of that page select`Save & test`. After a successful test, we can create a Dashboard.

14. Create Grafana Dashboard

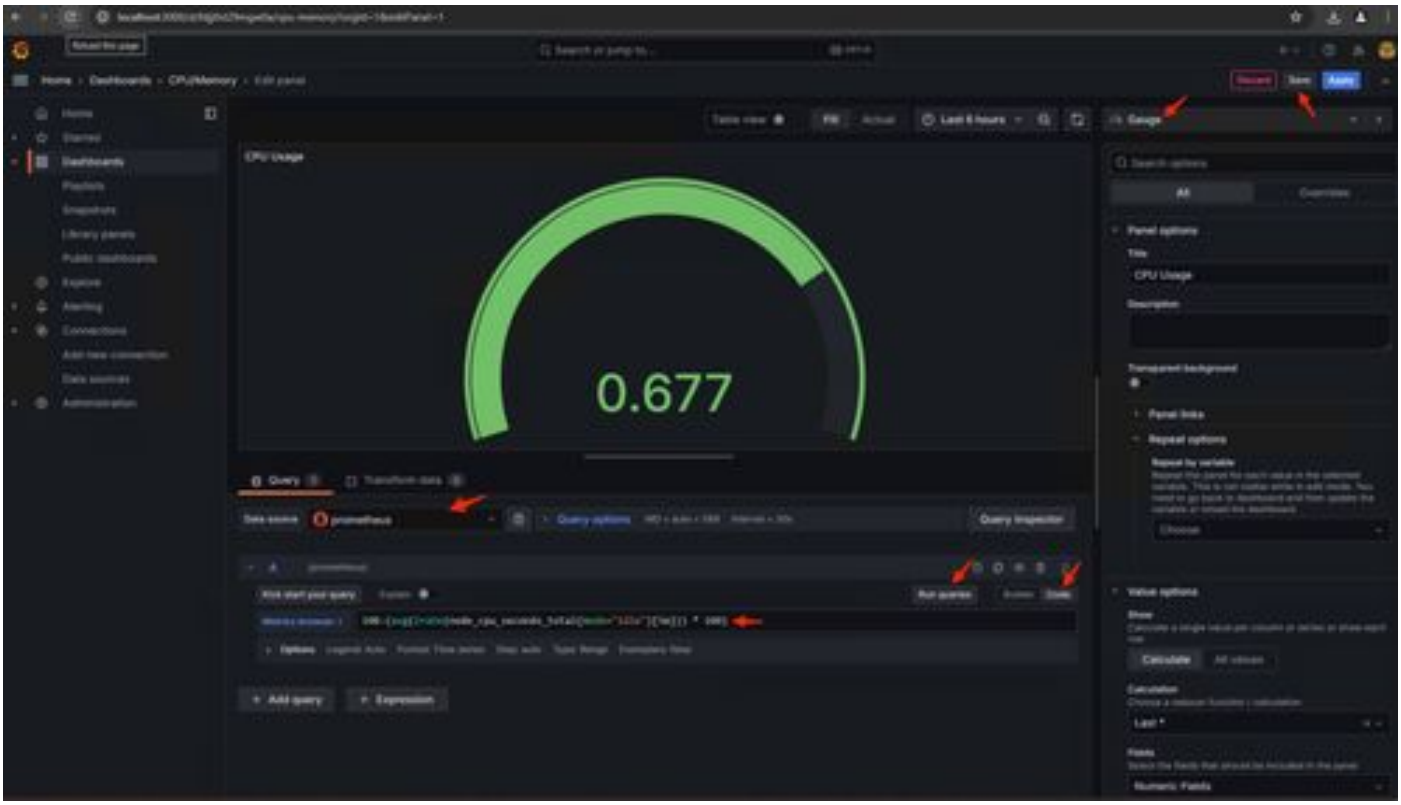
Go to`Dashboards` in Grafana UI , Select`Create Dashboard`>`Add visulization`. Select`Prometheus` Data Source.

In Query builder select`Code`input, Select Type of Visualization (I selected Gauge)

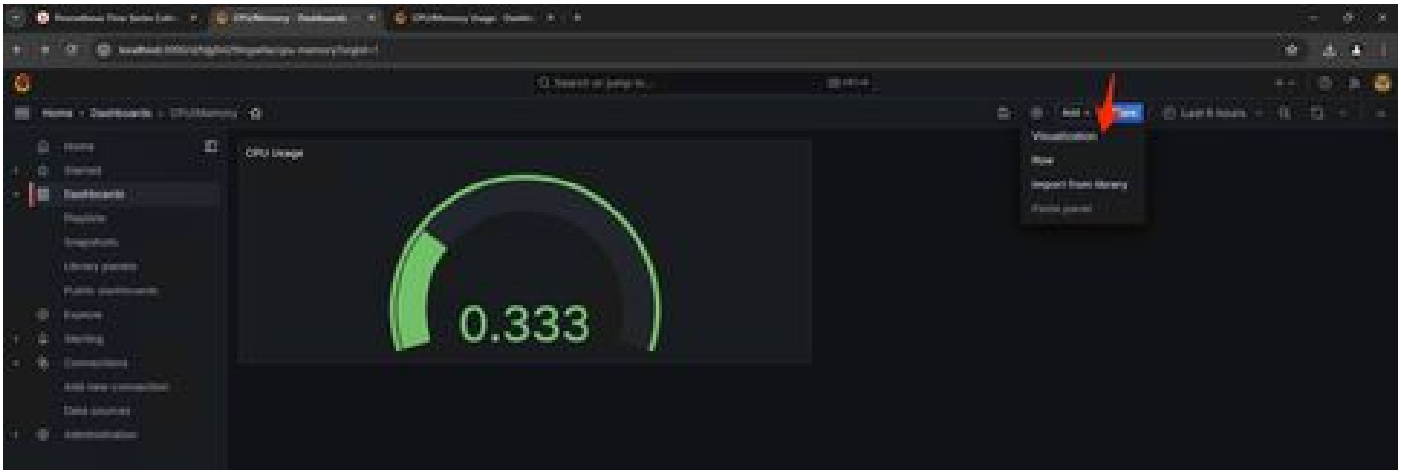
Enter the following query for**CPU Utilization**-

```
100-(avg(irate(node_cpu_seconds_total{mode="idle"}[5m])) * 100)
```

15. Click on `Run Queries`and you should see a visualization of CPU Usage like this -

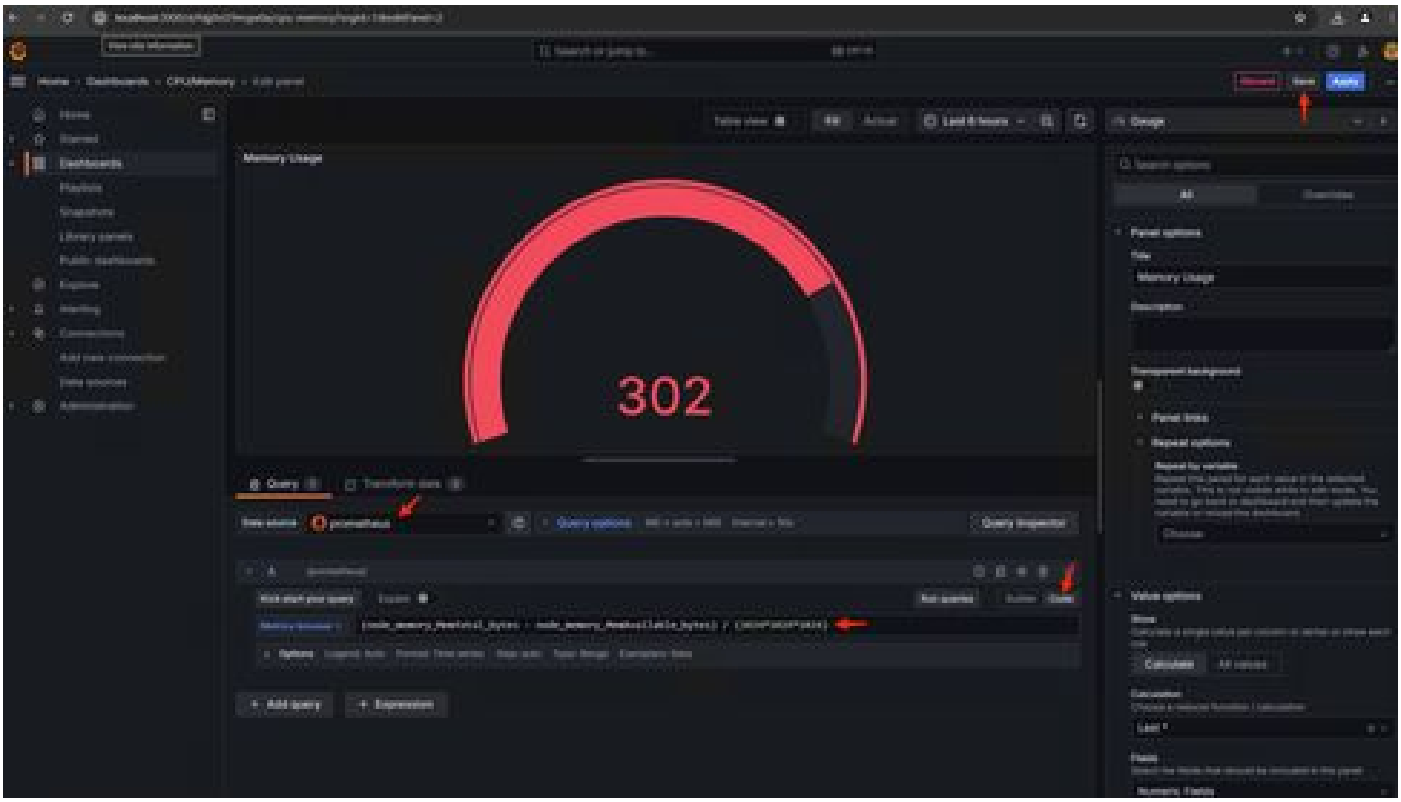


16. Save the panel, name the Dashboard, and Save. Add another `Visualization` for Memory Usage -



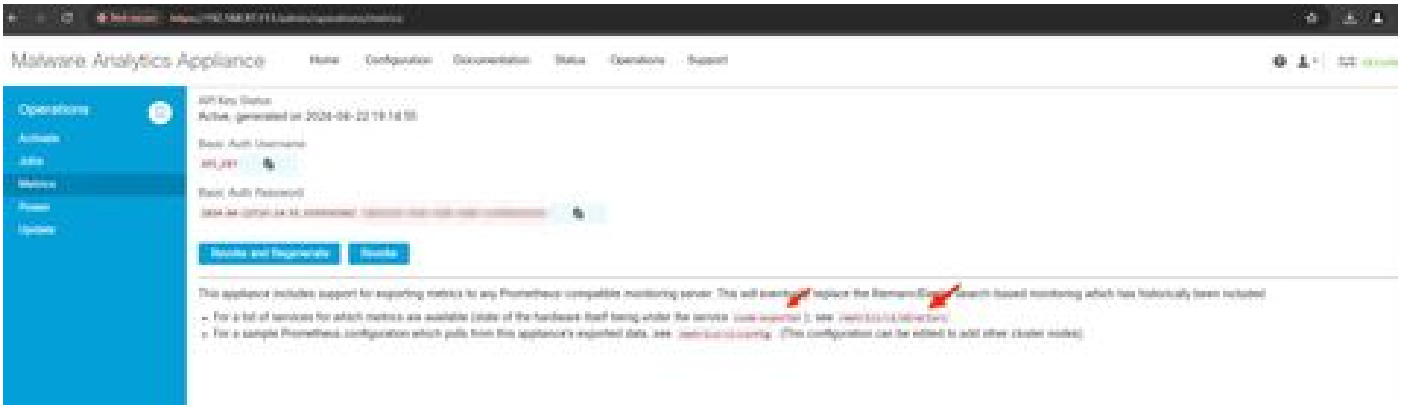
17. For Memory Utilization use the following query

```
(node_memory_MemTotal_bytes - node_memory_MemAvailable_bytes) / (1024*1024*1024)
```



18. Save the changes, and you should have a dashboard like this -

19. Other Hardware and Software metrics are available, For the details click on the links provided in`Opadmin> Metrics` page

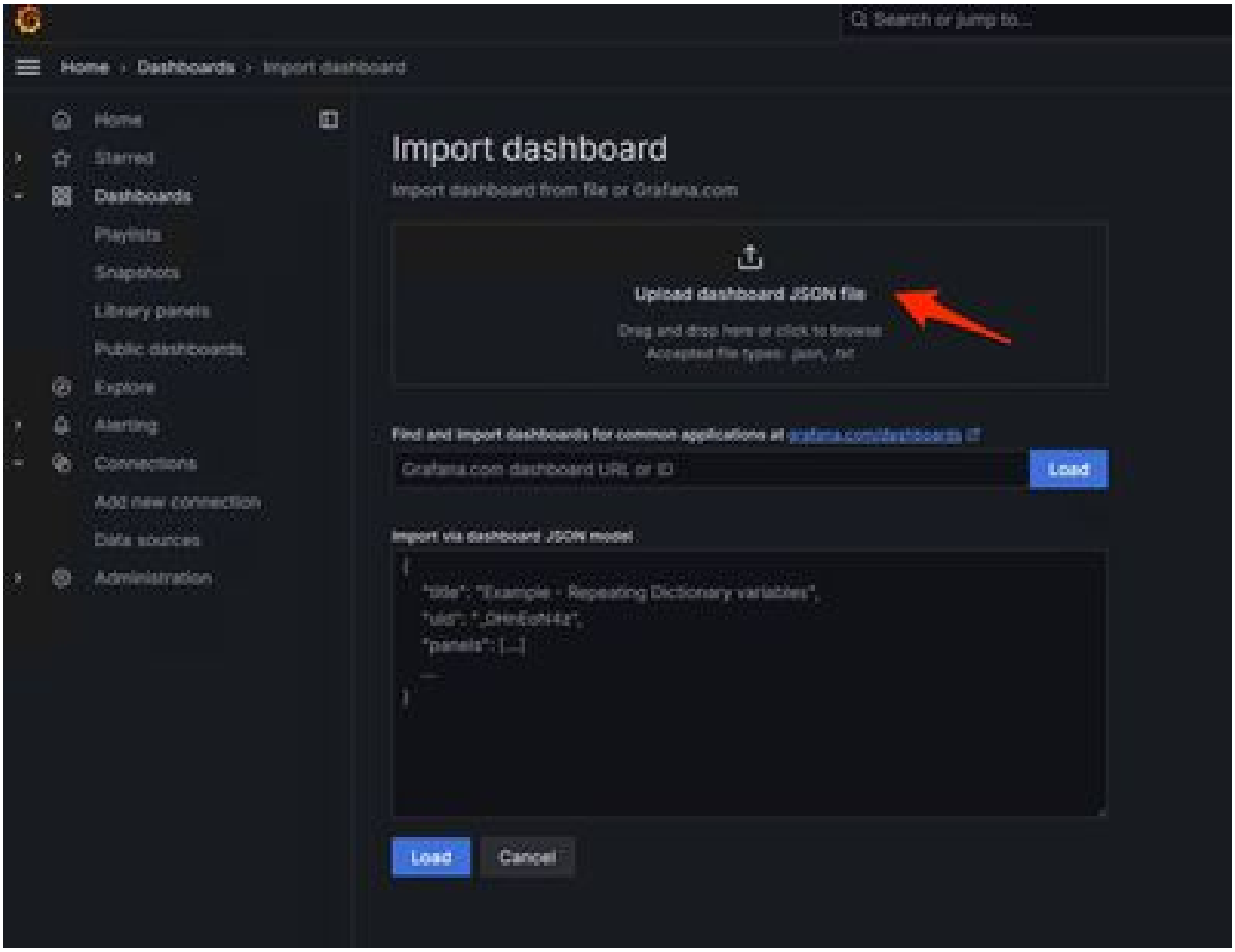


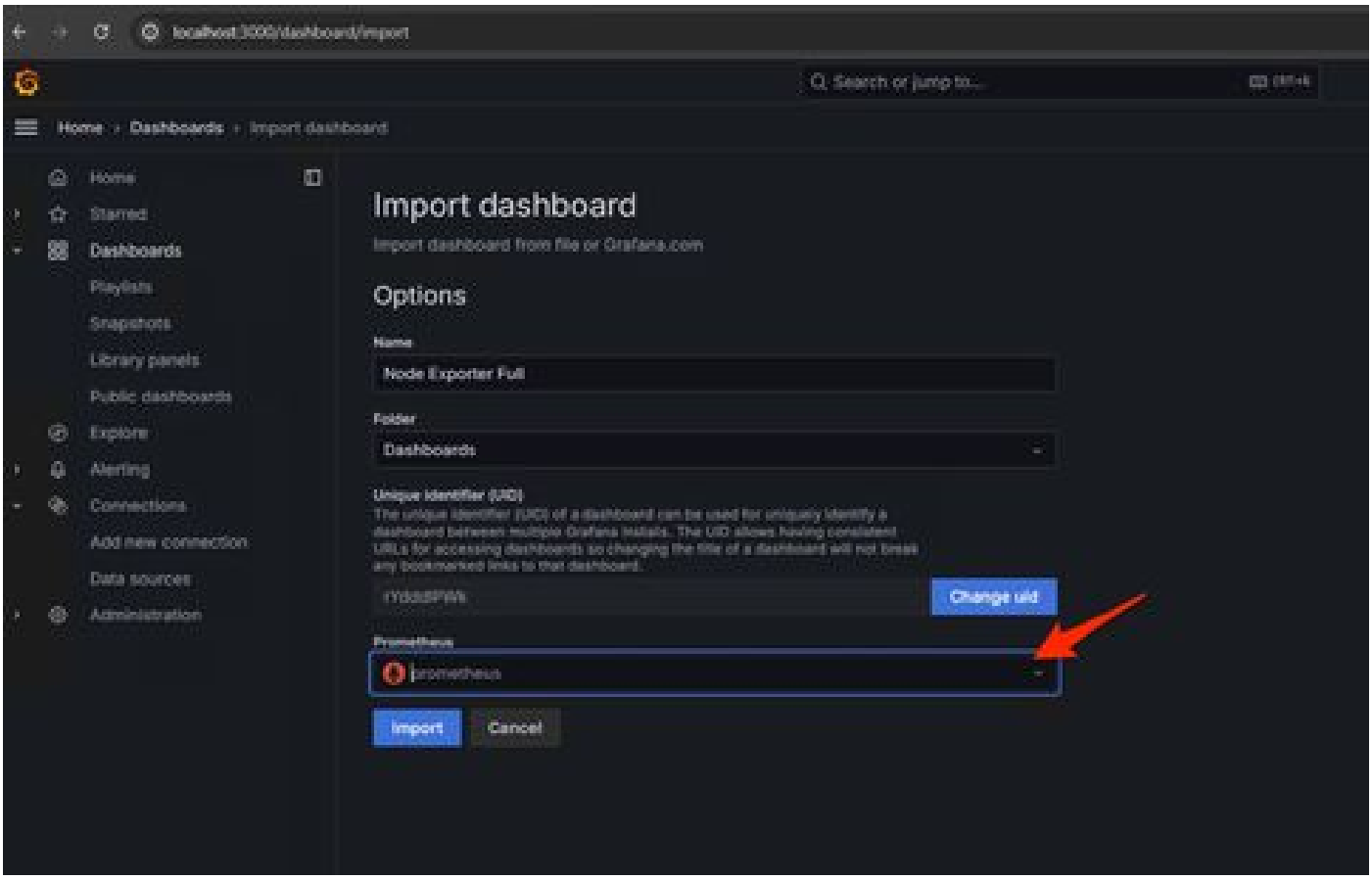
Grafana Dashboard Template

There are many Grafana Dashboard templates available for Node Exporter on the Grafana website. One of them is - [Node Exporter Full]

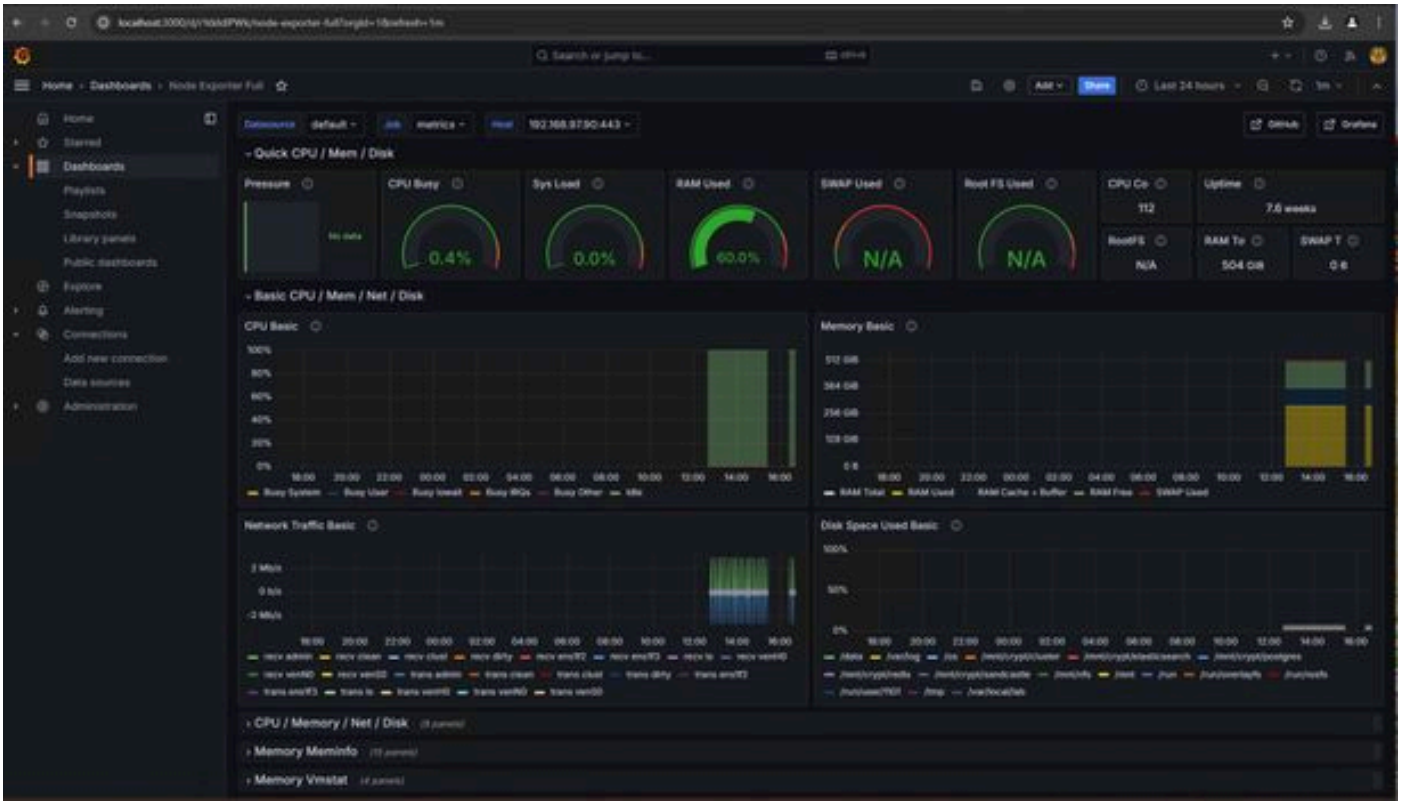
1. To import this dashboard to your Grafana instance Download the JSON, import the JSON file in Grafana

2. Upload the JSON file and Select the`Prometheus`data source





3. This will create a dashboard with a lot of hardware information (not all panel metrics are available)-



Troubleshoot

If the Prometheus failed to connect and pull metric from the SMA appliance, you will see the error

in `Status` > `Targets` - http://localhost:9090/targets?search=

If there is any`Error`, that needs to be fixed before it can pull the data. Common issue is SSL certificate of the SMA appliance Opadmin is not being trusted by the local machine. Make sure to create an SMA Admin Certificate with IP and DNS SAN, and add the Signing Root CA to the local machine's trust store.