Step-by-Step Guide to Setting Up Prometheus for Monitoring Azure Resources

Setting Up Prometheus for Monitoring

Prometheus is a powerful open-source monitoring and alerting toolkit designed for reliability and scalability. Here's a step-by-step guide to setting up Prometheus to monitor your infrastructure.

Here I am going to use Azure Linux Virtual Machine.

Step 1: Install Prometheus

Download Prometheus:

Visit the Prometheus download page and download the latest version for your operating system.

Extract the downloaded archive.

Official URL : https://prometheus.io/

```
Wget https://github.com/prometheus/prometheus/releases/download/v2.41.0/prometheus-2.41.0.linux-amd64.tar.gz
tar xvfz prometheus-*.tar.gz
cd prometheus-*
```

Step 2: Start Prometheus:

Run Prometheus with the default configuration file.

```
./prometheus --config.file=prometheus.yml
```

Configuration:

Before starting Prometheus, let's configure it.

```
/prometheus cat prometheus.yml
```

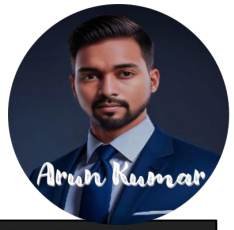
```
global:
  scrape_interval: 15s

scrape_configs:
  - job_name: ‘monitoring_vm'
    static_configs:
      - targets: ['localhost:9090’]
```

Note: Prometheus always running on port 9090 of Machine where it is installed.
To access it, Required port need to open from inbound port configuration option.

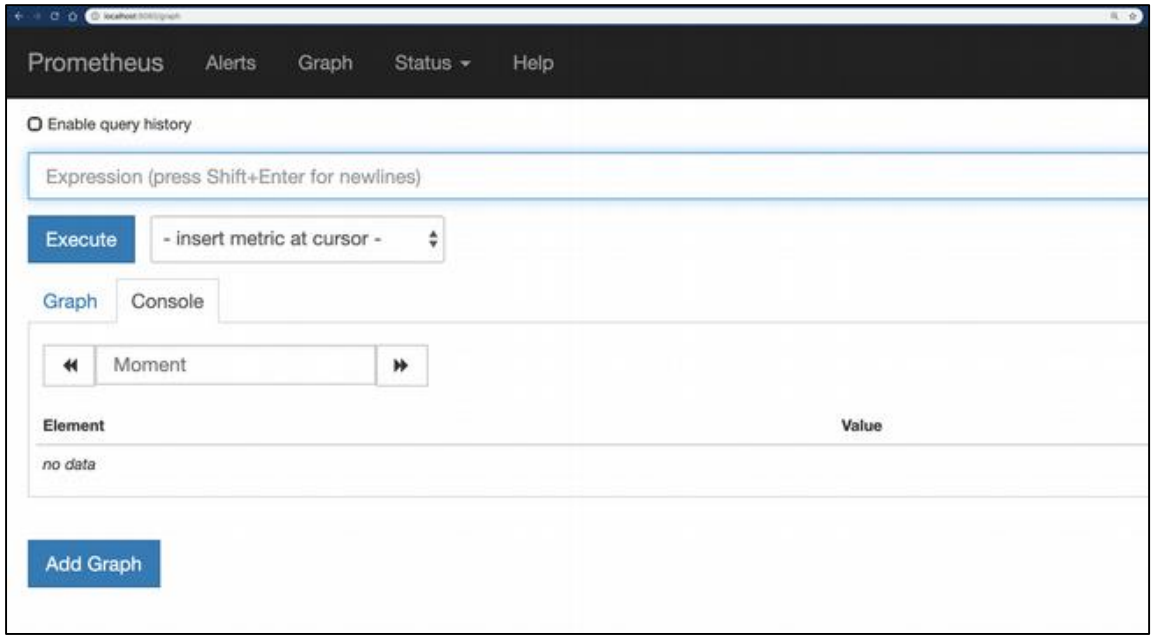
Start Prometheus.

```
/prometheus  --config.file=prometheus.yml
```

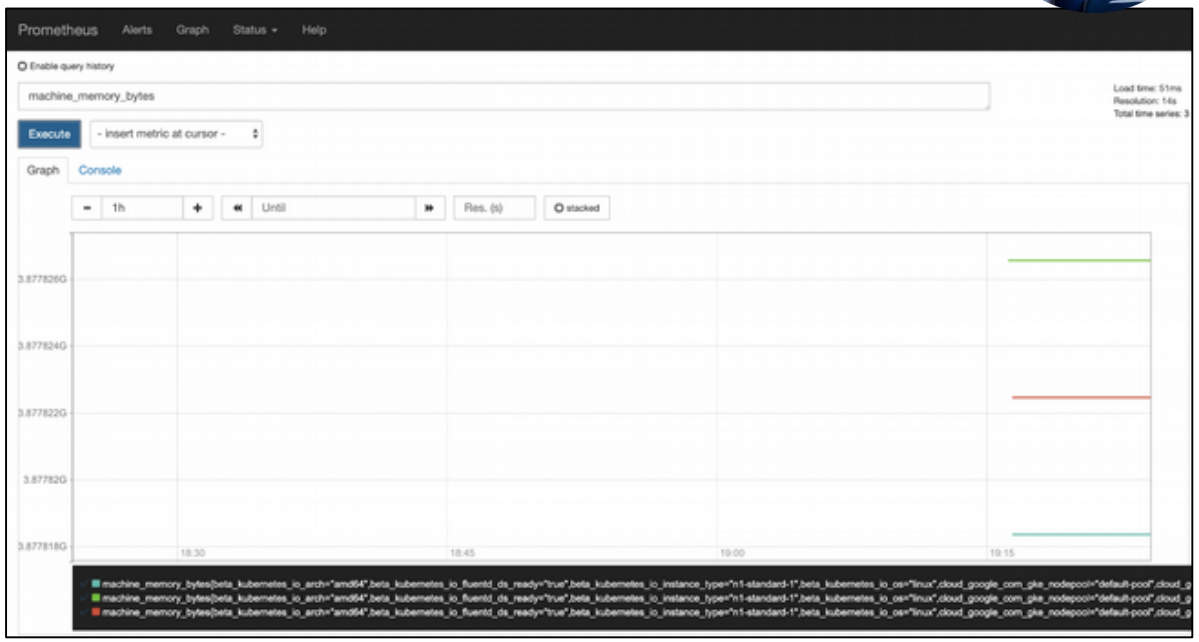
Now using http://localhost:9090 on web browser we can access Prometheus GUI



First Interface



after **machine_memory_bytes** execution of itself



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Start Prometheus.

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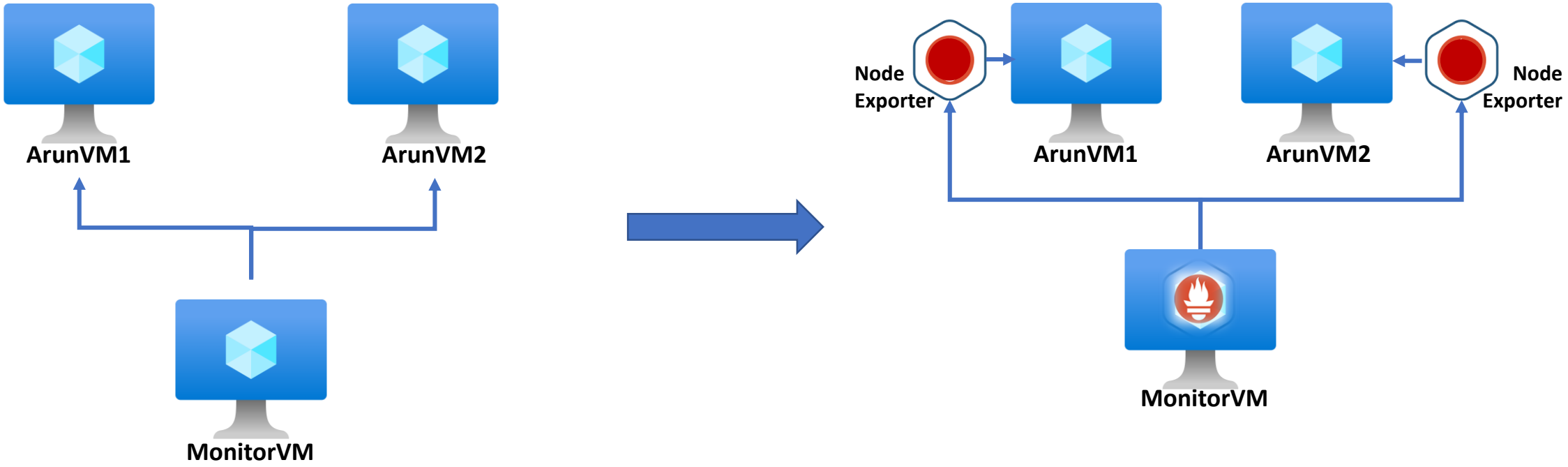
Simple Scenario:

Need to monitor 2 node VM with the help of Monitor VM

First action : to stablish connection between both node VMs to MonitorVM

Need to Install Node Exporter on every Node VMs



Configure Prometheus for this setup:

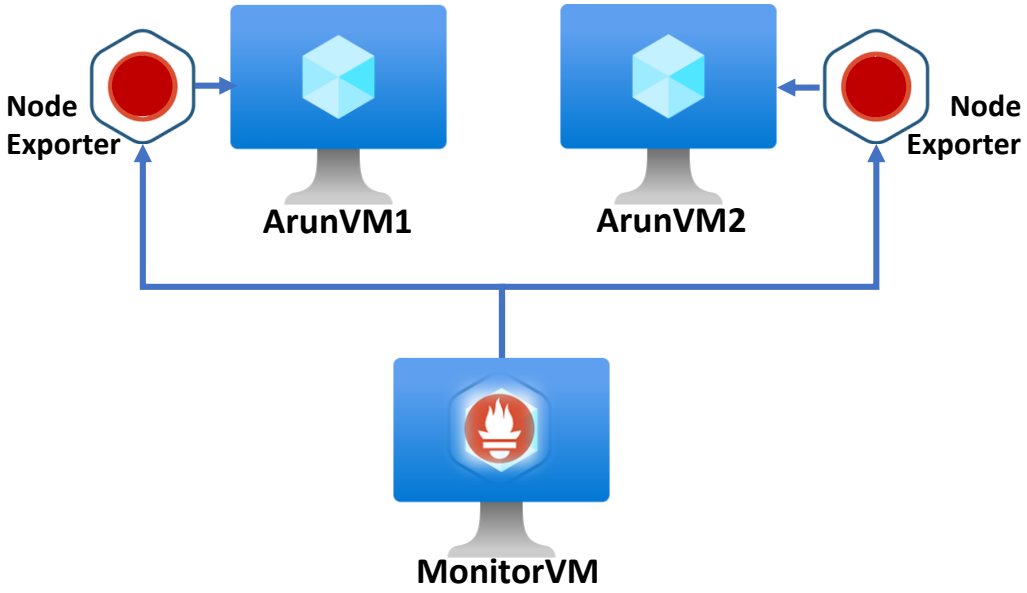
Edit the Configuration File:

Open the **prometheus.yml** file and define your scrape targets. For example, to monitor two VMs running Node Exporter:

```
/prometheus cat prometheus.yml

global:
  scrape_interval: 15s

scrape_configs:
  - job_name: ‘monitoring_vm'
    static_configs:
      - targets: ['localhost:9090’]
scrape_configs:
  - job_name: ‘ArunVM1'
    static_configs:
      - targets: [’ <ArunVM2-IP>:9100’]
scrape_configs:
  - job_name: ‘ArunVM1'
    static_configs:
      - targets: [‘<ArunVM2-IP>:9090’]
```



Set Up Exporters on Node VMs

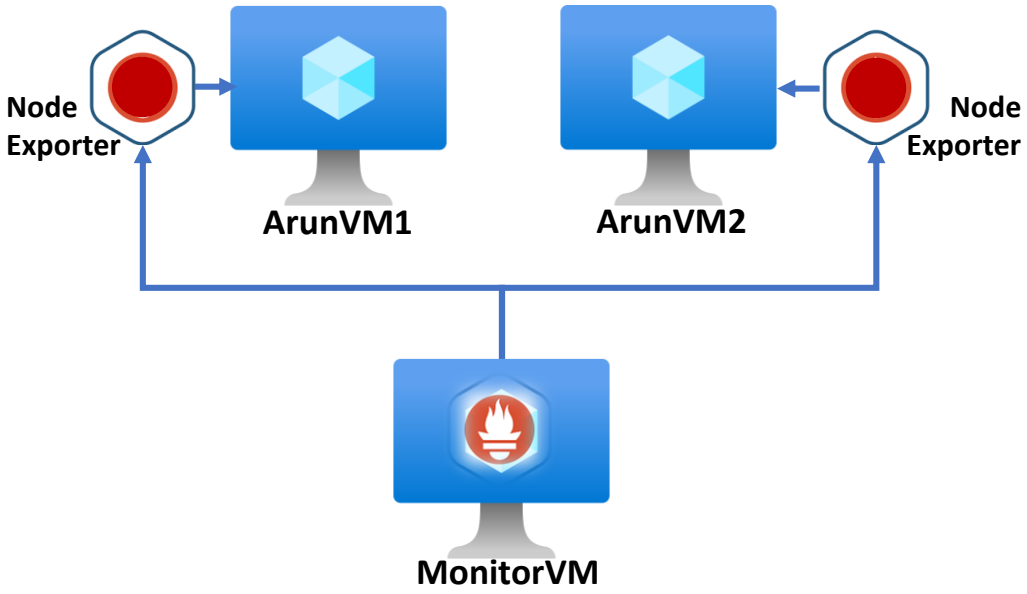
Install Node Exporter:
Download and install Node Exporter on each target VM to expose system metrics.

```
ArunVM1/  wget https://github.com/
prometheus/node_exporter/releases/download/
v1.5.0/node_exporter-1.5.0.linux-amd64.tar.gz

tar xvfz node_exporter-*.tar.gz

cd node_exporter-*

./node_exporter
```



Step 4: Verify the Setup

Access Prometheus:
Open your browser and go to http://<monitoring_vm_ip>:9090.
Check Targets:
Navigate to Status > Targets in the Prometheus UI to ensure your target VMs are being scraped.

Step 5: Visualize Metrics
Prometheus GUI: Dashboard is present but not customizable less controlled.

Solution for this Issue

Install Grafana:

Use Grafana to visualize Prometheus metrics. Install Grafana on the monitoring VM or another VM, and configure Prometheus as a data source.

Key Points to Consider

Scalability: Prometheus is designed to handle large-scale monitoring, but ensure your infrastructure can support the load.

Security: Secure your Prometheus and Grafana instances, especially if they are exposed to the internet.

Alerting: Configure alerting rules in Prometheus to get notified about critical issues.

Data Retention: Manage data retention policies to balance between storage costs and the need for historical data.

How To Install GRAFANA and Setup With PROMETHEUS

GRAFANA

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