# End-to-End Setup Guide for Node Exporter, Prometheus, and Grafana

# 1)Prerequisites

✅ You need a Linux VM   
✅ SSH access with sudo privileges.  
✅ Internet access to download packages.  
✅ Recommended: open firewall or security group for ports:

|  |  |  |
| --- | --- | --- |
| Service | Port | Description |
| Node Exporter | 9100 | System metrics |
| Prometheus | 9090 | Metrics dashboard |
| Grafana | 3000 | Visualization UI |

## 2) Install Node Exporter

Node Exporter collects system-level metrics (CPU, memory, disk, network).

### Step 2.1: Download & Extract

sudo wget <https://github.com/prometheus/node_exporter/releases/download/v1.8.1/node_exporter-1.8.1.linux-amd64.tar.gz>

sudo tar -xvf node\_exporter-1.8.1.linux-amd64.tar.gz

sudo mv node\_exporter-1.8.1.linux-amd64 /usr/local/bin/node\_exporter

sudo rm -f node\_exporter-1.8.1.linux-amd64.tar.gz

### Step 2.2: Create a dedicated user

sudo useradd --no-create-home --shell /bin/false nodeusr

### Step 2.3: Create systemd service file

sudo vim /etc/systemd/system/node\_exporter.service  
  
[Unit]  
Description=Prometheus Node Exporter  
After=network.target  
  
[Service]  
User=nodeusr  
ExecStart=/usr/local/bin/node\_exporter/node\_exporter  
Restart=always  
  
[Install]  
WantedBy=multi-user.target

### Step 2.4: Start & Enable

sudo systemctl daemon-reload  
sudo systemctl enable node\_exporter  
sudo systemctl start node\_exporter  
sudo systemctl status node\_exporter

### Step 2.5: Verify

curl http://<server-ip>:9100/metrics => from server

http://<server-ip>:9100/metrics => from browser

## 3. Install Prometheus

Prometheus scrapes and stores metrics from Node Exporter.

### Step 3.1: Download & Extract

sudo wget <https://github.com/prometheus/prometheus/releases/download/v2.55.1/prometheus-2.55.1.linux-amd64.tar.gz>

sudo tar -xvf prometheus-2.55.1.linux-amd64.tar.gz

sudo mv prometheus-2.55.1.linux-amd64 /usr/local/bin/Prometheus

sudo rm -f prometheus-2.55.1.linux-amd64.tar.gz

### Step 3.2: Create user & directories

sudo useradd --no-create-home --shell /bin/false promuser

sudo mkdir /etc/prometheus /var/lib/Prometheus

sudo chown promuser:promuser /etc/prometheus /var/lib/prometheus

### Step 3.3: Create config file

sudo vim /etc/prometheus/prometheus.yml  
  
global:  
 scrape\_interval: 15s  
  
scrape\_configs:  
 - job\_name: 'prometheus'  
 static\_configs:  
 - targets: ['localhost:9090']  
  
 - job\_name: 'node\_exporter'  
 static\_configs:  
 - targets: ['localhost:9100']

### Step 3.4: Create systemd service

sudo vim /etc/systemd/system/prometheus.service  
  
[Unit]  
Description=Prometheus Monitoring  
After=network.target  
  
[Service]  
User=promuser  
ExecStart=/usr/local/bin/prometheus/prometheus \  
 --config.file=/etc/prometheus/prometheus.yml \  
 --storage.tsdb.path=/var/lib/prometheus \  
 --web.console.templates=/usr/local/bin/prometheus/consoles \  
 --web.console.libraries=/usr/local/bin/prometheus/console\_libraries  
Restart=always  
  
[Install]  
WantedBy=multi-user.target

### Step 3.5: Start & Enable

sudo systemctl daemon-reload  
sudo systemctl enable prometheus  
sudo systemctl start prometheus  
sudo systemctl status prometheus

### Step 3.6: Verify

http://<server-ip>:9090

## 4. Install Grafana

Grafana visualizes Prometheus metrics on dashboards.

### Step 4.1: Install Grafana Enterprise 12.2.0

sudo yum install -y https://dl.grafana.com/grafana-enterprise/release/12.2.0/grafana-enterprise\_12.2.0\_17949786146\_linux\_amd64.rpm

### Step 4.2: Enable & Start

sudo systemctl daemon-reload  
sudo systemctl enable grafana-server  
sudo systemctl start grafana-server  
sudo systemctl status grafana-server

### Step 4.3: Verify

http://<server-ip>:3000  
  
Default credentials:  
Username: admin  
Password: admin  
(Change password when prompted.)

## 5. Configure Grafana to use Prometheus

1. Open Grafana → Connections → Data sources → Add data source  
2. Choose Prometheus  
3. URL → http://localhost:9090  
4. Click Save & Test  
5. Should show ✅ Data source is working

## Summary

|  |  |  |
| --- | --- | --- |
| Component | Port | Purpose |
| Node Exporter | 9100 | Collects host metrics |
| Prometheus | 9090 | Stores & scrapes metrics |
| Grafana | 3000 | Visualization dashboards |