

## PROJECT-2

Monitor and log application performance. Main objective will be how to collect and analyse data about an application's performance.

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### project review:

1. launch 2 separate instances -

1<sup>st</sup> instance install Prometheus , Node\_Exporter , grafana and open separate terminals to access

2<sup>nd</sup> instance install jenkins and access jenkins

2. Prometheus :9090

Node\_Exporter :9100

Grafana : 3000

3. In Prometheus terminal open **prometheus.yml** by **vi prometheus.yml**

And paste below code :

- job\_name: "jenkins"

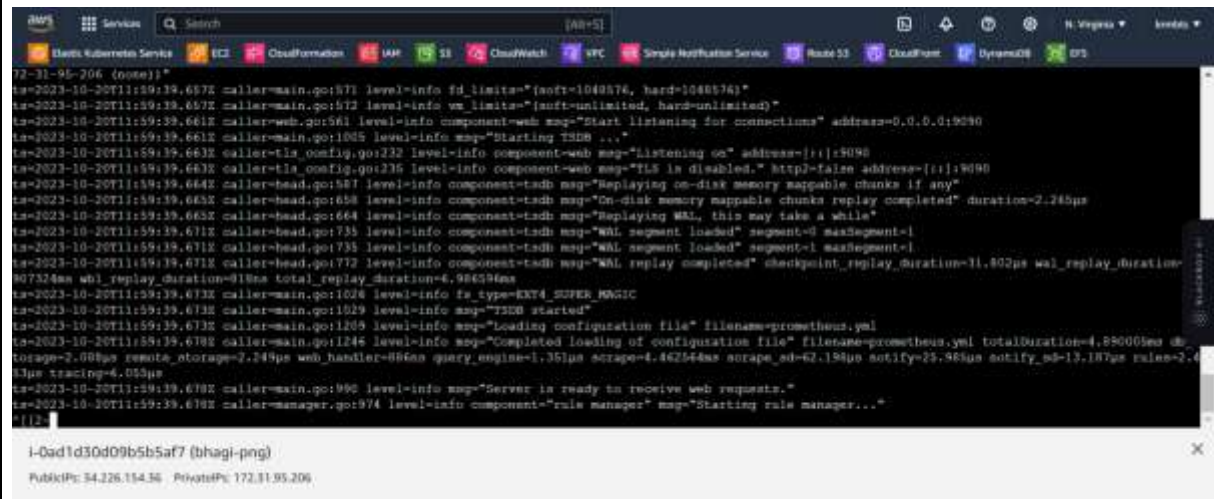
metrics\_path: /prometheus

static\_configs:

- targets: ['18.233.64.35:8080'] -----(give ur respective jenkins address)

4. Start prometheus by **./prometheus**

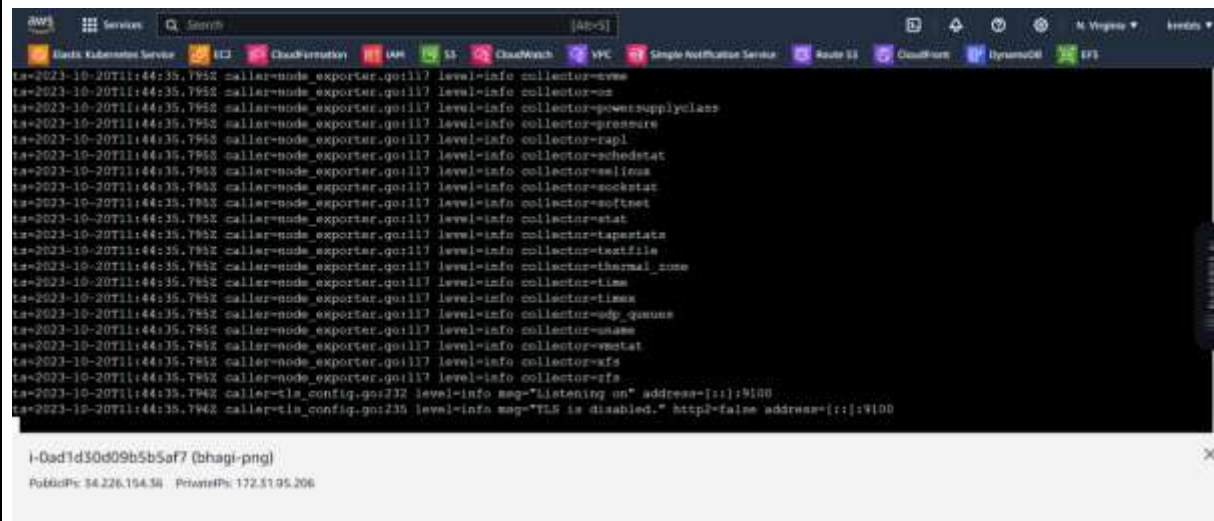
This is a Prometheus running terminal:



The screenshot shows a terminal window with a dark background and a light-colored text editor interface. The terminal displays the Prometheus startup logs, including the following lines:

```
ts=2023-10-20T11:59:19.657X caller=main.go:571 level=info fd_limits="[soft=1048576, hard=1048576]"
ts=2023-10-20T11:59:19.657X caller=main.go:572 level=info vm_limits="[soft-unlimited, hard-unlimited]"
ts=2023-10-20T11:59:19.661X caller=web.go:581 level=info component=web msg="Start listening for connections" address=0.0.0.0:9090
ts=2023-10-20T11:59:19.661X caller=main.go:1045 level=info msg="Starting TSDB ..."
ts=2023-10-20T11:59:19.663X caller=tsdb_config.go:232 level=info component=web msg="listening on" address=[::]:9090
ts=2023-10-20T11:59:19.663X caller=tsdb_config.go:232 level=info component=web msg="TLS is disabled." http2-false address=[::]:9090
ts=2023-10-20T11:59:19.664X caller=tsdb.go:587 level=info component=tsdb msg="Replaying on-disk memory mappable chunks if any"
ts=2023-10-20T11:59:19.665X caller=tsdb.go:658 level=info component=tsdb msg="On-disk memory mappable chunks replay completed" duration=2.285us
ts=2023-10-20T11:59:19.665X caller=tsdb.go:664 level=info component=tsdb msg="Replaying WAL, this may take a while"
ts=2023-10-20T11:59:19.671X caller=tsdb.go:735 level=info component=tsdb msg="WAL segment loaded" segment=0 maxsegment=1
ts=2023-10-20T11:59:19.671X caller=tsdb.go:735 level=info component=tsdb msg="WAL segment loaded" segment=1 maxsegment=1
ts=2023-10-20T11:59:19.671X caller=tsdb.go:772 level=info component=tsdb msg="WAL replay completed" checkpoint_replay_duration=31.802us wal_replay_duration=
NG7324ms wal_replay_duration=918ms total_replay_duration=6.986594ms
ts=2023-10-20T11:59:19.673X caller=main.go:1026 level=info fs_type=EXT4_SUPER_MAGIC
ts=2023-10-20T11:59:19.673X caller=main.go:1029 level=info msg="TSDB started"
ts=2023-10-20T11:59:19.673X caller=main.go:1209 level=info msg="Loading configuration file" filename=prometheus.yml
ts=2023-10-20T11:59:19.678X caller=main.go:1246 level=info msg="Completed loading of configuration file" filename=prometheus.yml totalDuration=4.880006ms db=
storage=2.088us remote_storage=2.244us web_handler=886ms query_engine=1.351us scrape=4.462544ms scrape_sd=62.198us notify=25.963us notify_sd=13.187us rules=2.4
31us tracing=4.053us
ts=2023-10-20T11:59:19.678X caller=main.go:990 level=info msg="Server is ready to receive web requests."
ts=2023-10-20T11:59:19.678X caller=manager.go:974 level=info component="rule manager" msg="Starting rule manager..."
```

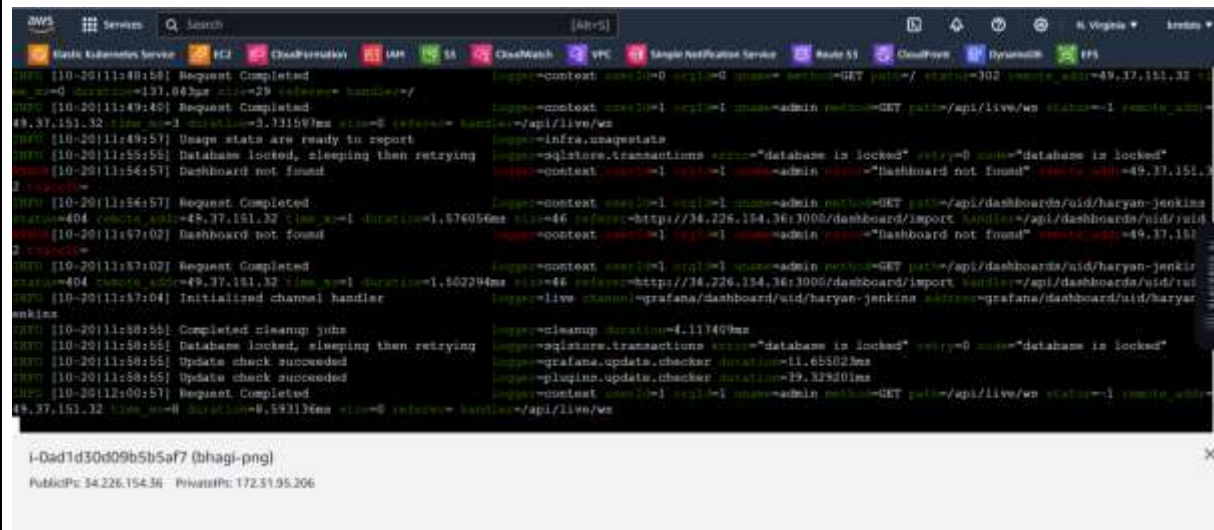
This is a Node\_Exporter running terminal:



The screenshot shows a terminal window with a dark background and a light-colored text editor interface. The terminal displays the Node\_Exporter startup logs, including the following lines:

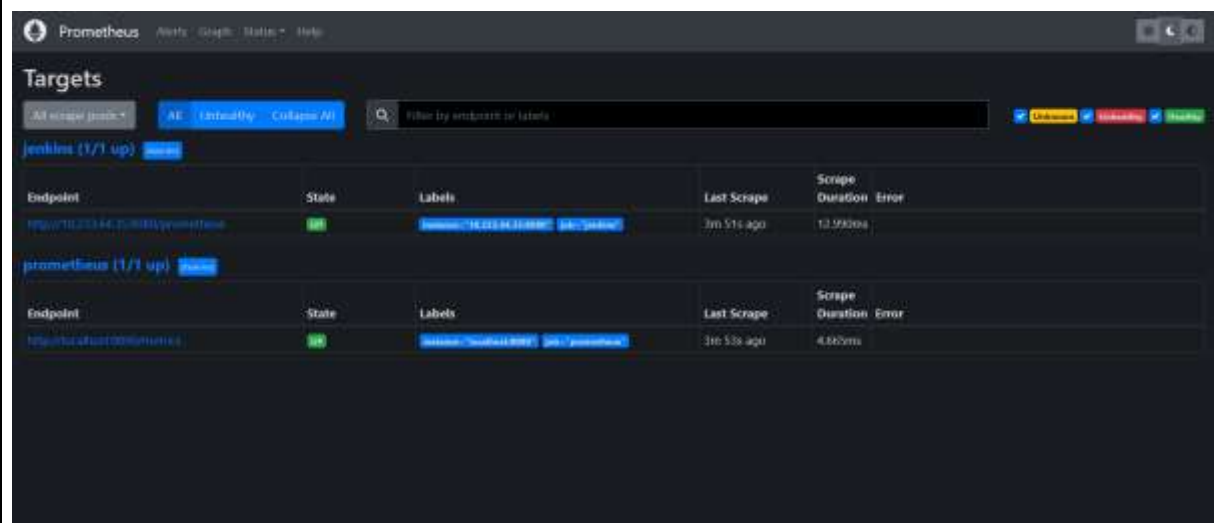
```
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=cveee
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=cpu
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=powersupplyclass
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=pressure
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=rapl
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=schedstat
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=sealinux
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=socketstat
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=softnet
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=stat
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=tapestats
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=textfile
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=thermal_zone
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=time
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=timex
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=udp_queues
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=uname
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=vmstat
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=xfs
ts=2023-10-20T11:44:35.795X caller=node_exporter.go:117 level=info collector=xfs
ts=2023-10-20T11:44:35.795X caller=tsdb_config.go:232 level=info msg="listening on" address=[::]:9100
ts=2023-10-20T11:44:35.795X caller=tsdb_config.go:235 level=info msg="TLS is disabled." http2-false address=[::]:9100
```

This is a GRAFANA running terminal:



```
[10-20|11:48:54] Request Completed
[10-20|11:49:40] Request Completed
[10-20|11:49:57] Usage stats are ready to report
[10-20|11:55:55] Database locked, sleeping then retrying
[10-20|11:56:57] Dashboard not found
[10-20|11:56:57] Request Completed
[10-20|11:57:02] Dashboard not found
[10-20|11:57:02] Request Completed
[10-20|11:57:04] Initialized channel handler
[10-20|11:58:55] Completed cleanup jobs
[10-20|11:58:55] Database locked, sleeping then retrying
[10-20|11:58:55] Update check succeeded
[10-20|11:58:55] Update check succeeded
[10-20|12:00:57] Request Completed
```

This is the Targets In Prometheus Dashboard When We Accessed :



Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
<strong>jenkins (1/1 up)</strong>					
http://10.233.44.2:8080/prometheus	UP	instance="10.233.44.2:8080" job="jenkins"	3m 51s ago	12.592ms	
<strong>prometheus (1/1 up)</strong>					
http://localhost:9090/metrics	UP	instance="localhost:9090" job="prometheus"	3m 53s ago	4.887ms	

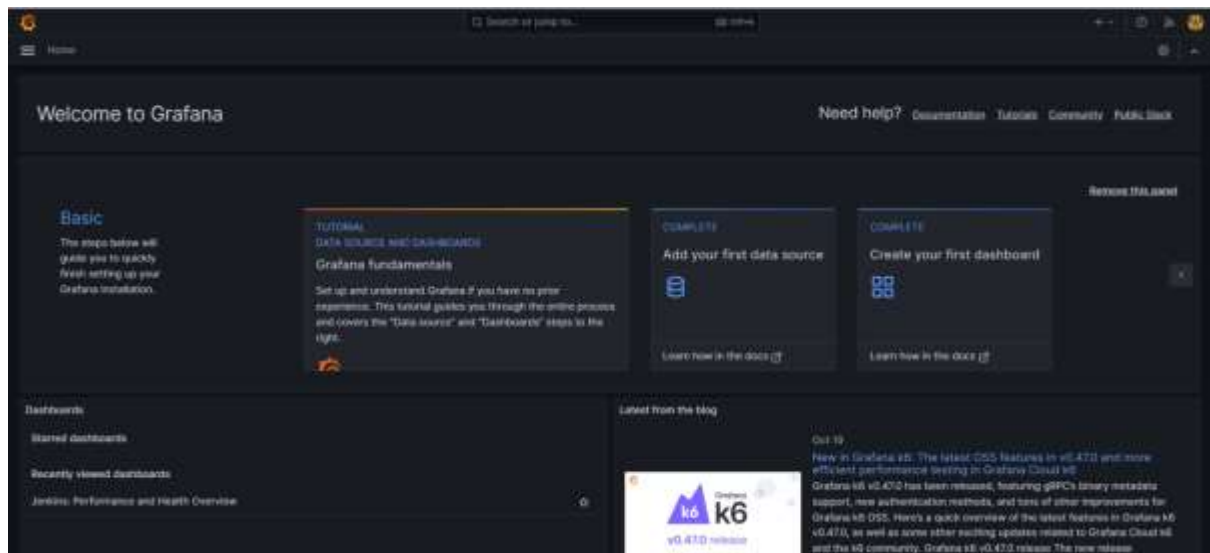
This is the node\_exporter when we accessed:

## Node Exporter

Metrics

```
# HELP go_gc_duration_seconds A summary of the pause duration of garbage collection cycles.
# TYPE go_gc_duration_seconds summary
go_gc_duration_seconds{quantile="0"} 0
go_gc_duration_seconds{quantile="0.25"} 0
go_gc_duration_seconds{quantile="0.5"} 0
go_gc_duration_seconds{quantile="0.75"} 0
go_gc_duration_seconds{quantile="1"} 0
go_gc_duration_seconds_sum 0
go_gc_duration_seconds_count 0
# HELP go_goroutines Number of goroutines that currently exist.
# TYPE go_goroutines gauge
go_goroutines 1
# HELP go_info Information about the Go environment.
# TYPE go_info gauge
go_info{version="go1.18.0"} 1
# HELP go_memstats_alloc_bytes Number of bytes allocated and still in use.
# TYPE go_memstats_alloc_bytes gauge
go_memstats_alloc_bytes 1.079964e06
# HELP go_memstats_alloc_bytes_total Total number of bytes allocated, even if freed.
# TYPE go_memstats_alloc_bytes_total counter
go_memstats_alloc_bytes_total 1.079964e06
# HELP go_memstats_buck_hash_sys_bytes Number of bytes used by the profiling bucket hash table.
# TYPE go_memstats_buck_hash_sys_bytes gauge
go_memstats_buck_hash_sys_bytes 1.446217e06
# HELP go_memstats_frees_total Total number of frees.
# TYPE go_memstats_frees_total counter
go_memstats_frees_total 712
# HELP go_memstats_gc_sys_bytes Number of bytes used for garbage collection system metadata.
# TYPE go_memstats_gc_sys_bytes gauge
go_memstats_gc_sys_bytes 1.08903e06
# HELP go_memstats_heap_alloc_bytes Number of heap bytes allocated and still in use.
# TYPE go_memstats_heap_alloc_bytes gauge
go_memstats_heap_alloc_bytes 1.07004e06
# HELP go_memstats_heap_idle_bytes Number of heap bytes waiting to be used.
# TYPE go_memstats_heap_idle_bytes gauge
go_memstats_heap_idle_bytes 1.588064e06
# HELP go_memstats_heap_inuse_bytes Number of heap bytes that are in use.
# TYPE go_memstats_heap_inuse_bytes gauge
go_memstats_heap_inuse_bytes 1.088064e06
# HELP go_memstats_heap_objects Number of allocated objects.
# TYPE go_memstats_heap_objects gauge
go_memstats_heap_objects 1100
# HELP go_memstats_heap_released_bytes Number of heap bytes released to OS.
# TYPE go_memstats_heap_released_bytes gauge
go_memstats_heap_released_bytes 1.508064e06
# HELP go_memstats_heap_sys_bytes Number of heap bytes obtained from system.
# TYPE go_memstats_heap_sys_bytes gauge
go_memstats_heap_sys_bytes 1.088064e06
# HELP go_memstats_last_gc_time_seconds Number of seconds since 1970 of last garbage collection.
# TYPE go_memstats_last_gc_time_seconds gauge
go_memstats_last_gc_time_seconds 0
```

This is grafana dashboard when we accessed



5. We have to import a dashboard of grafana by given a code (9964)

6. I used this command to increase a load in new terminal with the connection of this server [while true; do echo;done] in final GRAFANA output.

7. A computer analysis shows cpu use, memory usage, and free memory remaining in jenkins

This is the final output in grafana:



