

LAB-01

1-what is different http status code and explain meaning of each of them ?

- *1xx informational response* - the request was received, continuing process
- *2xx successful* - the request was successfully received, understood, and accepted
- *3xx redirection* - further action needs to be taken in order to complete the request
- *4xx client error* - the request contains bad syntax or cannot be fulfilled
- *5xx server error* - the server failed to fulfil an apparently valid request

2-What database is used by Prometheus?

Prometheus has a sophisticated local storage subsystem. For indexes, it uses **LevelDB**

3-what is the difference between different metrics types (counter, gauge, histogram)?

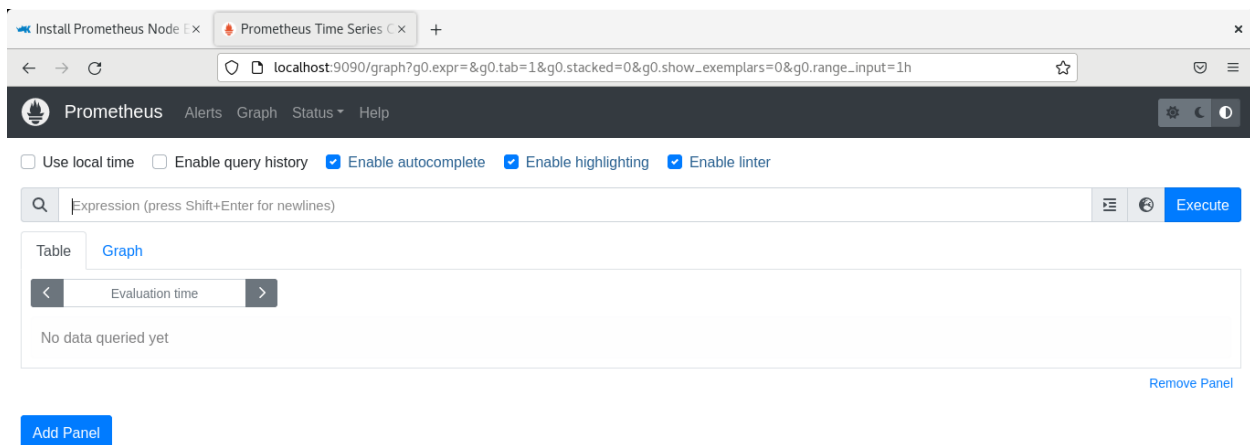
- **Counters:** The counter metric type is used for any value that increases, such as a request count or error count. Importantly, a counter should never be used for a value that can decrease. (How many events occur?)
- **Gauge:** The gauge metric type can be used for values that go down as well as up, such as current memory usage or the number of items in a queue. (the current state)
- **Histograms:** The histogram metric type measures the frequency of value observations that fall into specific predefined buckets. (how long the event take?)

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4- install prometheus on your localhost or on server in any cloud provider?

```
mohamed@Azzam:~$ sudo systemctl status prometheus
● prometheus.service - Prometheus
   Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2023-02-21 22:18:59 EET; 4min 44s ago
     Docs: https://prometheus.io/docs/introduction/overview/
   Main PID: 11565 (prometheus)
      Tasks: 8 (limit: 12213)
     Memory: 56.4M
    CGroup: /system.slice/prometheus.service
           └─11565 /usr/local/bin/prometheus --config.file=/etc/prometheus/prometheus.yml --storage.tsdb.path=/var/lib/prometheus --web.console.template.dir=/etc/prometheus/webconsole

Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.394Z caller=head.go:685 level=info component=tsdb msg="WAL segment loaded" segment=0
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.495Z caller=head.go:685 level=info component=tsdb msg="WAL segment loaded" segment=1
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.495Z caller=head.go:685 level=info component=tsdb msg="WAL segment loaded" segment=2
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.495Z caller=head.go:722 level=info component=tsdb msg="WAL replay completed" checkpoint=1
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.498Z caller=main.go:1014 level=info fs_type=XFS_SUPER_MAGIC
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.498Z caller=main.go:1017 level=info msg="TSDB started"
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.498Z caller=main.go:1197 level=info msg="Loading configuration file" filename=/etc/prometheus/prometheus.yml
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.601Z caller=main.go:1234 level=info msg="Completed loading of configuration file" filename=/etc/prometheus/prometheus.yml
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.601Z caller=main.go:978 level=info msg="Server is ready to receive web requests."
Feb 21 22:18:59 Azzam prometheus[11565]: ts=2023-02-21T20:18:59.601Z caller=manager.go:974 level=info component="rule manager" msg="Starting rule manager"
lines 1-20/20 (END)
```



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5-add any new target to prometheus.yaml file and apply any query on it using promql language

The screenshot shows the Prometheus web interface at localhost:9090/targets. The 'Targets' page lists three scrape pools, all of which are 'UP'.

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
c-advisor (1/1 up) show less					
http://localhost:8080/metrics	UP	instance="localhost:8080" job="c-advisor"	11.223s ago	206.731ms	
node-exporter (1/1 up) show less					
http://localhost:9100/metrics	UP	instance="localhost:9100" job="node-exporter"	23.93s ago	19.030ms	
prometheus (1/1 up) show less					

The screenshot shows the Prometheus web interface at localhost:9090/graph. A query for 'container_cpu_load_average_10s' has been executed, showing a single data point in the graph view.

Query: `container_cpu_load_average_10s {image="gcr.io/cadvisor/cadvisor"}`

Graph settings: Load time: 115ms, Resolution: 14s, Result series: 1

Graph data: container_cpu_load_average_10s (id="/docker/c8e8bcbe92c6beccc189d4cfd9c7d5b12392a61f2bfd76d1e29f99cf968b1a", image="gcr.io/cadvisor/cadvisor", instance="localhost:8080", job="c-advisor", name="cadvisor") 0

Buttons: [Add Panel](#), [Remove Panel](#)