

Lab1 prometheus

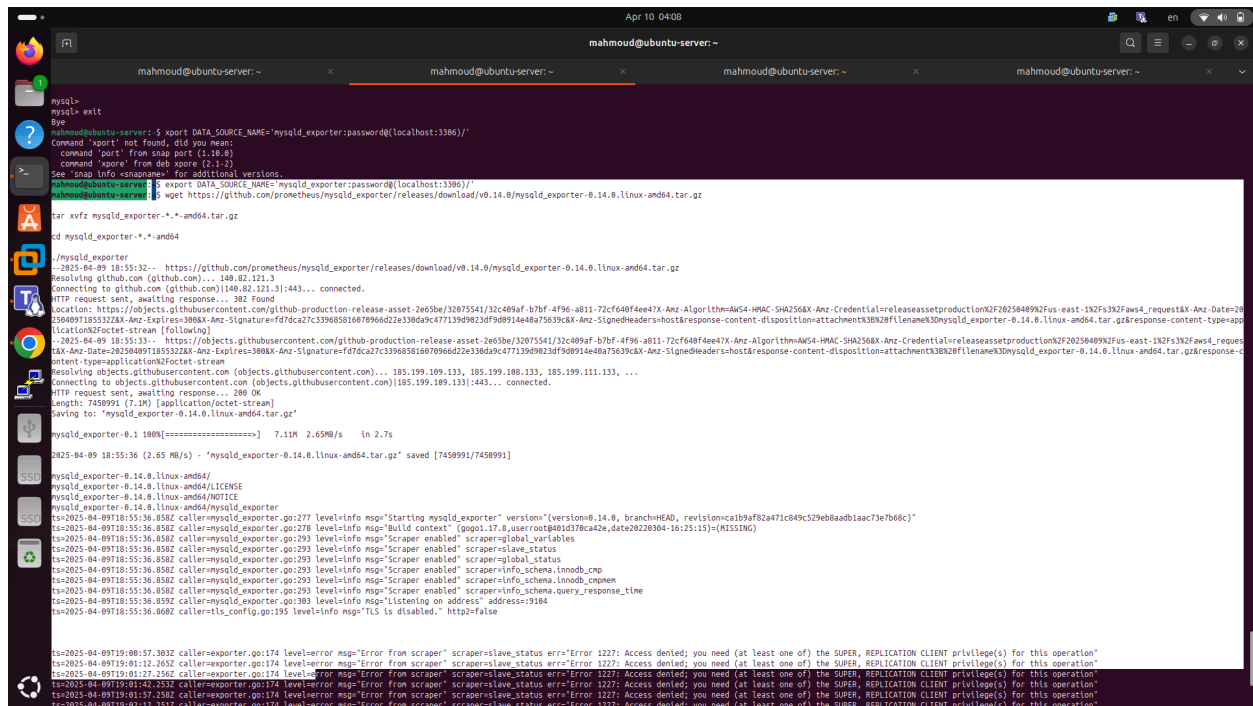
1-what is differnet http status code and explain meaning of each of them ?

- **1xx** → Informational (request still processing)
- **2xx** → Success (request completed successfully)
- **3xx** → Redirection (further action needed)
- **4xx** → Client error (request was invalid)
- **5xx** → Server error (server failed to process a valid request)

2-What database is used by Prometheus? time-series database (TSDB)

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

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



```
mahmoud@ubuntu-server: ~  
mysql> mysql> exit  
Bye  
mahmoud@ubuntu-server: ~$ xport DATA_SOURCE_NAME=mysql_exporter:password@(localhost:3306)/'  
Command 'xport' not found, did you mean:  
command 'port' from snap port (1.10.0)  
command 'xport' from deb xport (2.11-2)  
See 'snap info <snapname>' for additional versions.  
mahmoud@ubuntu-server: ~$ export DATA_SOURCE_NAME=mysql_exporter:password@(localhost:3306)/'  
mahmoud@ubuntu-server: ~$ wget https://github.com/prometheus/mysql_exporter/releases/download/v0.14.0/mysql_exporter-0.14.0.linux-amd64.tar.gz  
tar xvfz mysql_exporter-*.tar.gz  
cd mysql_exporter-*.tar.gz  
./mysql_exporter  
- 2025-04-09 18:55:32... https://github.com/prometheus/mysql_exporter/releases/download/v0.14.0/mysql_exporter-0.14.0.linux-amd64.tar.gz  
Resolving github.com (github.com)... 148.82.121.3  
Connecting to github.com (github.com)[148.82.121.3]:443... connected.  
HTTP request sent, awaiting response... 302 Found  
location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/32075541/32c409af-b7bf-4f96-ab11-72cf640f4ee4?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250409%2Fus-east-1%2F%2Faws4_request&X-Amz-Date=20250409T185532Z&X-Amz-Expires=3600&X-Amz-Signature=fdf6ca27c339683816070966d2e3386d9c477139d98236f508914e40a75639c&X-Amz-SignedHeaders=host&response-content-disposition=attachment;filename=mysql_exporter-0.14.0.linux-amd64.tar.gz&response-content-type=application/octet-stream [following]  
- 2025-04-09 18:55:33... https://objects.githubusercontent.com/github-production-release-asset-2e65be/32075541/32c409af-b7bf-4f96-ab11-72cf640f4ee4?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250409%2Fus-east-1%2F%2Faws4_request&X-Amz-Date=20250409T185532Z&X-Amz-Expires=3600&X-Amz-Signature=fdf6ca27c339683816070966d2e3386d9c477139d98236f508914e40a75639c&X-Amz-SignedHeaders=host&response-content-disposition=attachment;filename=mysql_exporter-0.14.0.linux-amd64.tar.gz&response-content-type=application/octet-stream  
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.109.133, 185.199.180.133, 185.199.111.133, ...  
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)[185.199.109.133]:443... connected.  
HTTP request sent, awaiting response... 200 OK  
length: 7450991 (7.1M) [application/octet-stream]  
Saving to: 'mysql_exporter-0.14.0.linux-amd64.tar.gz'  
mysql_exporter-0.1 100%[=====] 7.11M 2.65MB/s in 2.7s  
2025-04-09 18:55:36 (2.65 MB/s) - 'mysql_exporter-0.14.0.linux-amd64.tar.gz' saved [7450991/7450991]  
mysql_exporter-0.14.0.linux-amd64/  
mysql_exporter-0.14.0.linux-amd64/LICENSE  
mysql_exporter-0.14.0.linux-amd64/NOTICE  
mysql_exporter-0.14.0.linux-amd64/mysql_exporter  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:277 level=info msg="Starting mysql_exporter" version="(version=0.14.0, branch=HEAD, revision=ca1b9ef92a471c49c529eb8aadbac73e7b66c)"  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:278 level=info msg="Build context" (goos=linux, user=root@010d378ca2e, date=20250409-16:25:15)=(MISSING)  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:293 level=info msg="Scrape enabled" scrapers=global_variables  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:293 level=info msg="Scrape enabled" scrapers=slave_status  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:293 level=info msg="Scrape enabled" scrapers=global_status  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:293 level=info msg="Scrape enabled" scrapers=info_schema_innodb_cmp  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:293 level=info msg="Scrape enabled" scrapers=info_schema_innodb_cmpmen  
ts=2025-04-09T18:55:36.858Z caller=mysql_exporter.go:293 level=info msg="Scrape enabled" scrapers=info_schema_query_response_time  
ts=2025-04-09T18:55:36.859Z caller=mysql_exporter.go:303 level=info msg="Listening on address" address=:9184  
ts=2025-04-09T18:55:36.860Z caller=tls_config.go:195 level=info msg="TLS is disabled." http2=false  
ts=2025-04-09T19:00:57.303Z caller=exporter.go:174 level=error msg="Error from scraper" scrapers=slave_status err="Error 1227: Access denied; you need (at least one of) the SUPER, REPLICATION CLIENT privilege(s) for this operation"  
ts=2025-04-09T19:01:12.265Z caller=exporter.go:174 level=error msg="Error from scraper" scrapers=slave_status err="Error 1227: Access denied; you need (at least one of) the SUPER, REPLICATION CLIENT privilege(s) for this operation"  
ts=2025-04-09T19:01:27.250Z caller=exporter.go:174 level=error msg="Error from scraper" scrapers=slave_status err="Error 1227: Access denied; you need (at least one of) the SUPER, REPLICATION CLIENT privilege(s) for this operation"  
ts=2025-04-09T19:01:42.235Z caller=exporter.go:174 level=error msg="Error from scraper" scrapers=slave_status err="Error 1227: Access denied; you need (at least one of) the SUPER, REPLICATION CLIENT privilege(s) for this operation"  
ts=2025-04-09T19:01:57.250Z caller=exporter.go:174 level=error msg="Error from scraper" scrapers=slave_status err="Error 1227: Access denied; you need (at least one of) the SUPER, REPLICATION CLIENT privilege(s) for this operation"  
ts=2025-04-09T19:02:12.251Z caller=exporter.go:174 level=error msg="Error from scraper" scrapers=slave_status err="Error 1227: Access denied; you need (at least one of) the SUPER, REPLICATION CLIENT privilege(s) for this operation"
```

```
mahmoud@ubuntu-server: ~  
mahmoud@ubuntu-server:~$ sudo docker ps  
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES  
1b91915654b9   gcr.io/cadvisor/cadvisor   "/usr/bin/cadvisor -..."   27 minutes ago   Up 27 minutes (healthy)   0.0.0.0:8080->8080/tcp, [::]:8080->8080/tcp   cadvisor  
9929a6798a91   httpd         "httpd-foreground"        30 minutes ago   Up 29 minutes              80/tcp                                         pedantic_sinoussi  
3a8d18bee76f   nginx         "/docker-entrypoint..."   30 minutes ago   Up 30 minutes              80/tcp                                         naughty_rhodes  
mahmoud@ubuntu-server:~$
```

```
# - "first_rules.yml"  
# - "second_rules.yml"  
  
# A scrape configuration containing exactly one endpoint to scrape:  
# Here it's Prometheus itself.  
scrape_configs:  
  # The job name is added as a label 'job=<job_name>' to any timeseries scraped from this config.  
  - job_name: "prometheus"  
  
    # metrics_path defaults to '/metrics'  
    # scheme defaults to 'http'.  
  
    static_configs:  
      - targets: ["localhost:9090"]  
  
  - job_name: "docker"  
  
    # metrics_path defaults to '/metrics'  
    # scheme defaults to 'http'.  
  
    static_configs:  
      - targets: ["localhost:9100"]  
  
  - job_name: "cadvisor"  
  
    # metrics_path defaults to '/metrics'  
    # scheme defaults to 'http'.  
  
    static_configs:  
      - targets: ["localhost:8080"]  
  
  - job_name: "mysql-exporter"  
  
    # metrics_path defaults to '/metrics'  
    # scheme defaults to 'http'.  
  
    static_configs:  
      - targets: ["localhost:9104"]  
  
"/etc/prometheus/prometheus.yml" 57L, 1419B 57/0-1 Bot
```

Apr 10 04:10

prometheus-demo/data/ Prometheus Time Series 192.168.15.154:9100/metrics 09 Apr.mp4

Not secure 192.168.15.154:9090/targets

Prometheus Alerts Graph Status Help

Targets

All Unhealthy Collapse All

Filter by endpoint or labels

cadvisor (1/1 up) [show logs](#)

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:8080/metrics	UP	instance="localhost:8080" job="cadvisor"	7.662s ago	133.988ms	

docker (1/1 up) [show logs](#)

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9100/metrics	UP	instance="localhost:9100" job="docker"	4.861s ago	68.366ms	

mysql-exporter (1/1 up) [show logs](#)

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9104/metrics	UP	instance="localhost:9104" job="mysql-exporter"	8.590s ago	144.781ms	

prometheus (1/1 up) [show logs](#)

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090" job="prometheus"	4.353s ago	25.548ms	

Apr 10 04:10

prometheus-demo/data/ Prometheus Time Series 192.168.15.154:9100/metrics 09 Apr.mp4

Not secure 192.168.15.154:9100/metrics

```
node_netstat_Udp_NoPorts 40
# HELP node_netstat_Udp_OutDatagrams Statistic UdpOutDatagrams.
# TYPE node_netstat_Udp_OutDatagrams untyped
node_netstat_Udp_OutDatagrams 304
# HELP node_netstat_Udp_RcvbufErrors Statistic UdpRcvbufErrors.
# TYPE node_netstat_Udp_RcvbufErrors untyped
node_netstat_Udp_RcvbufErrors 0
# HELP node_netstat_Udp_SndbufErrors Statistic UdpSndbufErrors.
# TYPE node_netstat_Udp_SndbufErrors untyped
node_netstat_Udp_SndbufErrors 0
# HELP node_network_address_assign_type address_assign_type value of /sys/class/net/<iface>.
# TYPE node_network_address_assign_type gauge
node_network_address_assign_type(device="docker0") 3
node_network_address_assign_type(device="ens33") 0
node_network_address_assign_type(device="lo") 0
# HELP node_network_carrier_carrier value of /sys/class/net/<iface>.
# TYPE node_network_carrier gauge
node_network_carrier(device="docker0") 0
node_network_carrier(device="ens33") 1
node_network_carrier(device="lo") 1
# HELP node_network_carrier_changes_total carrier_changes_total value of /sys/class/net/<iface>.
# TYPE node_network_carrier_changes_total counter
node_network_carrier_changes_total(device="docker0") 1
node_network_carrier_changes_total(device="ens33") 2
node_network_carrier_changes_total(device="lo") 0
# HELP node_network_carrier_down_changes_total carrier_down_changes_total value of /sys/class/net/<iface>.
# TYPE node_network_carrier_down_changes_total counter
node_network_carrier_down_changes_total(device="docker0") 1
node_network_carrier_down_changes_total(device="ens33") 1
node_network_carrier_down_changes_total(device="lo") 0
# HELP node_network_carrier_up_changes_total carrier_up_changes_total value of /sys/class/net/<iface>.
# TYPE node_network_carrier_up_changes_total counter
node_network_carrier_up_changes_total(device="docker0") 0
node_network_carrier_up_changes_total(device="ens33") 1
node_network_carrier_up_changes_total(device="lo") 0
# HELP node_network_device_id device_id value of /sys/class/net/<iface>.
# TYPE node_network_device_id gauge
node_network_device_id(device="docker0") 0
node_network_device_id(device="ens33") 0
node_network_device_id(device="lo") 0
# HELP node_network_dormant dormant value of /sys/class/net/<iface>.
# TYPE node_network_dormant gauge
node_network_dormant(device="docker0") 0
node_network_dormant(device="ens33") 0
node_network_dormant(device="lo") 0
# HELP node_network_flags flags value of /sys/class/net/<iface>.
# TYPE node_network_flags gauge
node_network_flags(device="docker0") 4099
node_network_flags(device="ens33") 4099
```

Apr 10 04:18

prometheus-demo/data/ x Prometheus Time Series x 192.168.15.154:9100/m... x 09 Apr.mp4 x +

← → Not secure 192.168.15.154:9090/graph?g0.expr=prometheus_http_requests_total&g0.tab=1&g0.stacked=0&g0.show_exemplars=0&g0.range_input=1h

Prometheus Alerts Graph Status Help

☐ Use local time ☐ Enable query history ☒ Enable autocomplete ☒ Enable highlighting ☒ Enable linter

prometheus_http_requests_total

Execute

Table Graph

Load time: 38ms Resolution: 14s Result series: 10

Evaluation time

prometheus_http_requests_total{code="200", handler="/-/ready", instance="localhost:9090", job="prometheus"}	6
prometheus_http_requests_total{code="200", handler="/api/v1/label/name/values", instance="localhost:9090", job="prometheus"}	3
prometheus_http_requests_total{code="200", handler="/api/v1/query", instance="localhost:9090", job="prometheus"}	46
prometheus_http_requests_total{code="200", handler="/api/v1/query_range", instance="localhost:9090", job="prometheus"}	1
prometheus_http_requests_total{code="200", handler="/api/v1/targets", instance="localhost:9090", job="prometheus"}	7
prometheus_http_requests_total{code="200", handler="/favicon.ico", instance="localhost:9090", job="prometheus"}	6
prometheus_http_requests_total{code="200", handler="/graph", instance="localhost:9090", job="prometheus"}	1
prometheus_http_requests_total{code="200", handler="/metrics", instance="localhost:9090", job="prometheus"}	64
prometheus_http_requests_total{code="200", handler="/static/filepath", instance="localhost:9090", job="prometheus"}	18
prometheus_http_requests_total{code="200", handler="/targets", instance="localhost:9090", job="prometheus"}	5

Remove Panel

Add Panel