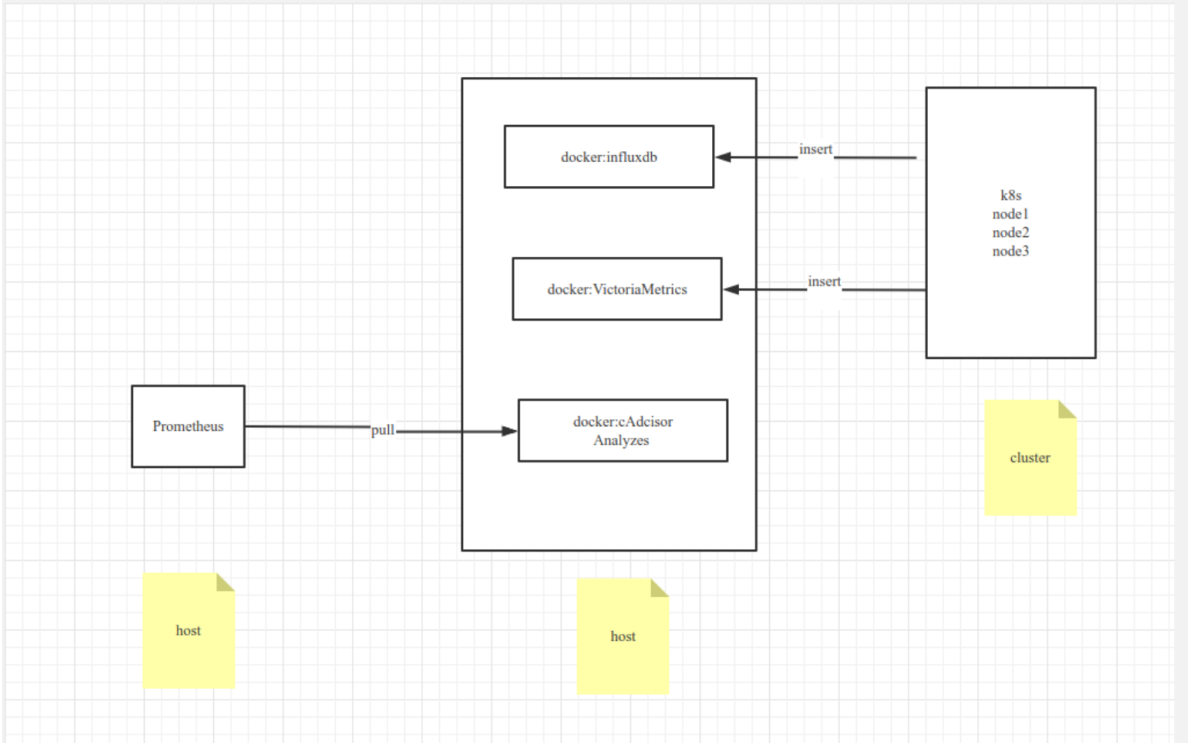
介绍

在hostA上使用docker标准安装时序数据库 Influxdb 和 VictoriaMetrics，然后使用docker安装一个容器性能分析工具 cAdvisor 来采集容器运行时的相关指标。



环境

- hostA: 178.104.163.175 2c 4g 服务：cadvisor、influxdb、VictoriaMetrics
- hostB: 178.104.163.111 2c 4g 服务：prometheus
- k8s集群：178.104.163.88

开始

- install cadvisor

```
docker run -d \
    --name cadvisor \
    -p 8080:8080 \
    -v /:/rootfs:ro \
    -v /var/run/:/var/run/:rw \
    -v /sys/:/sys/:ro \
    -v /var/lib/docker/:/var/lib/docker/:ro \
    -v /dev/disk/:/dev/disk/:ro \
    google/cadvisor:latest
```

- install influxdb

```
docker run -p 8086:8086 -d \
      --name influxdb \
      -v influxdb:/var/lib/influxdb \
      influxdb:1.8
```

```
docker run -p 8087:8086 -d \
      --name influxar \
      -v /root/influxar:/var/lib/influxdb \
      harbor.archeros.cn/library/influxdb:v1.6.0_cluster


docker run -p 8086:8086 -d \
      -v influxdb:/var/lib/influxdb \
      -v influxdb2:/var/lib/influxdb2 \
      -e DOCKER_INFLUXDB_INIT_MODE=upgrade \
      -e DOCKER_INFLUXDB_INIT_USERNAME=root \
      -e DOCKER_INFLUXDB_INIT_PASSWORD=123456@qwe \
      -e DOCKER_INFLUXDB_INIT_ORG=my-org \
      -e DOCKER_INFLUXDB_INIT_BUCKET=my-bucket \
      influxdb:2.3

export INFLUX_USERNAME=root
export INFLUX_PASSWORD=123456@qwe
export DOCKER_INFLUXDB_INIT_USERNAME=root
export DOCKER_INFLUXDB_INIT_PASSWORD=123456@qwe

influx config create --config-name config01 \
--host-url http://178.104.163.111:8086 \
--org my-org \
--token POPKjIwNmKKBga0CNrDWV4LlnEMY-
zcz6F79fYa8yTpHOBz72rxtYUJZ1kXiCsaMvWjrx57nkCHFKiXvdyuqGg== \
--active

influx write  --bucket my-bucket --precision s "m v=2 $(date +%s)"
```

- install VictoriaMetrics

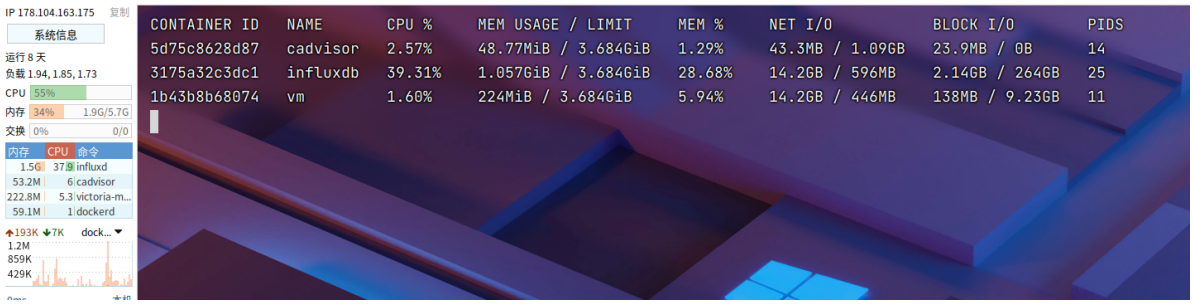
```
docker run -it -d \
    --name vm \
    -v /root/victoria-metrics-data:/victoria-metrics-data \
    -p 8428:8428 \
    victoriametrics/victoria-metrics:latest
```

- install prometheus

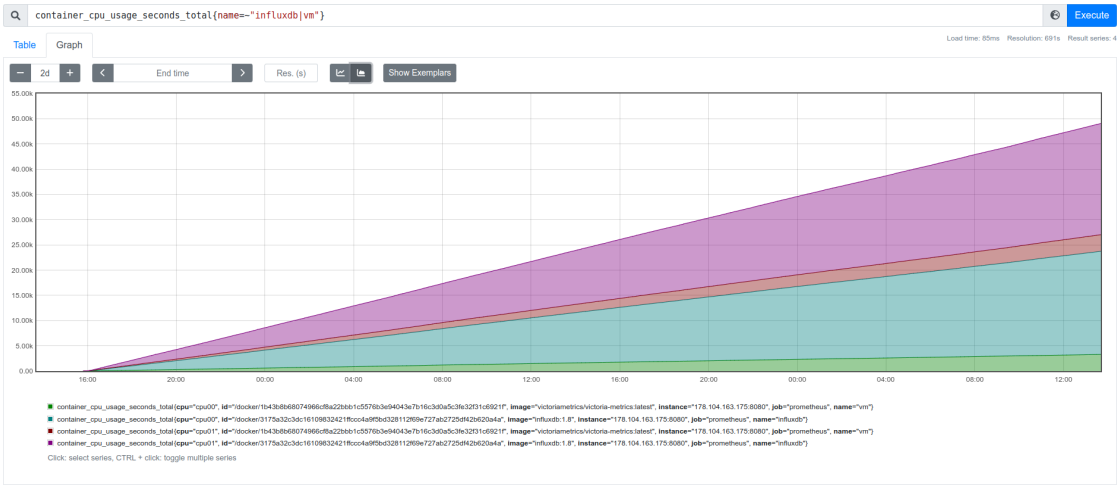
```
docker run \
    -p 9090:9090 \
    -v /root/prometheus-2.36.2.linux-
amd64/prometheus.yml:/etc/prometheus/prometheus.yml \
    prom/prometheus

将cadvisor的地址 178.104.163.175:8080 添加进prometheus.yml
```

测试结果

运行时间46小时

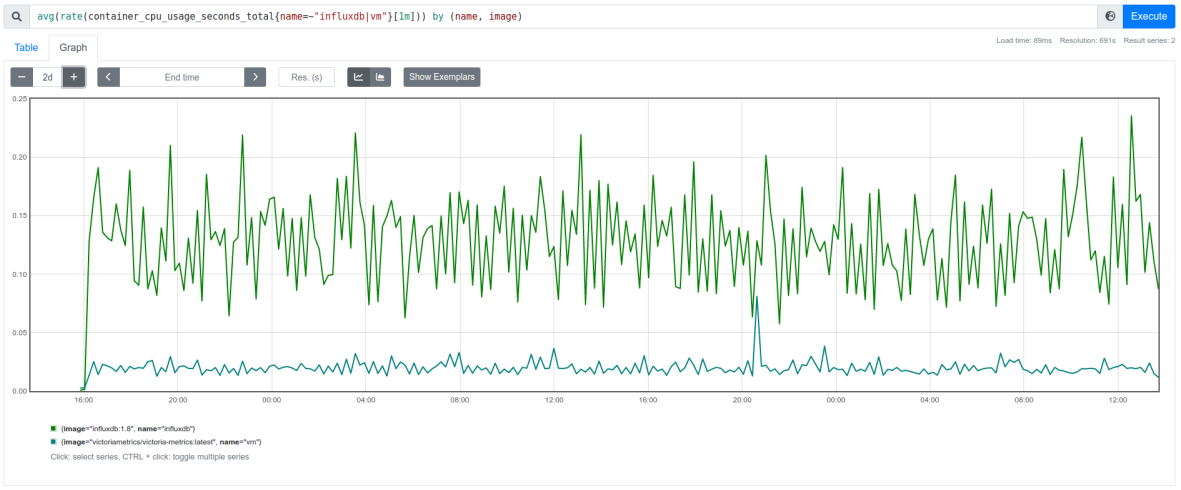


- CPU

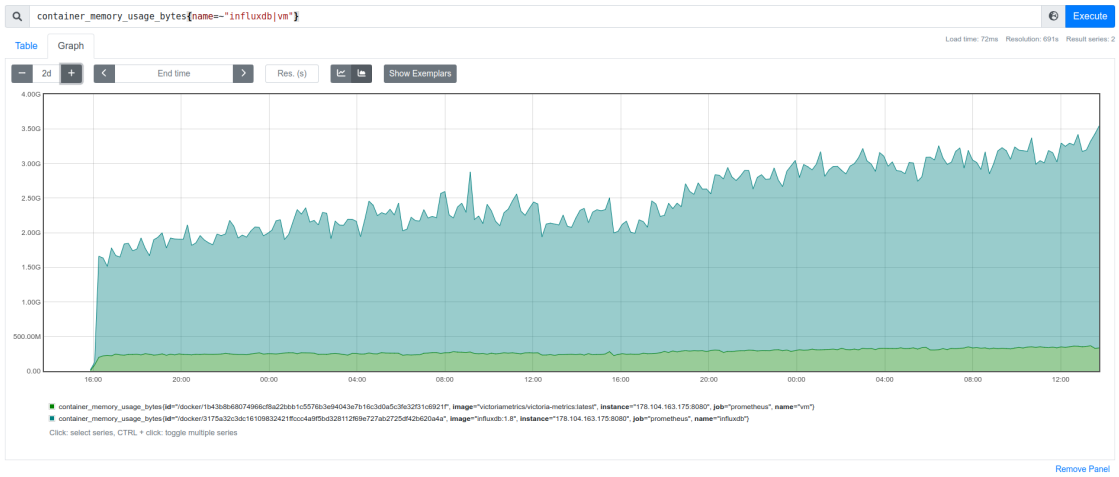


Add Panel

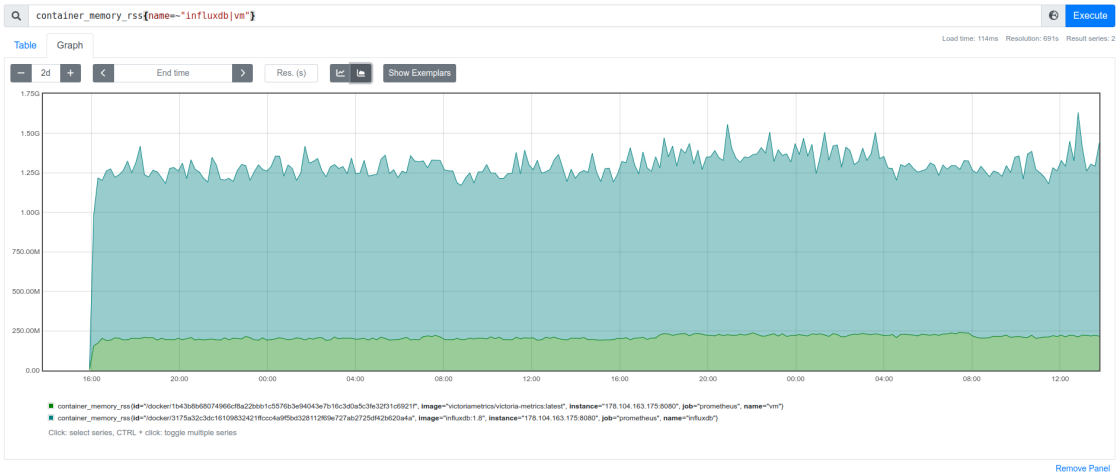
使用率图表



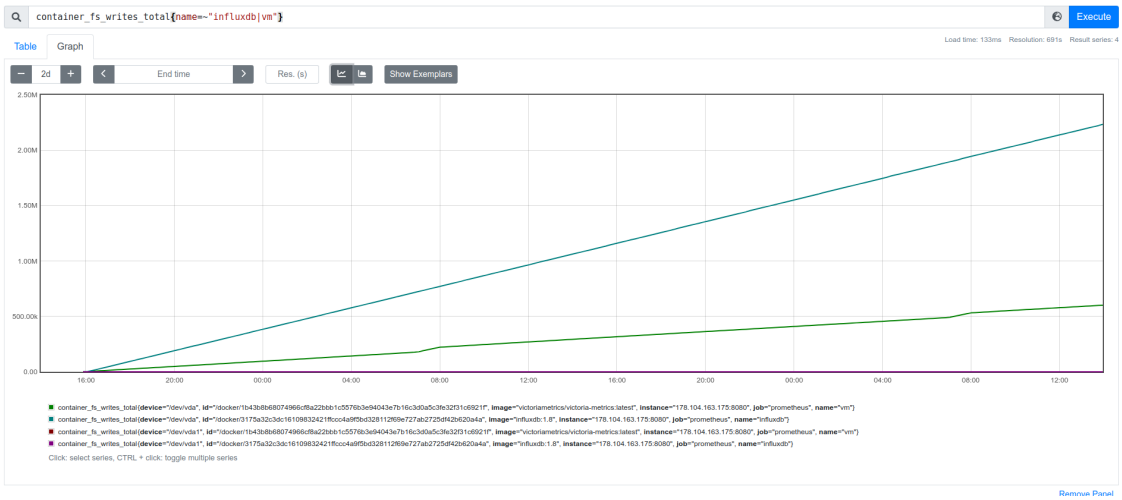
- 内存

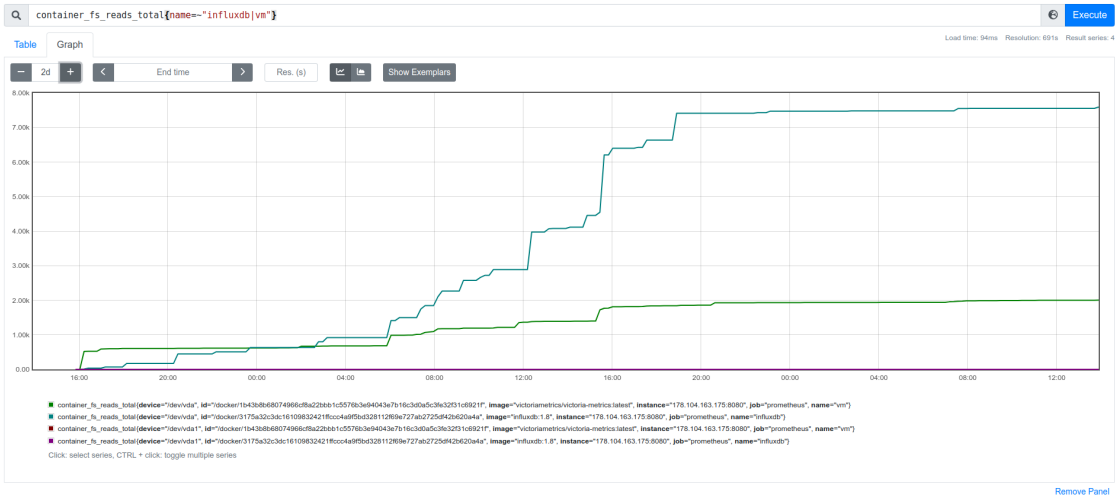


rss


container_memory_rss{name=~"influxdb|vm"}
Execute
Table
Graph
Load time: 114ms
Resolution: 691s
Result series: 2
2d
End time
Res. (s)
Show Exemplars
1.75G
1.50G
1.25G
1.00G
750.00M
500.00M
250.00M
0.00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
container_memory_rss{id="/docker/1b43b8b68074966cf8a22bbb1c5576b3e94043e7b16c3d0a5c3fe32f31c6921f", image="victoriametrics/victoria-metrics:latest", instance="178.104.163.175:8080", job="prometheus", name="vm"}
container_memory_rss{id="/docker/3175a32c3dc1610983242 1ffccc4a9f5bd328112f69e727ab2725df42b620a4a", image="influxdb:1.8", instance="178.104.163.175:8080", job="prometheus", name="influxdb"}
Click: select series, CTRL + click: toggle multiple series
Remove Panel

- 磁盘


container_fs_writes_total{name=~"influxdb|vm"}
Execute
Table
Graph
Load time: 133ms
Resolution: 691s
Result series: 4
2d
End time
Res. (s)
Show Exemplars
2.50M
2.00M
1.50M
1.00M
500.00k
0.00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
container_fs_writes_total{device="/dev/vda", id="/docker/1b43b8b68074966cf8a22bbb1c5576b3e94043e7b16c3d0a5c3fe32f31c6921f", image="victoriametrics/victoria-metrics:latest", instance="178.104.163.175:8080", job="prometheus", name="vm"}
container_fs_writes_total{device="/dev/vda", id="/docker/3175a32c3dc1610983242 1ffccc4a9f5bd328112f69e727ab2725df42b620a4a", image="influxdb:1.8", instance="178.104.163.175:8080", job="prometheus", name="influxdb"}
container_fs_writes_total{device="/dev/vda1", id="/docker/1b43b8b68074966cf8a22bbb1c5576b3e94043e7b16c3d0a5c3fe32f31c6921f", image="victoriametrics/victoria-metrics:latest", instance="178.104.163.175:8080", job="prometheus", name="vm"}
container_fs_writes_total{device="/dev/vda1", id="/docker/3175a32c3dc1610983242 1ffccc4a9f5bd328112f69e727ab2725df42b620a4a", image="influxdb:1.8", instance="178.104.163.175:8080", job="prometheus", name="influxdb"}
Click: select series, CTRL + click: toggle multiple series
Remove Panel


container_fs_reads_total{name=~"influxdb|vm"}
Execute
Table
Graph
Load time: 94ms
Resolution: 691s
Result series: 4
2d
End time
Res. (s)
Show Exemplars
8.00k
7.00k
6.00k
5.00k
4.00k
3.00k
2.00k
1.00k
0.00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
container_fs_reads_total{device="/dev/vda", id="/docker/1b43b8b68074966cf8a22bbb1c5576b3e94043e7b16c3d0a5c3fe32f31c6921f", image="victoriametrics/victoria-metrics:latest", instance="178.104.163.175:8080", job="prometheus", name="vm"}
container_fs_reads_total{device="/dev/vda", id="/docker/3175a32c3dc1610983242 1ffccc4a9f5bd328112f69e727ab2725df42b620a4a", image="influxdb:1.8", instance="178.104.163.175:8080", job="prometheus", name="influxdb"}
container_fs_reads_total{device="/dev/vda1", id="/docker/1b43b8b68074966cf8a22bbb1c5576b3e94043e7b16c3d0a5c3fe32f31c6921f", image="victoriametrics/victoria-metrics:latest", instance="178.104.163.175:8080", job="prometheus", name="vm"}
container_fs_reads_total{device="/dev/vda1", id="/docker/3175a32c3dc1610983242 1ffccc4a9f5bd328112f69e727ab2725df42b620a4a", image="influxdb:1.8", instance="178.104.163.175:8080", job="prometheus", name="influxdb"}
Click: select series, CTRL + click: toggle multiple series
Remove Panel

io

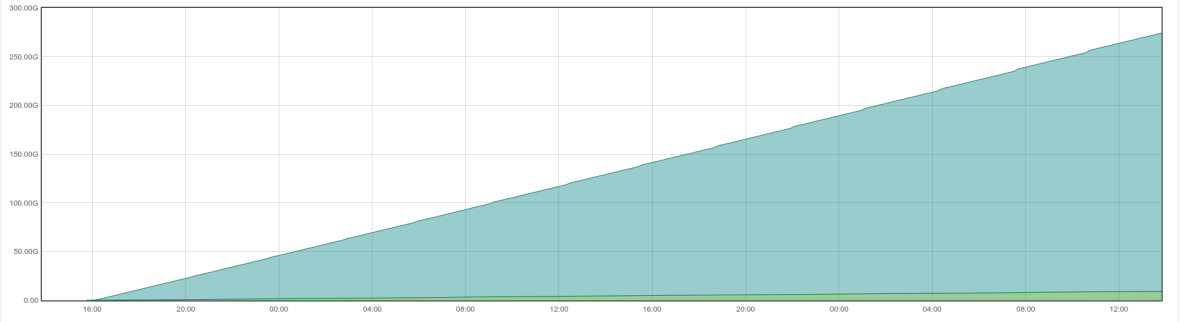
```
container_fs_writes_bytes_total{name=~"influxdb|vm"}
```

Execute

Table | Graph

Load time: 121ms Resolution: 691s Result series: 2

2d | End time | Res. (s) | Show Exemplars



container_fs_writes_bytes_total{**device**="/dev/vda", **id**="/docker/1b43b8b68074966cf8a22bbb1c5576b3e94043e7b16c3d0a5c3fe32f31c6921f", **image**="victoriametrics/victoria-metrics:latest", **instance**="178.104.163.175:8080", **job**="prometheus", **name**="vm"}

container_fs_writes_bytes_total{**device**="/dev/vda", **id**="/docker/3175a32c3dc16109832421ffccc4a9f5bd328112f69e727ab2725df42b620a4a", **image**="influxdb:1.8", **instance**="178.104.163.175:8080", **job**="prometheus", **name**="influxdb"}

Click: select series, CTRL + click: toggle multiple series

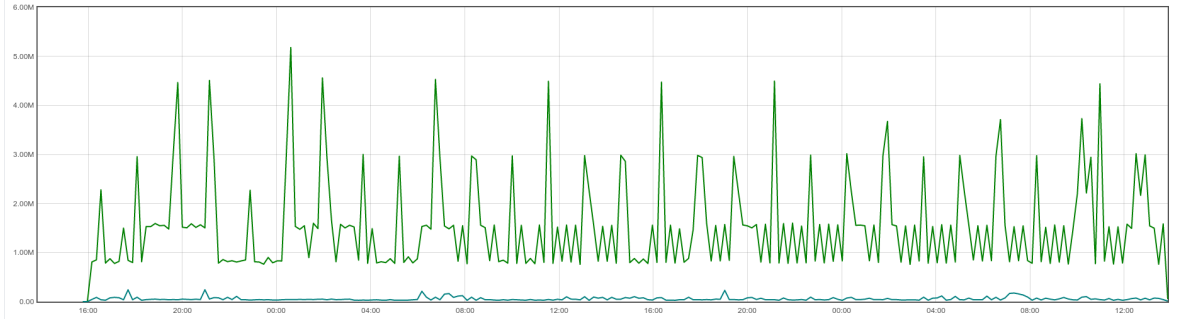
```
avg(rate(container_fs_writes_bytes_total{name=~"influxdb|vm"}[1m])) by (name)
```

Execute

Table | Graph

Load time: 130ms Resolution: 691s Result series: 2

2d | End time | Res. (s) | Show Exemplars



{**name**="influxdb"}

{**name**="vm"}

Click: select series, CTRL + click: toggle multiple series

Remove Panel

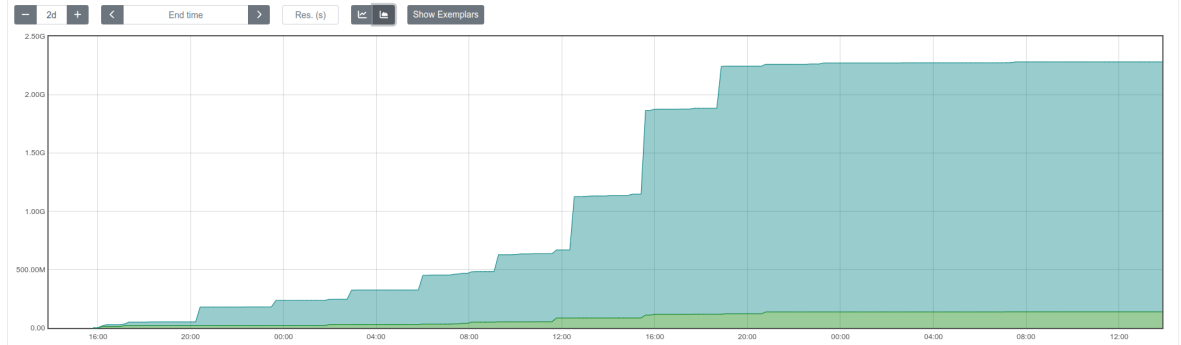
```
container_fs_reads_bytes_total{name=~"influxdb|vm"}
```

Execute

Table | Graph

Load time: 85ms Resolution: 691s Result series: 2

2d | End time | Res. (s) | Show Exemplars



container_fs_reads_bytes_total{**device**="/dev/vda", **id**="/docker/1b43b8b68074966cf8a22bbb1c5576b3e94043e7b16c3d0a5c3fe32f31c6921f", **image**="victoriametrics/victoria-metrics:latest", **instance**="178.104.163.175:8080", **job**="prometheus", **name**="vm"}

container_fs_reads_bytes_total{**device**="/dev/vda", **id**="/docker/3175a32c3dc16109832421ffccc4a9f5bd328112f69e727ab2725df42b620a4a", **image**="influxdb:1.8", **instance**="178.104.163.175:8080", **job**="prometheus", **name**="influxdb"}

Click: select series, CTRL + click: toggle multiple series

Remove Panel

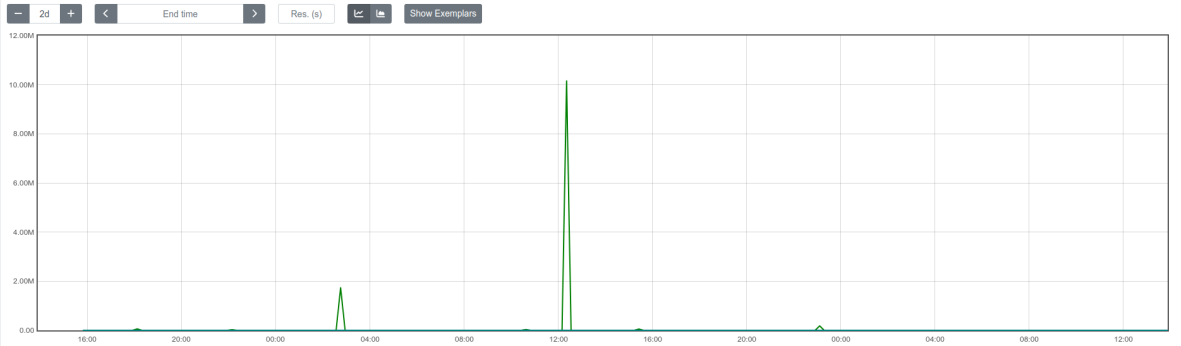
```
avg(rate(container_fs_reads_bytes_total{name=~"influxdb|vm"}[1m])) by (name)
```

Execute

Table | Graph

Load time: 134ms Resolution: 691s Result series: 2

2d | End time | Res. (s) | Show Exemplars

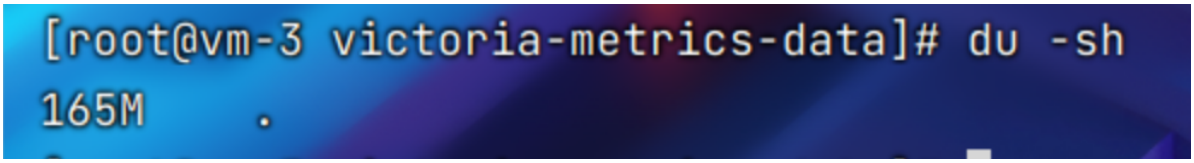


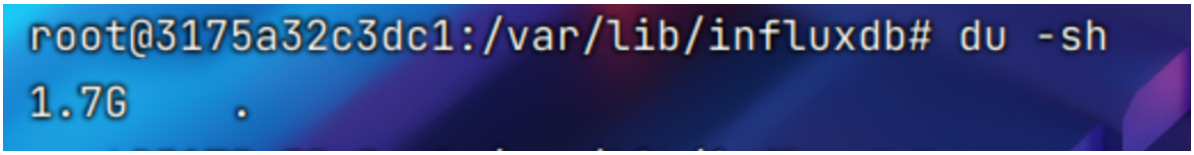
{**name**="influxdb"}

{**name**="vm"}

Click: select series, CTRL + click: toggle multiple series

Remove Panel


[root@vm-3 victoria-metrics-data]# du -sh
165M .


root@3175a32c3dc1:/var/lib/influxdb# du -sh
1.7G .