# Prometheus监控

## 1 Prometheus 简介

Prometheus（普罗米修斯）是一套开源的监控 & 报警 & 时间序列数据库的组合，随着发展，越来越多公司和组织接受采用 Prometheus，社区也十分活跃

exporter用来收集服务器性能数据

## 2 基于docker 搭建Prometheus

### 2.1 搭建环境

使用Prometheus和Grafana对本机服务器性能进行监控

监控本机，只需要一个exporter（Exporter 是一种用于将系统指标提供给 Prometheus 的工具。）

node_exporter – 用于机器系统数据收集，包括cpu，内存，磁盘，io等基本信息

Grafana是一个开源的功能丰富的数据可视化平台，通常用于时序数据的可视化。它内置了以下数据源的支持

下载镜像包

**安装 node-exporter**

启动后会在服务器上启动一个进程采集数据 ,prometheus 会每隔几秒通过接口获取服务器的 metrics（指标）数据

```
docker pull prom/node-exporter
```

```
[root@zx zx]# docker pull prom/node-exporter
Using default tag: latest
latest: Pulling from prom/node-exporter
dc6dd4561653: Pull complete
613f88646930: Pull complete
edad907fb257: Pull complete
Digest: sha256:22fbde17ab647ddf89841e5e464464eece111402b7d599882c2a3393bc0d2810
Status: Downloaded newer image for prom/node-exporter:latest
docker.io/prom/node-exporter:latest
```

**安装prometheus**

```
docker pull prom/prometheus
```

```
[root@zx zx]# docker pull prom/prometheus
Using default tag: latest
latest: Pulling from prom/prometheus
aa2a8d90b84c: Pull complete
b45d31ee2d7f: Pull complete
4aa62bad85d2: Pull complete
ab7c5e3650fa: Pull complete
e359808b78c5: Pull complete
a981f85f2027: Pull complete
1b686198e053: Pull complete
86d32b21d33f: Pull complete
185f69940eb1: Pull complete
075852623fbc: Pull complete
b36bbe7ca76a: Pull complete
5a0a2d9e2f98: Pull complete
Digest: sha256:5accb68b56ba452e449a5e552411acaeabbbe0f087acf19a1157ce3dd10a8bed
Status: Downloaded newer image for prom/prometheus:latest
docker.io/prom/prometheus:latest
```

**安装grafana**

Grafana（格拉法纳）是一个开源的分析和监控平台，用于可视化大量的时间序列数据。它支持各种数据源，如 Graphite、InfluxDB、Prometheus 等，使用户能够创建动态且具有交互性的仪表板。

```
docker pull grafana/grafana
```

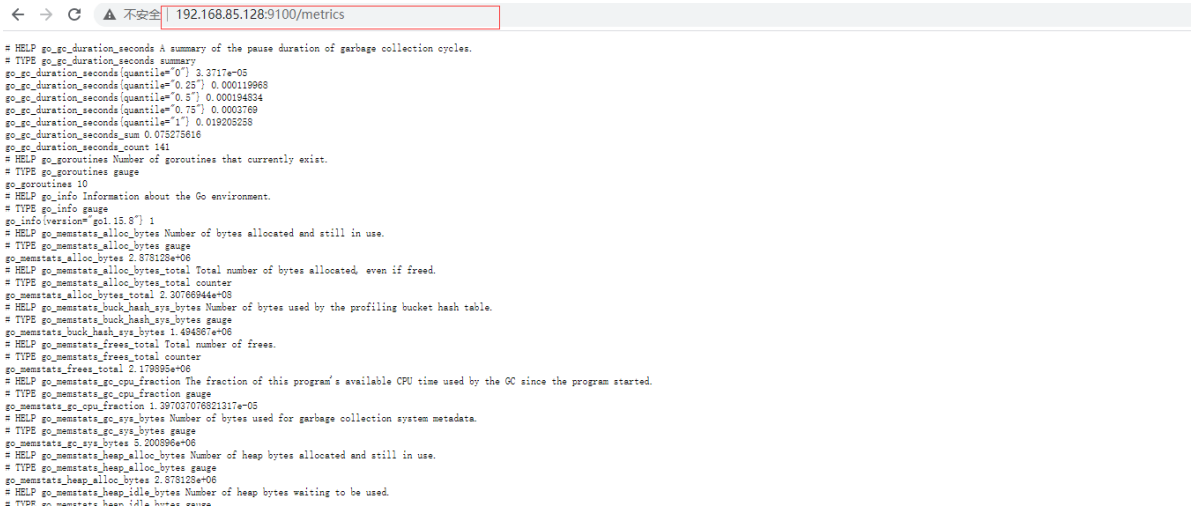
**启动node-exporter**

```
docker run -d -p 9100:9100 \
  -v "/proc:/host/proc:ro" \
  -v "/sys:/host/sys:ro" \
  -v "/:/rootfs:ro" \
  --net="host" \
  prom/node-exporter
```

在 Docker 中，使用 docker pull 命令是从 Docker 镜像仓库下载（或拉取）一个镜像到本地机器上。

访问url,收集数据

```
http://服务器ip:9100/metrics
```




启动prometheus

新建目录prometheus，编辑配置文件prometheus.yml

/opt 目录是用于存放可选（optional）软件的目录。该目录通常包含独立的、不属于操作系统核心部分的软件包。

```
mkdir /opt/prometheus
cd /opt/prometheus/
vim prometheus.yml
```

```
global:
  scrape_interval:     60s
  evaluation_interval: 60s

scrape_configs:
  - job_name: prometheus
    static_configs:
      - targets: ['localhost:9090']
        labels:
          instance: prometheus

  - job_name: linux
    static_configs:
      - targets: ['服务器ip:9100']
        labels:
          instance: localhost
```

注意服务器地址

```
- job_name: linux
  static_configs:
    - targets: ['服务器ip:9100']
      labels:
        instance: localhost
```

**启动prometheus**

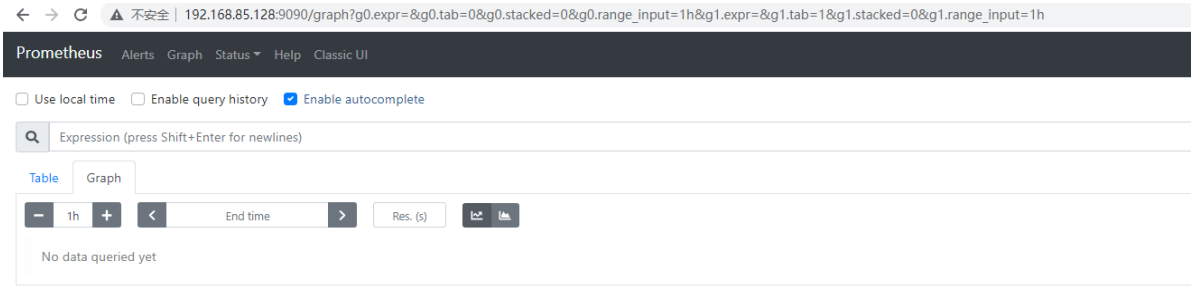
```
docker run  -d \
  -p 9090:9090 \
  -v /opt/prometheus/prometheus.yml:/etc/prometheus/prometheus.yml  \
  prom/prometheus
```

验证启动成功

```
[root@zx prometheus]# docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS                                                  NAMES
7e416df78199        prom/prometheus     "/bin/prometheus --c…"   11 seconds ago      Up 10 seconds       0.0.0.0:9090->9090/tcp                                 nifty_heisenberg
9cad65c42030        prom/node-exporter  "/bin/node_exporter"     56 minutes ago      Up 56 minutes                                                              interesting_hypatia
98bc878199f2        grafana/grafana     "/run.sh"                3 hours ago         Up 3 hours          0.0.0.0:3000->3000/tcp                                 GRafana
006a44e1d7dc        influxdb            "/entrypoint.sh infl…"   3 hours ago         Up 3 hours          0.0.0.0:8083->8083/tcp, 0.0.0.0:8086->8086/tcp         JMeter-influx
```

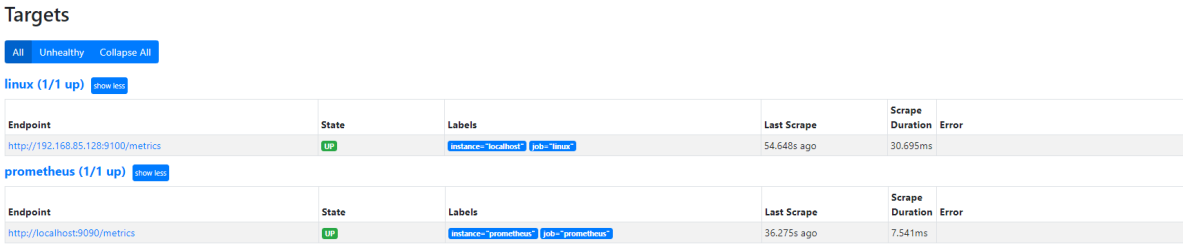
访问url

```
http://192.168.85.128:9090/graph
```




访问targets

```
http://192.168.85.128:9090/targets
```




启动grafana

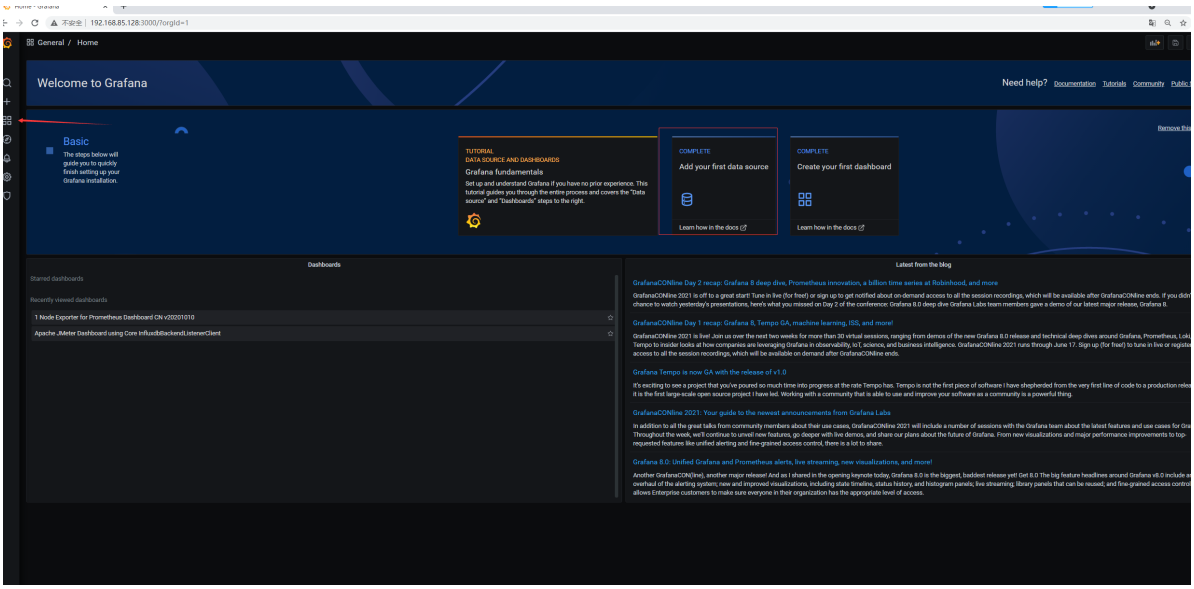
```
  docker run -d --name grafana -p 3000:3000 grafana/grafana
```

访问 url

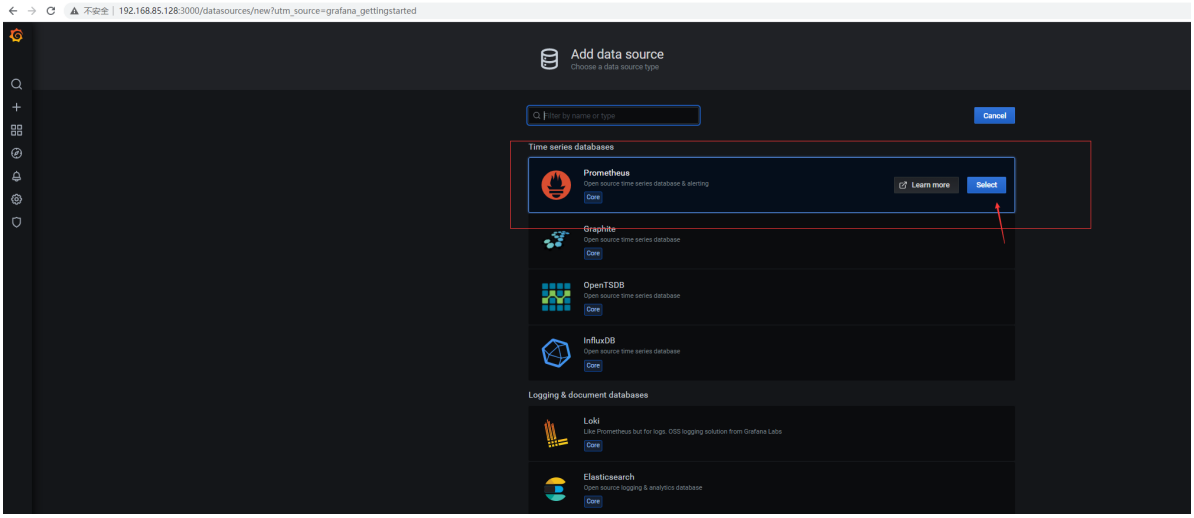
```
http://192.168.85.128:3000/
```

用户名和密码都是 admin

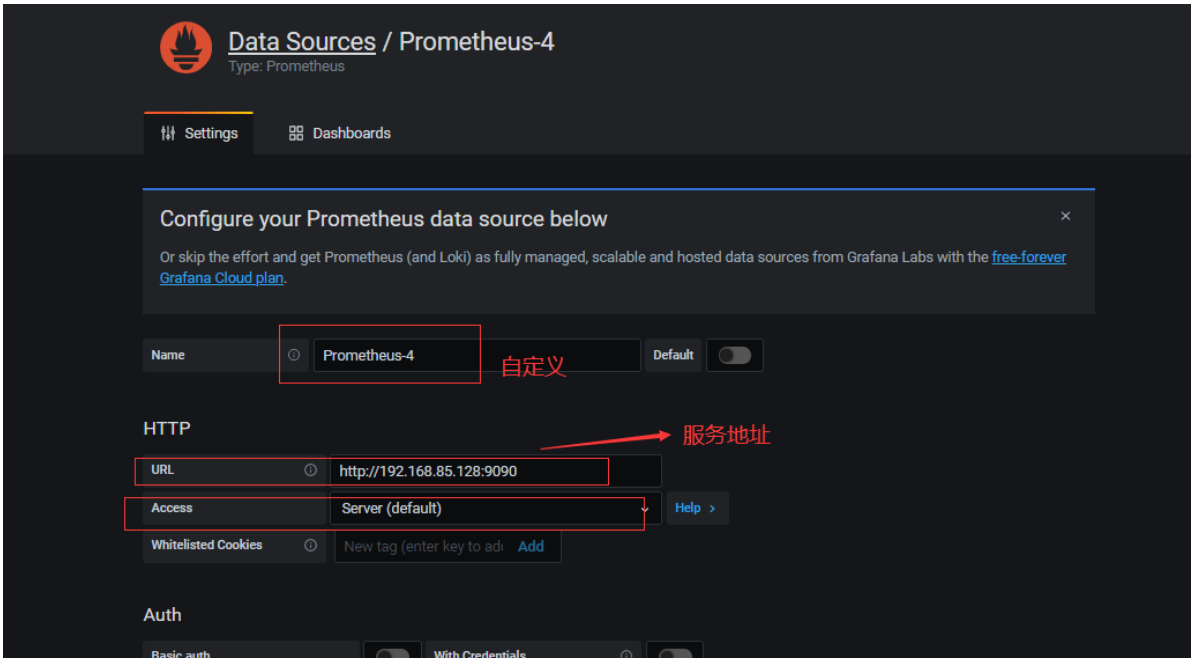
# Prometheus+Grafana生成监控信息



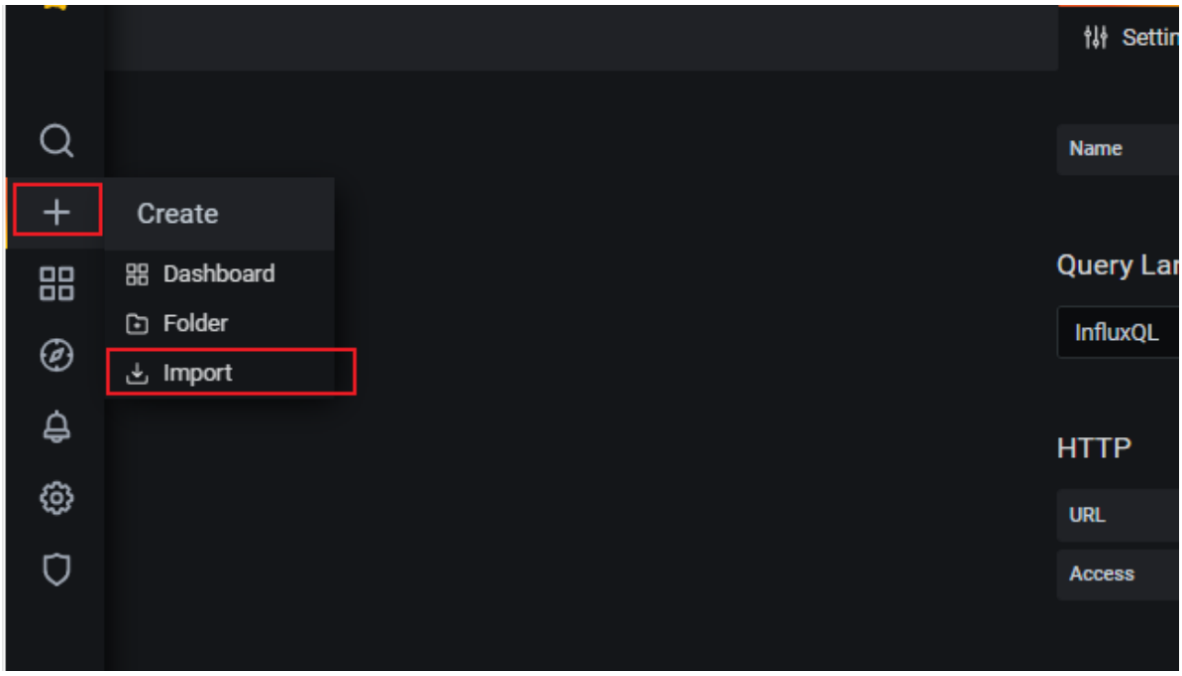

选择prometheus




配置数据源信息



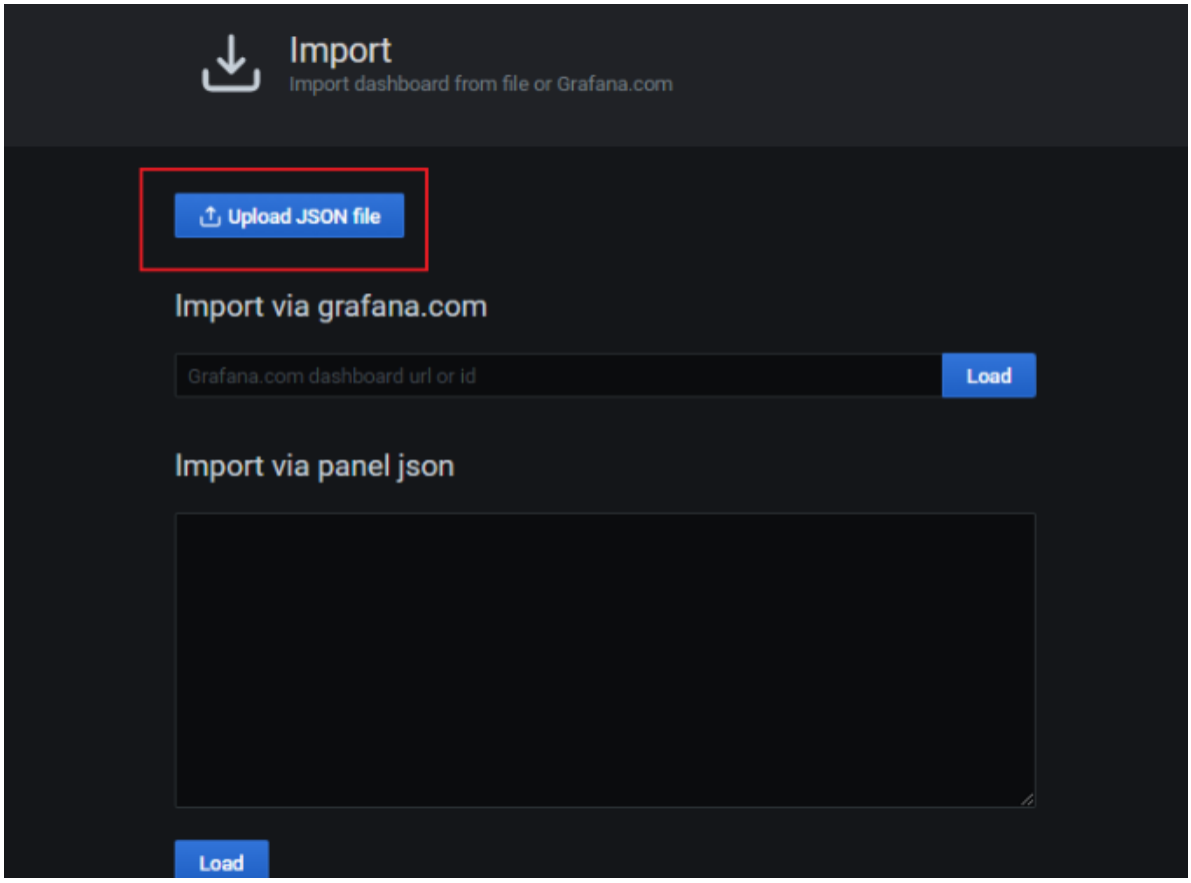
导入模板

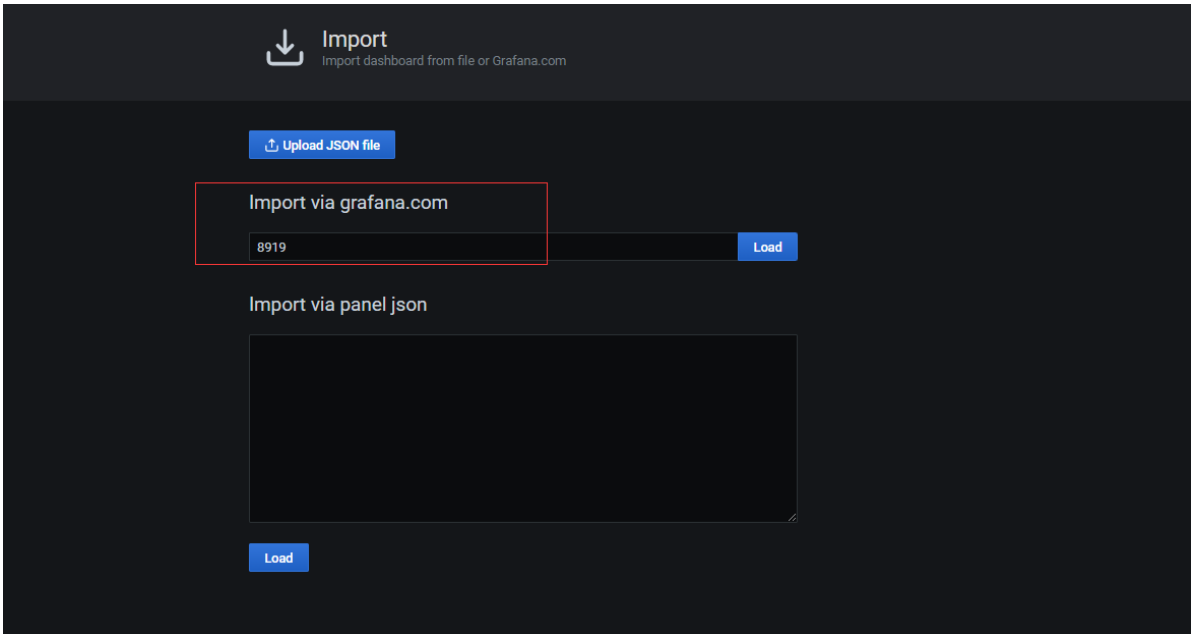



导入模板方式

ID 导入

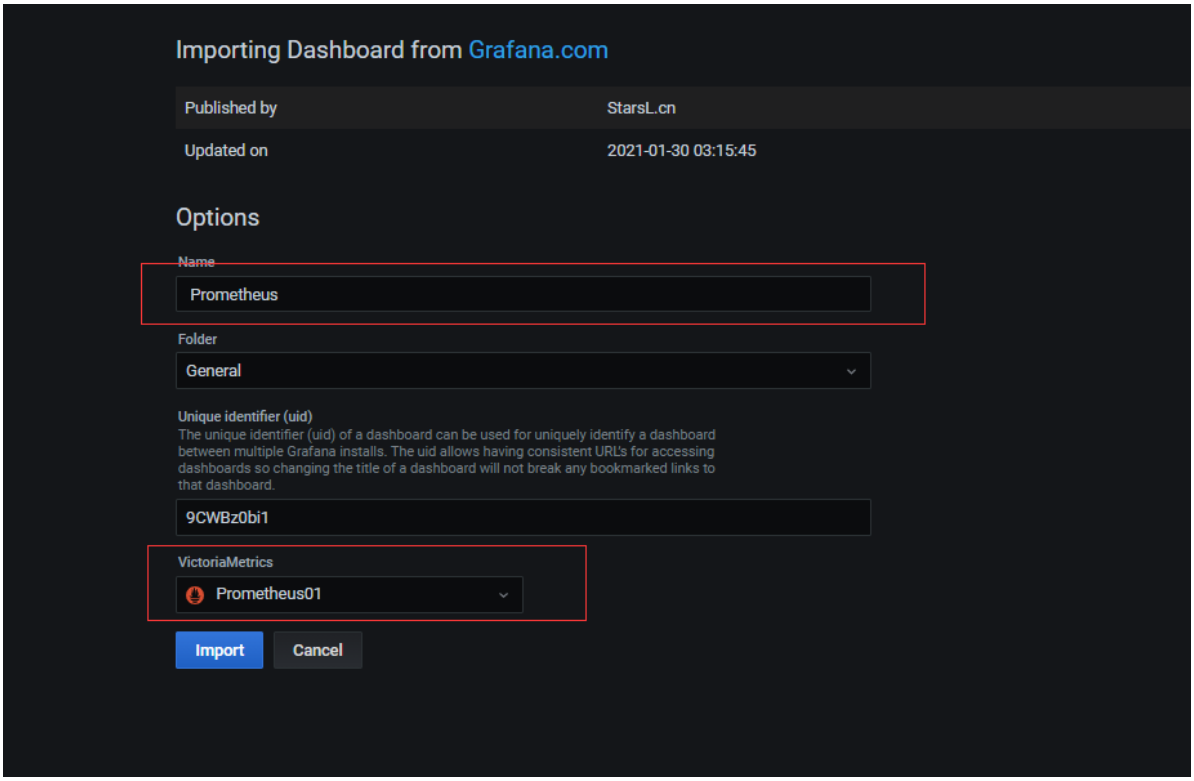
8919





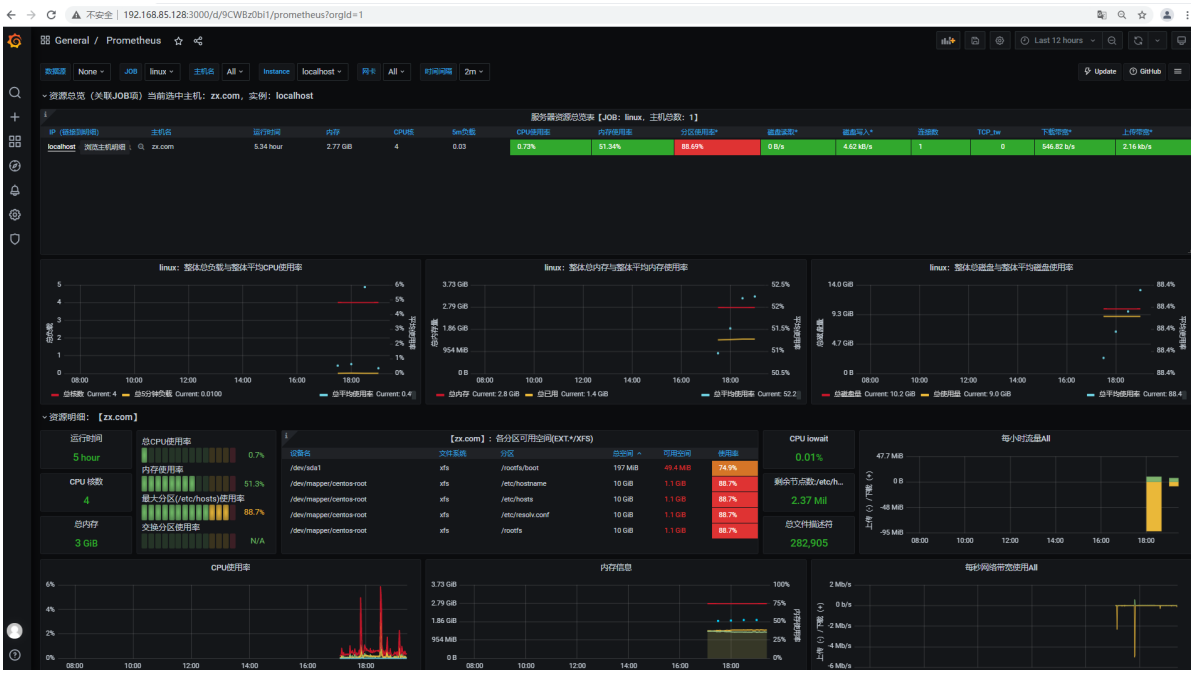

名称自定义

选择对应的数据源




点击导入

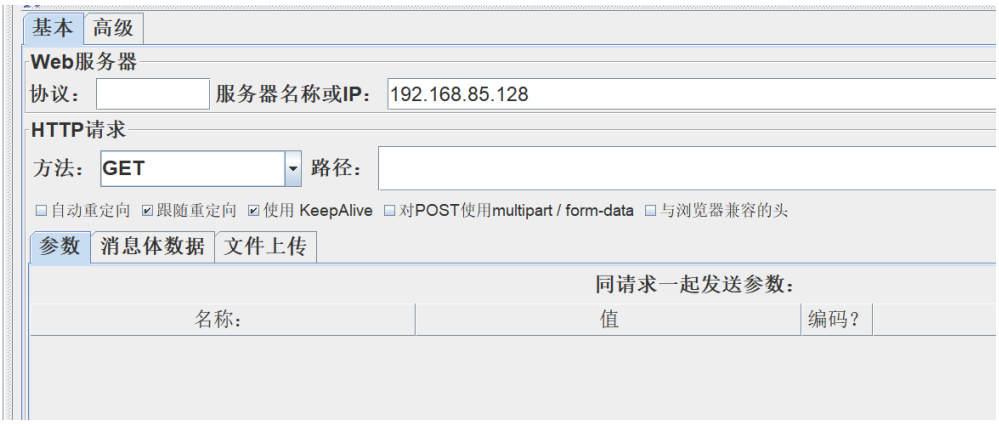
生成图表信息




## 案例

### JMeter项目配置

- 聚合报告
- 后端监听器
- 察看结果树




### 线程组设置

聚合报告
后端监听器
察看结果树

在取样器错误后要执行的动作

◉ 继续 ○ 启动下一进程循环 ○ 停止线程 ○ 停止测试 ○ 立即停止测试

线程属性

线程数： 1

Ramp-Up时间（秒）： 1

循环次数 ☑ 永远

☑ Same user on each iteration

☐ 延迟创建线程直到需要

☐ 调度器

持续时间（秒）

启动延迟（秒）

观察grafana数据指标变化