https://prometheus.io/download/

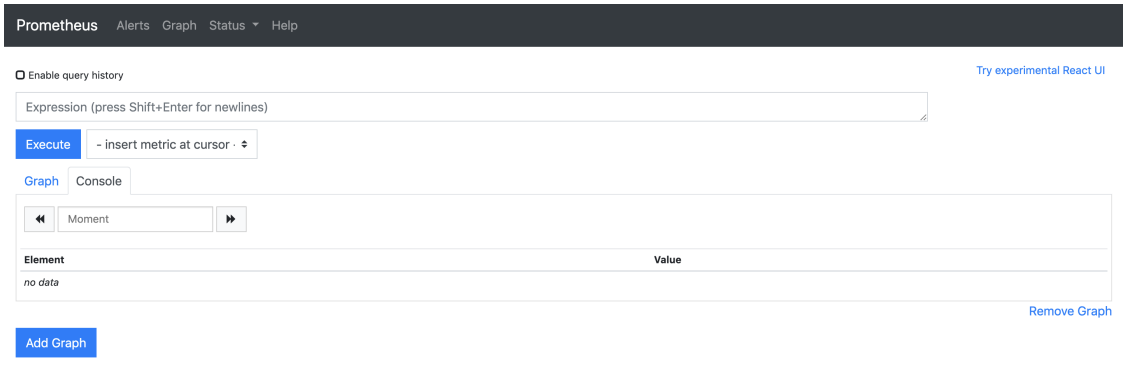
通过这个页面可以下载 prometheus

mac 上选择 darwin-amd64 版本

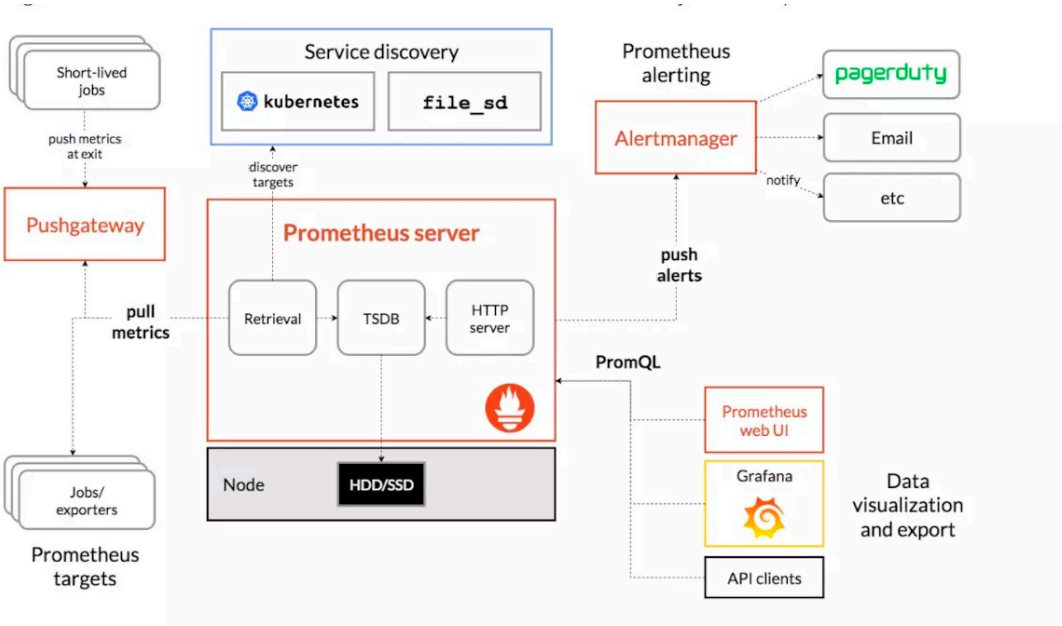
解压后直接运行 `./prometheus` 就可以启动 prometheus

```
→  ~
→  ~ cd /usr/local/prometheus-2.14.0.darwin-amd64
→  prometheus-2.14.0.darwin-amd64 ls
LICENSE          NOTICE           console_libraries consoles         prometheus       prometheus.yml   promtool         tsdb
→  prometheus-2.14.0.darwin-amd64
→  prometheus-2.14.0.darwin-amd64
→  prometheus-2.14.0.darwin-amd64
→  prometheus-2.14.0.darwin-amd64 ll
total 272960
-rw-r--r--@ 1 zhisheng  admin    11K 11 12 00:17 LICENSE
-rw-r--r--@ 1 zhisheng  admin   3.1K 11 12 00:17 NOTICE
drwxr-xr-x@ 4 zhisheng  admin   128B 11 12 00:17 console_libraries
drwxr-xr-x@ 9 zhisheng  admin   288B 11 12 00:17 consoles
-rwxr-xr-x@ 1 zhisheng  admin    76M 11 11 22:36 prometheus
-rw-r--r--@ 1 zhisheng  admin   926B 11 12 00:17 prometheus.yml
-rwxr-xr-x@ 1 zhisheng  admin    45M 11 11 22:38 promtool
-rwxr-xr-x@ 1 zhisheng  admin    13M 11 11 22:38 tsdb
→  prometheus-2.14.0.darwin-amd64 ./prometheus
level=info ts=2019-11-14T10:58:17.537Z caller=main.go:296 msg="no time or size retention was set so using the default time retention" duration=15d
level=info ts=2019-11-14T10:58:17.537Z caller=main.go:332 msg="Starting Prometheus" version="(version=2.14.0, branch=HEAD, revision=edeb7a44cbf745f1d8be4ea6f215e79e651bfe19)"
level=info ts=2019-11-14T10:58:17.537Z caller=main.go:333 build_context="(go=go1.13.4, user=root@df2327081015, date=20191111-14:34:50)"
level=info ts=2019-11-14T10:58:17.537Z caller=main.go:334 host_details=(darwin)
level=info ts=2019-11-14T10:58:17.537Z caller=main.go:335 fd_limits="(soft=256, hard=unlimited)"
level=info ts=2019-11-14T10:58:17.537Z caller=main.go:336 vm_limits="(soft=unlimited, hard=unlimited)"
level=info ts=2019-11-14T10:58:17.540Z caller=main.go:657 msg="Starting TSDB ..."
level=info ts=2019-11-14T10:58:17.540Z caller=web.go:496 component=web msg="Start listening for connections" address=0.0.0.0:9090
level=info ts=2019-11-14T10:58:17.543Z caller=head.go:535 component=tsdb msg="replaying WAL, this may take awhile"
level=info ts=2019-11-14T10:58:17.545Z caller=head.go:583 component=tsdb msg="WAL segment loaded" segment=0 maxSegment=0
level=info ts=2019-11-14T10:58:17.546Z caller=main.go:672 fs_type=18
level=info ts=2019-11-14T10:58:17.546Z caller=main.go:673 msg="TSDB started"
level=info ts=2019-11-14T10:58:17.546Z caller=main.go:743 msg="Loading configuration file" filename=prometheus.yml
level=info ts=2019-11-14T10:58:17.549Z caller=main.go:771 msg="Completed loading of configuration file" filename=prometheus.yml
level=info ts=2019-11-14T10:58:17.549Z caller=main.go:626 msg="Server is ready to receive web requests."
```

本地打开：http://localhost:9090/



prometheus 架构



prometheus 与 pushgateway 的关系?

下载 prometheus pushgateway

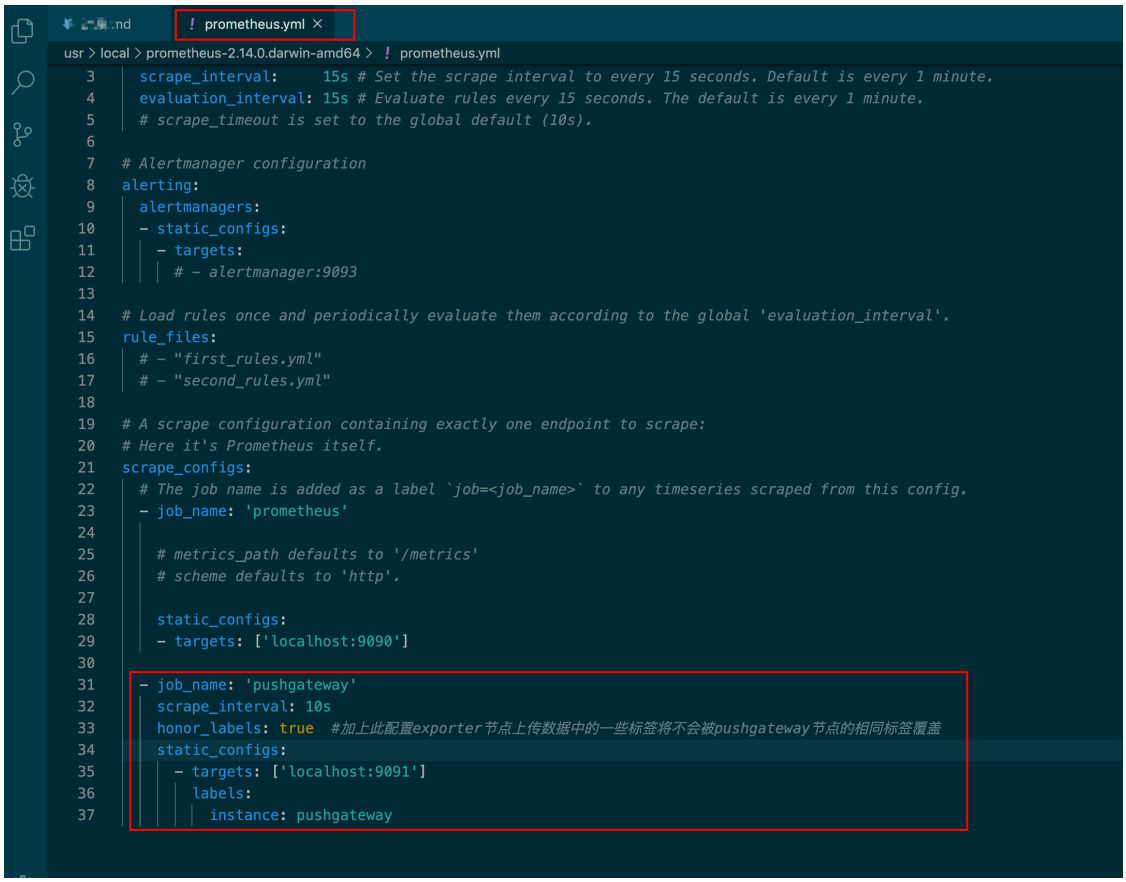
https://prometheus.io/download/

安装 prometheus pushgateway

在 prometheus.yml 中添加下面信息：

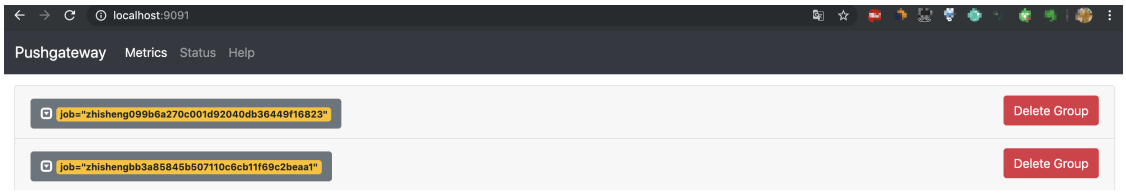
```
  - job_name: 'pushgateway'
    scrape_interval: 10s
    honor_labels: true  #加上此配置exporter节点上传数据中的一些标签将不会被pushgateway节点的相同标签覆盖
    static_configs:
      - targets: ['localhost:9091']
        labels:
          instance: pushgateway
```

因为prometheus配置pushgateway 的时候,也会指定job和instance,但是它只表示pushgateway实例,不能真正表达收集数据的含义。所以配置pushgateway需要添加honor_labels:true,避免收集数据本身的job和instance被覆盖。



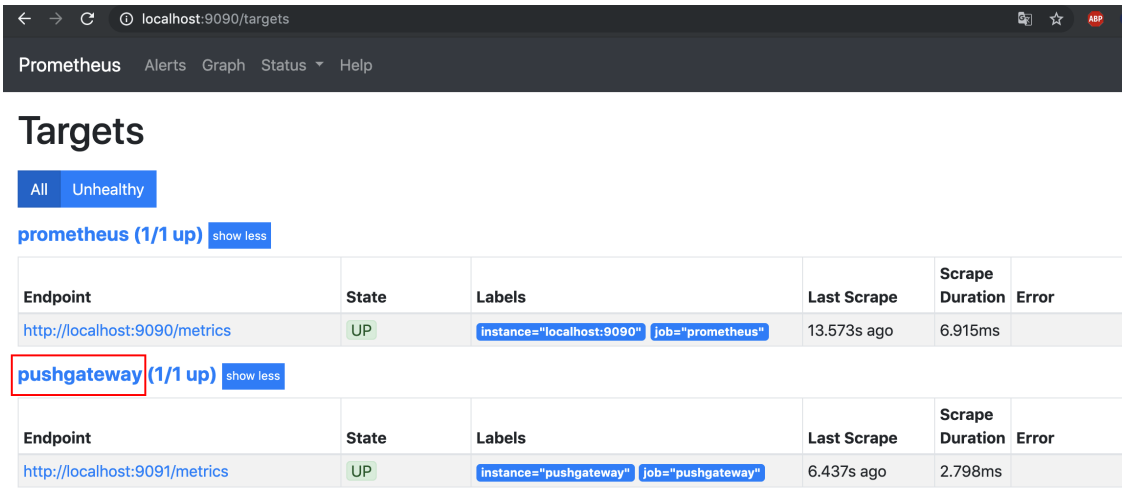
启动 pushgaterway

打开：http://localhost:9091/



配置好了上面的 prometheus 配置文件后，接下来启动 prometheus。

从 http://localhost:9090/targets 可以看到新启动的 pushgaterway 了

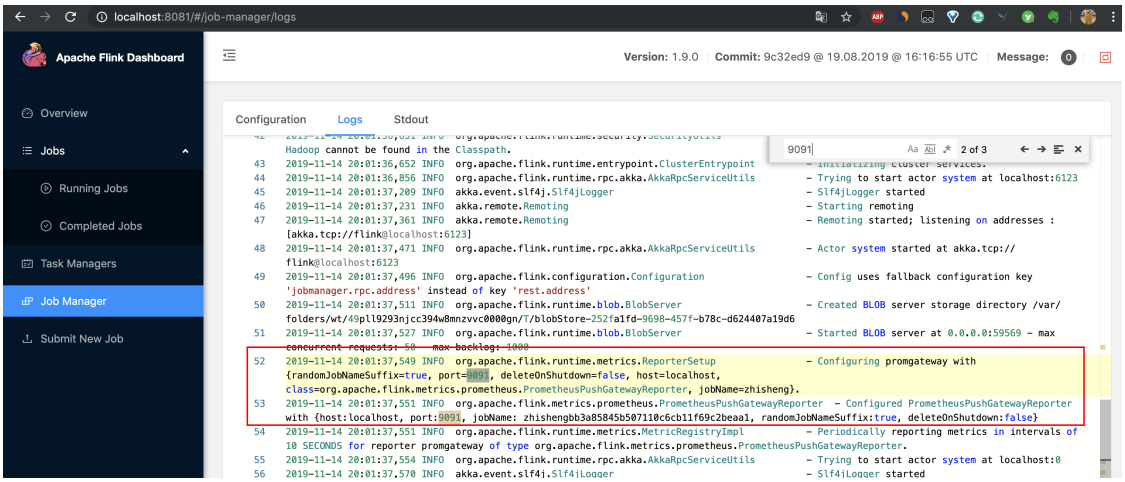


然后在 Flink 的配置文件中添加:

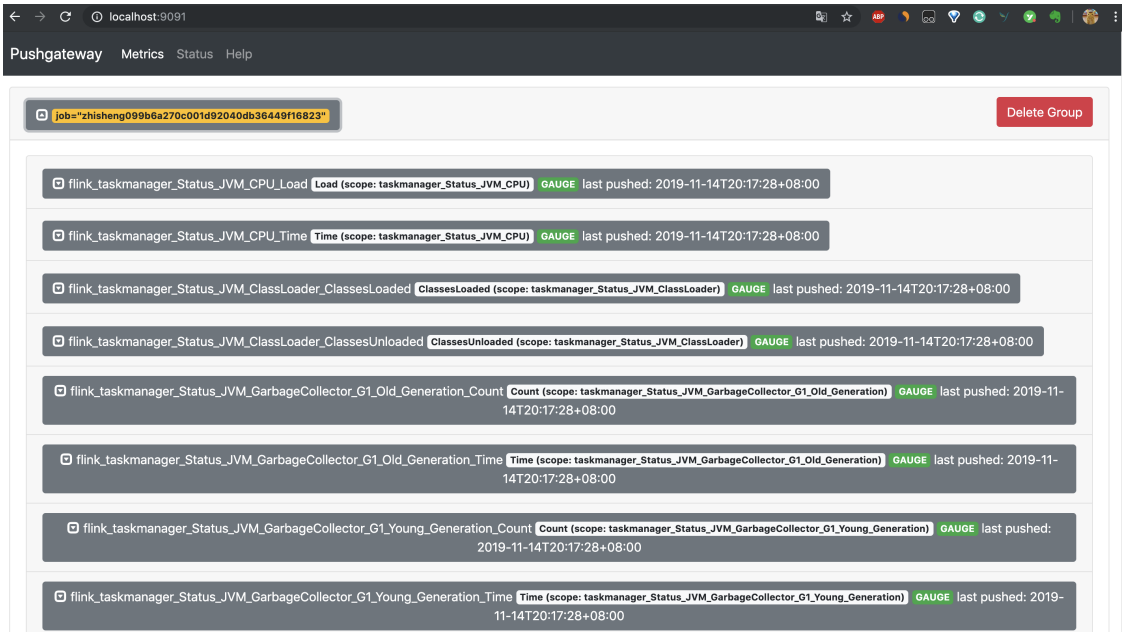
```
metrics.reporter.promgateway.class:
org.apache.flink.metrics.prometheus.PrometheusPushGatewayReporter
metrics.reporter.promgateway.host: localhost    # promgateway 地址
metrics.reporter.promgateway.port: 9091
metrics.reporter.promgateway.jobName: zhisheng
metrics.reporter.promgateway.randomJobNameSuffix: true
metrics.reporter.promgateway.deleteOnShutdown: false
```

接着可以启动 Flink，然后看下启动日志:

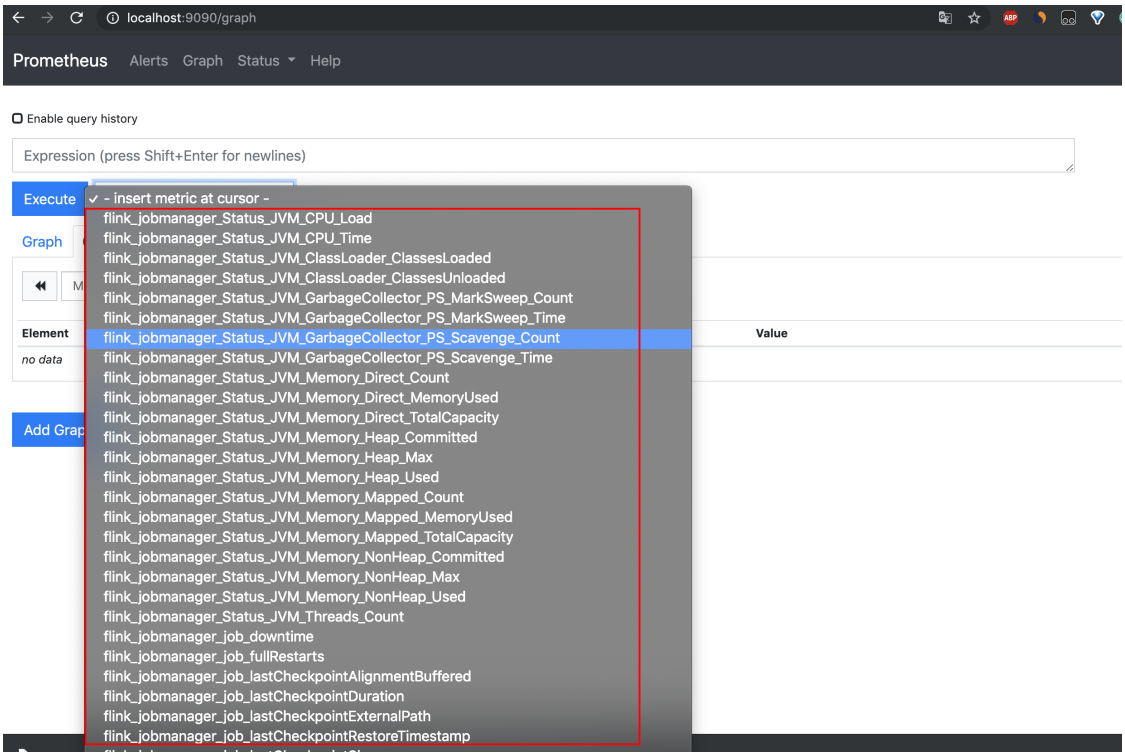
```
2019-11-14 20:01:37,549 INFO
org.apache.flink.runtime.metrics.ReporterSetup                 -
Configuring promgateway with {randomJobNameSuffix=true, port=9091,
deleteOnShutdown=false, host=localhost,
class=org.apache.flink.metrics.prometheus.PrometheusPushGatewayRepo
rter, jobName=zhisheng}.
2019-11-14 20:01:37,551 INFO
org.apache.flink.metrics.prometheus.PrometheusPushGatewayReporter
- Configured PrometheusPushGatewayReporter with {host:localhost,
port:9091, jobName: zhishengbb3a85845b507110c6cb11f69c2beaa1,
randomJobNameSuffix:true, deleteOnShutdown:false}
```



接着在 Flink UI 上提交一个 Flink 作业，接着就可以在 http://localhost:9091/ pushgaterway 上看到监控指标数据了。



然后在 prometheus http://localhost:9090/graph 上也可以看到监控指标数据了



如果你有安装 Grafana 的话，那么可以使用 Grafana 去读取 prometheus 中的数据，配置一下数据源、指标、数据展示方式等。