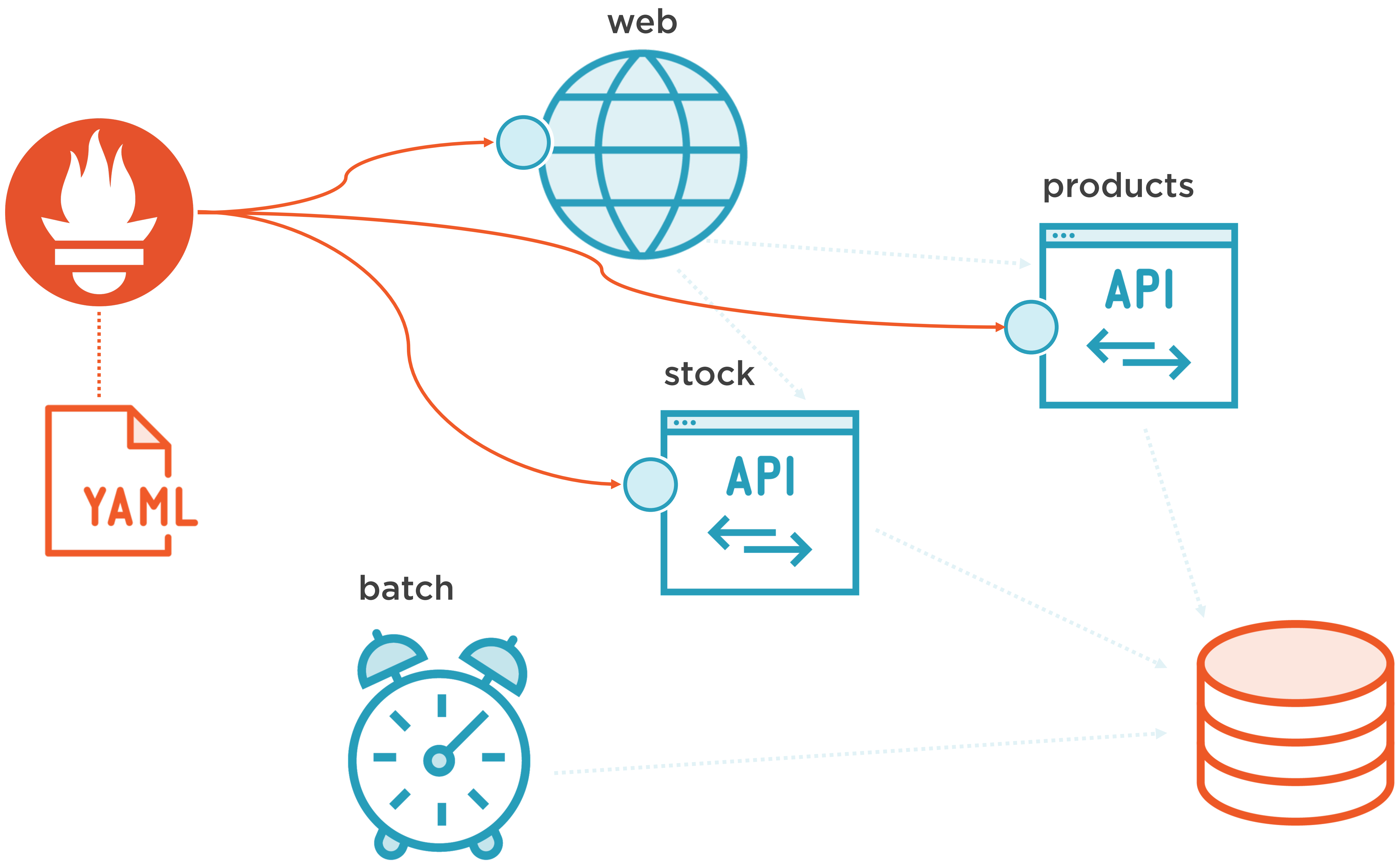
Scraping Application Metrics with Prometheus

Elton Stoneman
CONSULTANT & TRAINER

@EltonStoneman | blog.sixeyed.com

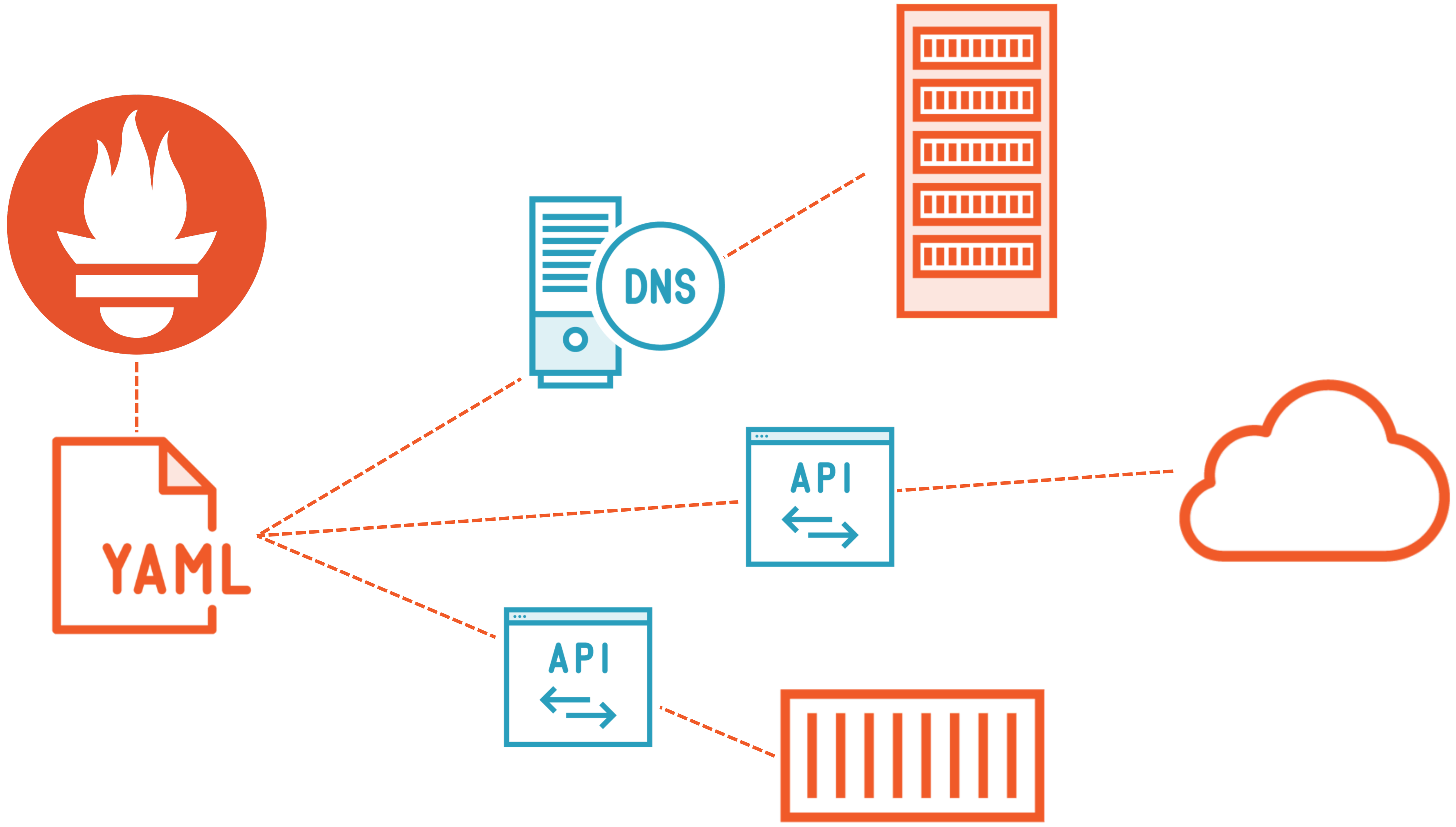

web
products
stock
batch
YAML
API
API

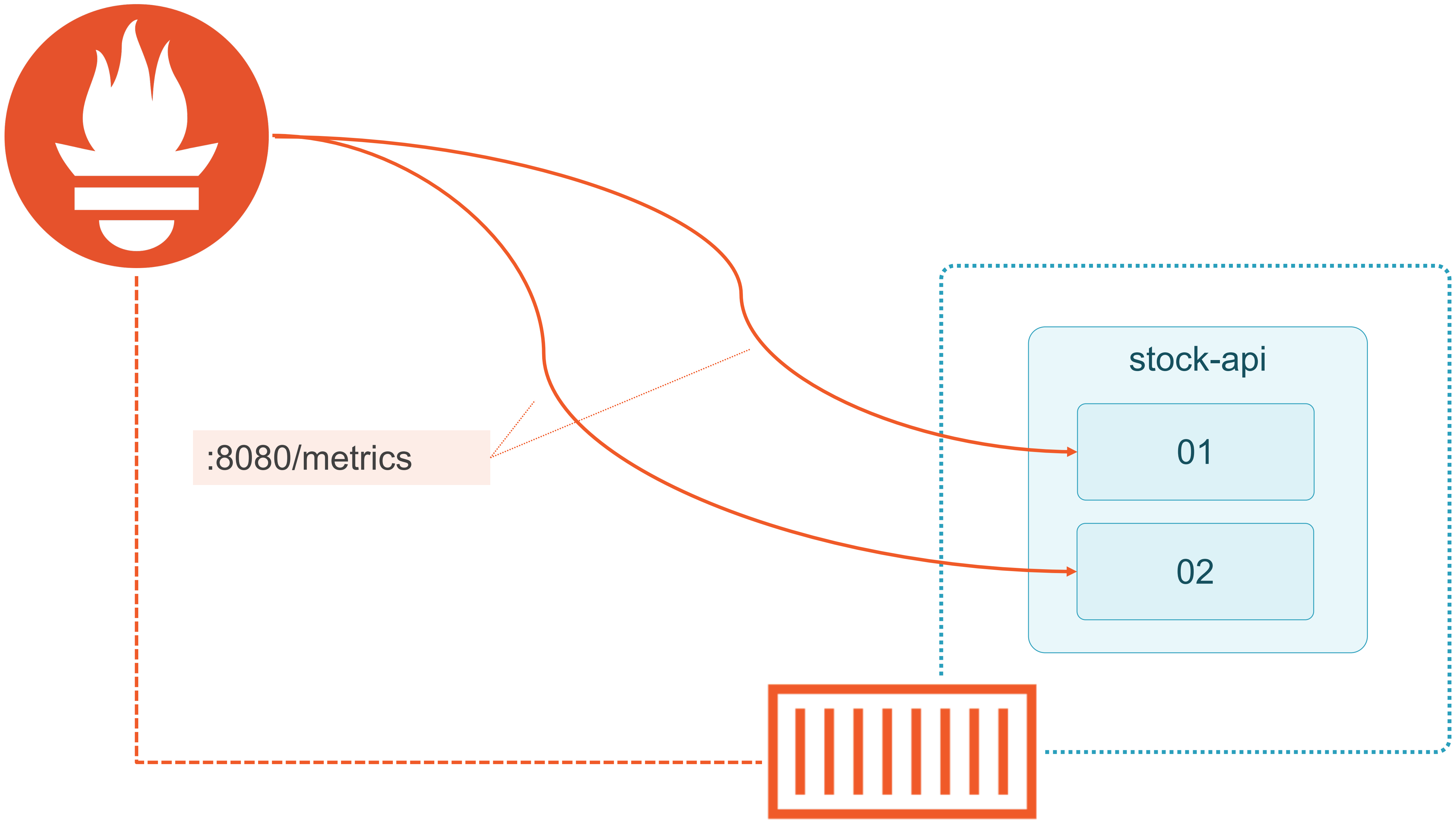
Static Target Configuration

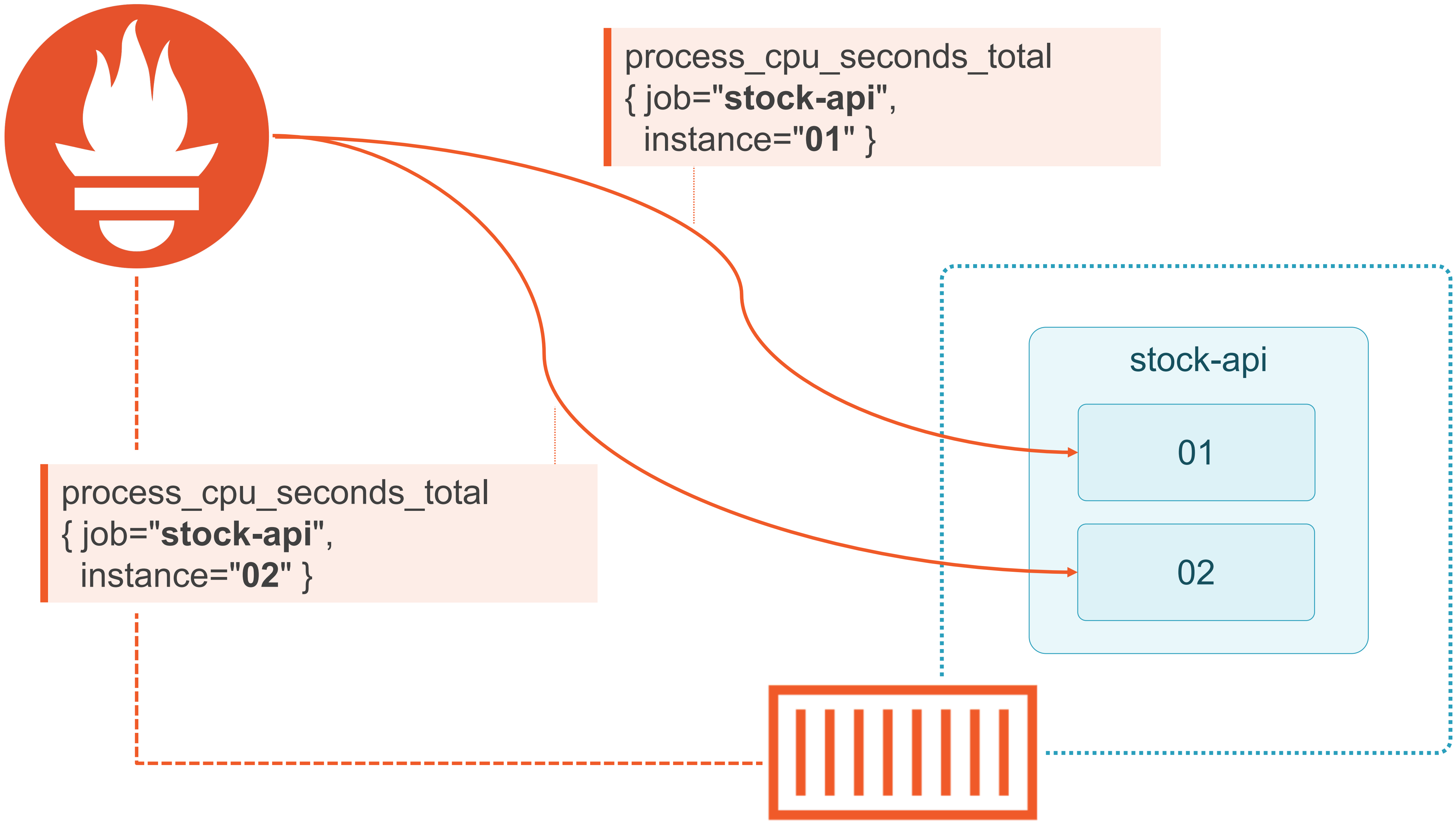
prometheus.yml

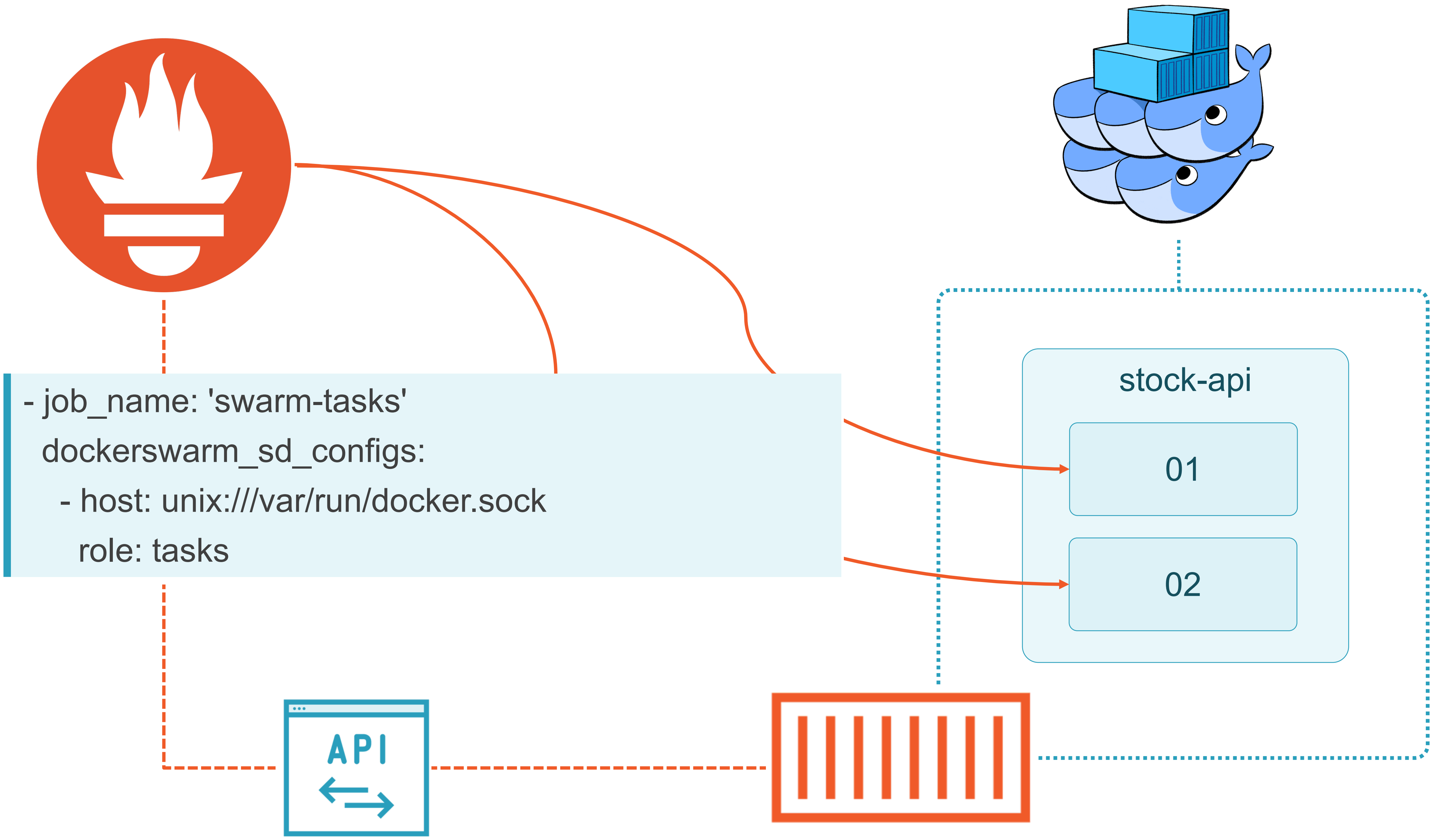
```yaml
global:
  scrape_interval: 10s

scrape_configs:
  - job_name: "web"
    metrics_path: /metrics
    static_configs:
      - targets: ["web"]
```

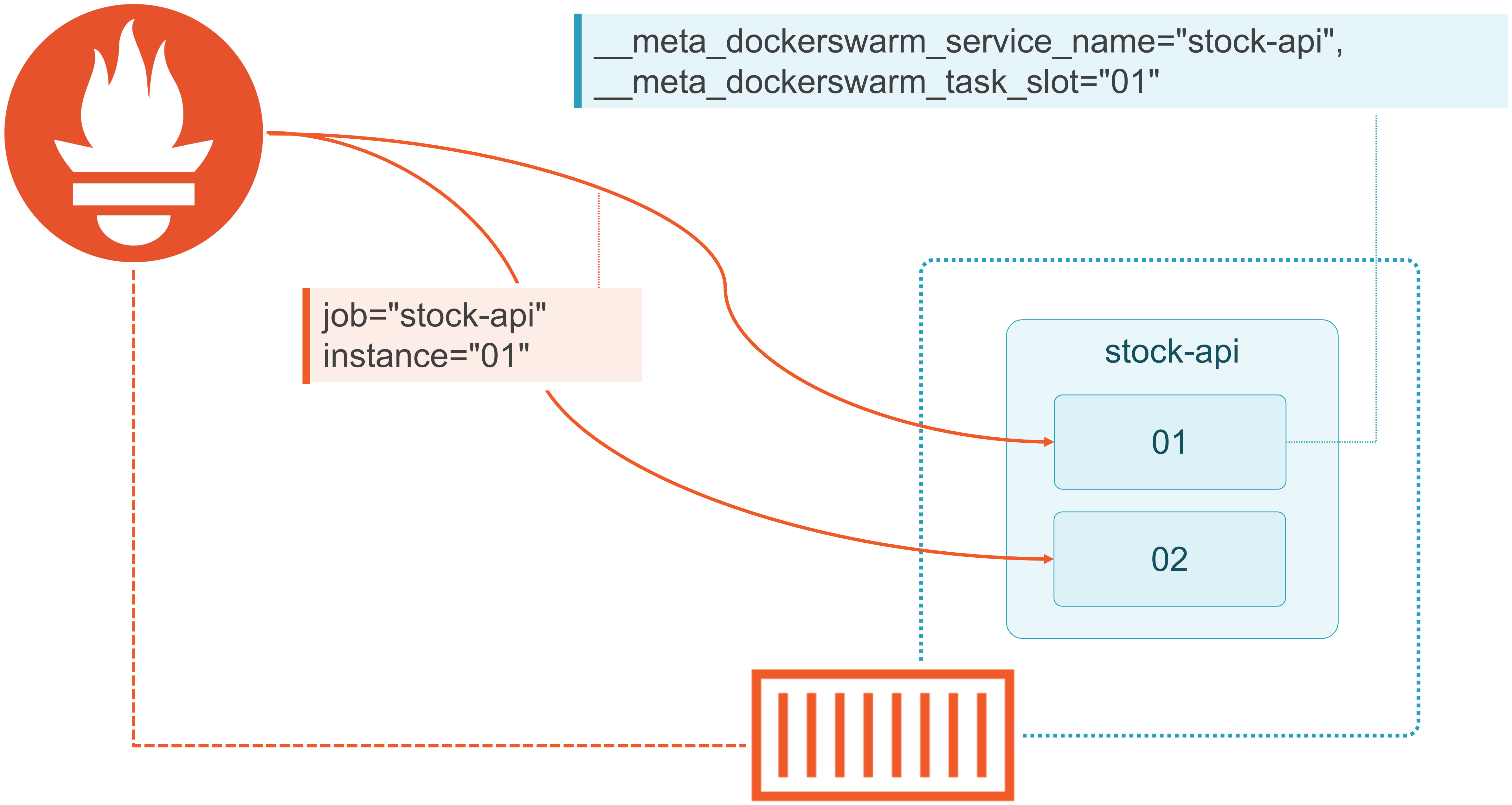

YAML
DNS
API
API


:8080/metrics
stock-api
01
02


process_cpu_seconds_total
{ job="**stock-api**",
instance="**01**" }
process_cpu_seconds_total
{ job="**stock-api**",
instance="**02**" }
stock-api
01
02



```
- job_name: 'swarm-tasks'
  dockerswarm_sd_configs:
    - host: unix:///var/run/docker.sock
      role: tasks
```


__meta_dockerswarm_service_name="stock-api",
__meta_dockerswarm_task_slot="01"
job="stock-api"
instance="01"
stock-api
01
02

Demo

Scraping metrics with Service Discovery

- Connecting to the platform API
- Relabelling to select targets
- Relabelling to configure targets

Static Configuration for the Pushgateway

prometheus.yml

```
scrape_configs:
  - job_name: "pushgateway"
    metrics_path: /metrics
    honor_labels: true
    static_configs:
      - targets: ["pushgateway:9091"]
```

Service Discovery Configuration

prometheus.yml

```
- job_name: 'swarm-tasks'
  dockerswarm_sd_configs:
    - host: unix:///.../docker.sock
      role: tasks
```

Relabelling to Select Targets

prometheus.yml

```yaml
relabel_configs:
 - source_labels:
  - __label_prometheus_scrape
  regex: true
  action: keep
```

docker-stack.yaml

```yaml
stock-api:
  image: stock-api:m5
  deploy:
   labels:
      prometheus-scrape: 'true'
```

Relabelling to Configure Targets

prometheus.yml

```
- source_labels:
  - __label_prometheus_path
  target_label:  __metrics_path__

- source_labels:
   - __address__
   - __label_prometheus_port
  action: replace
  regex: ([^:]+)(?::\d+)?;(\d+)
  replacement: $1:$2
   target_label: __address__
```

Relabelling to Configure Targets

docker-stack.yaml

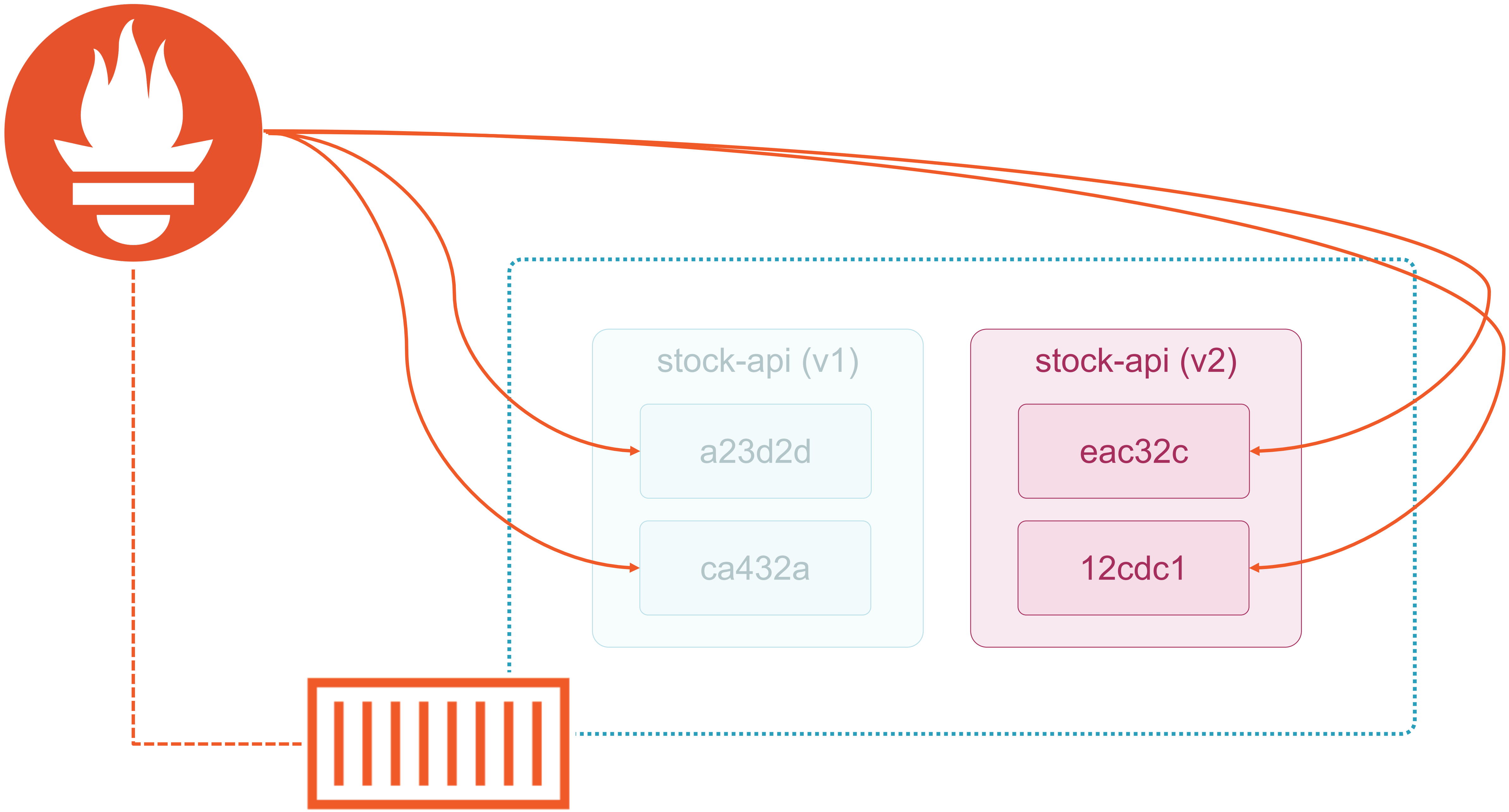
```yaml
products-api:
  image: products-api:m5
  deploy:
    replicas: 3
    labels:
      prometheus-scrape: 'true'
      prometheus-path: '/actuator/prometheus'
      prometheus-port: '80'
```

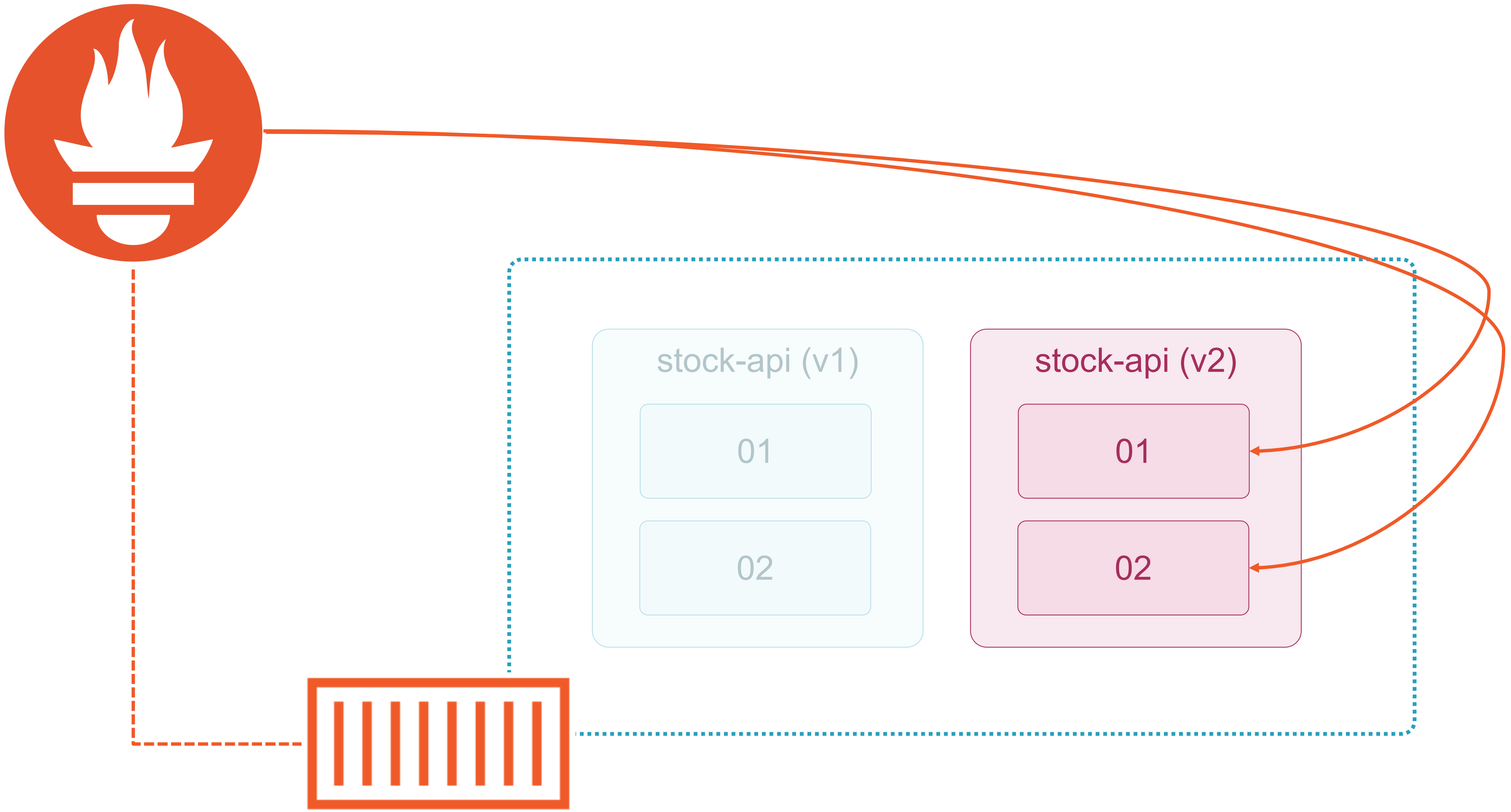
Relabelling to Configure Labels

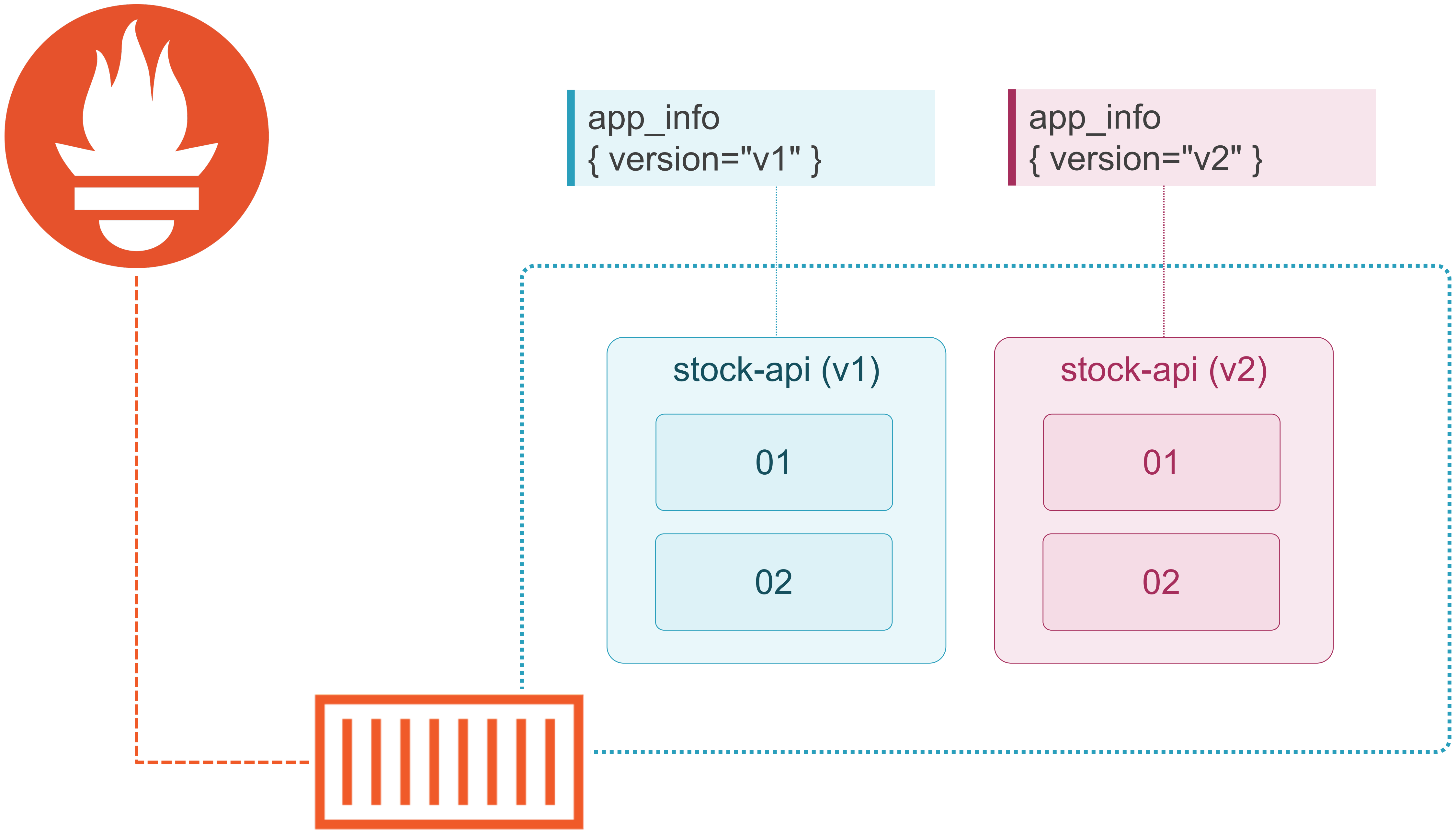
prometheus.yml

```
- source_labels:
  - __meta_dockerswarm_service_name
  target_label: job

- source_labels:
  - __meta_dockerswarm_task_slot
  target_label: instance
```


stock-api (v1)
a23d2d
ca432a
stock-api (v2)
eac32c
12cdc1

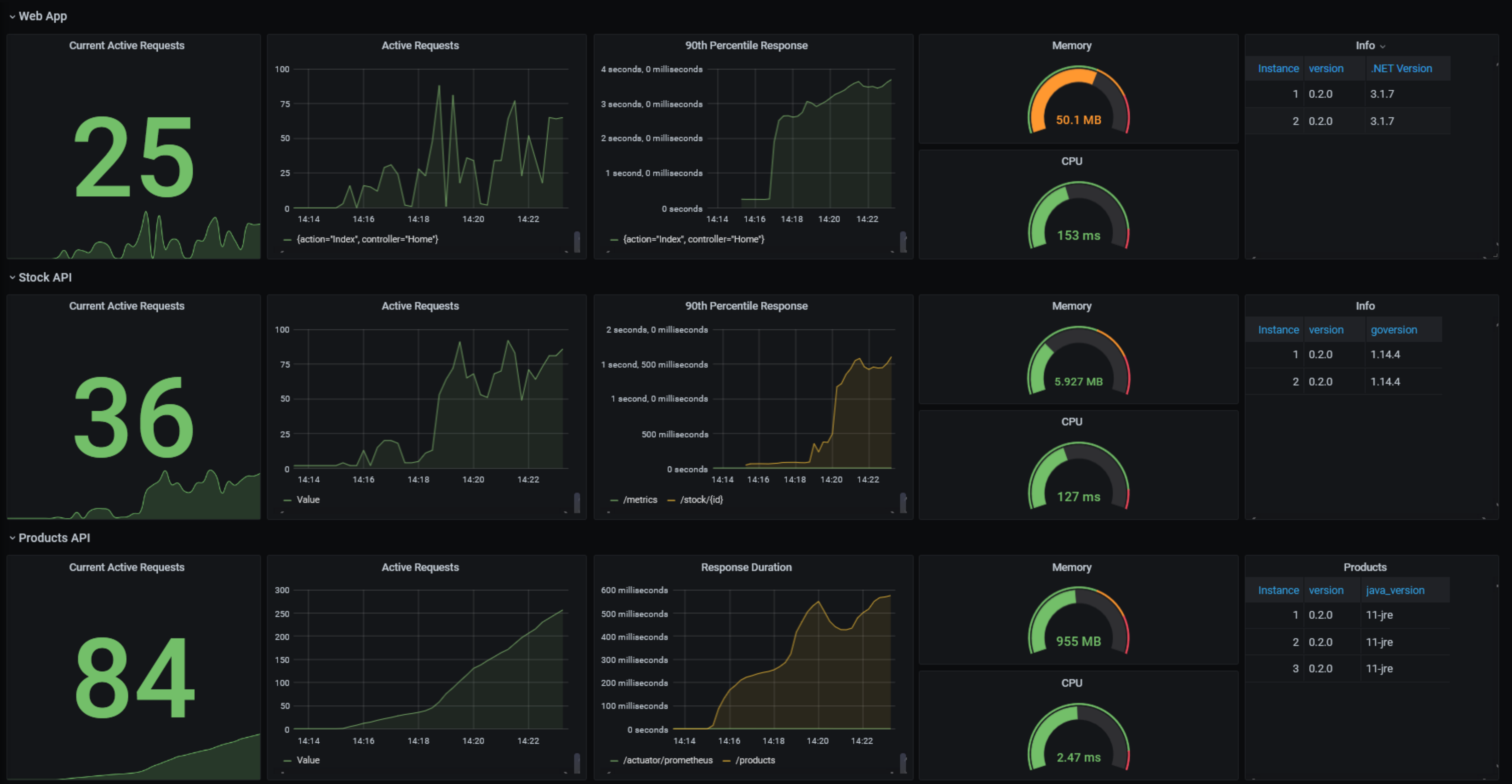

stock-api (v1)
01
02
stock-api (v2)
01
02


app_info
{ version="v1" }
app_info
{ version="v2" }
stock-api (v1)
01
02
stock-api (v2)
01
02

Demo

Visualizing application metrics

- Loading a Grafana dashboard
- Powering visualizations with PromQL
- Running performance tests



Web App

Current Active Requests

25

Active Requests

90th Percentile Response

4 seconds, 0 milliseconds
3 seconds, 0 milliseconds
2 seconds, 0 milliseconds
1 second, 0 milliseconds
0 seconds
14:14
14:16
14:18
14:20
14:22
{action="Index", controller="Home"}

Memory

50.1 MB

CPU

153 ms

Info

Instance	version	.NET Version
1	0.2.0	3.1.7
2	0.2.0	3.1.7

Stock API

Current Active Requests

36

Active Requests

90th Percentile Response

Memory

5.927 MB

CPU

127 ms

Info

Instance	version	goversion
1	0.2.0	1.14.4
2	0.2.0	1.14.4

Products API

Current Active Requests

84

Active Requests

Response Duration

Memory

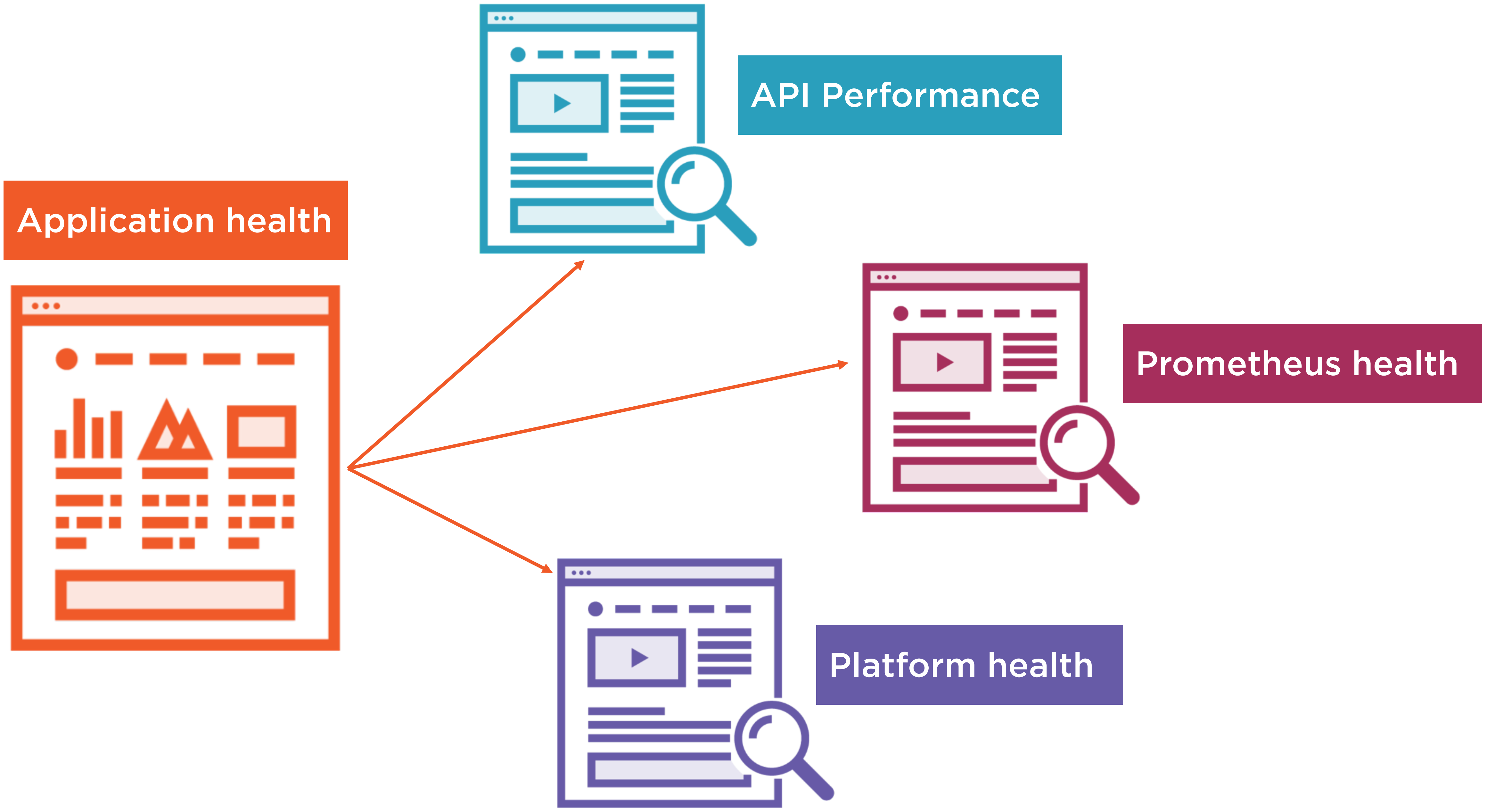
955 MB

CPU

2.47 ms

Products

Instance	version	java_version
1	0.2.0	11-jre
2	0.2.0	11-jre
3	0.2.0	11-jre


Application health
API Performance
Prometheus health
Platform health

Summary

Scraping application metrics

- Configuring dynamic environments
- Using Service Discovery

Relabelling

- Selecting targets
- Configuring targets
- Populating metric labels

Visualizing with Grafana

- Querying application metrics
- PromQL for key information
- Keep it simple

We're Done!

So…

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