

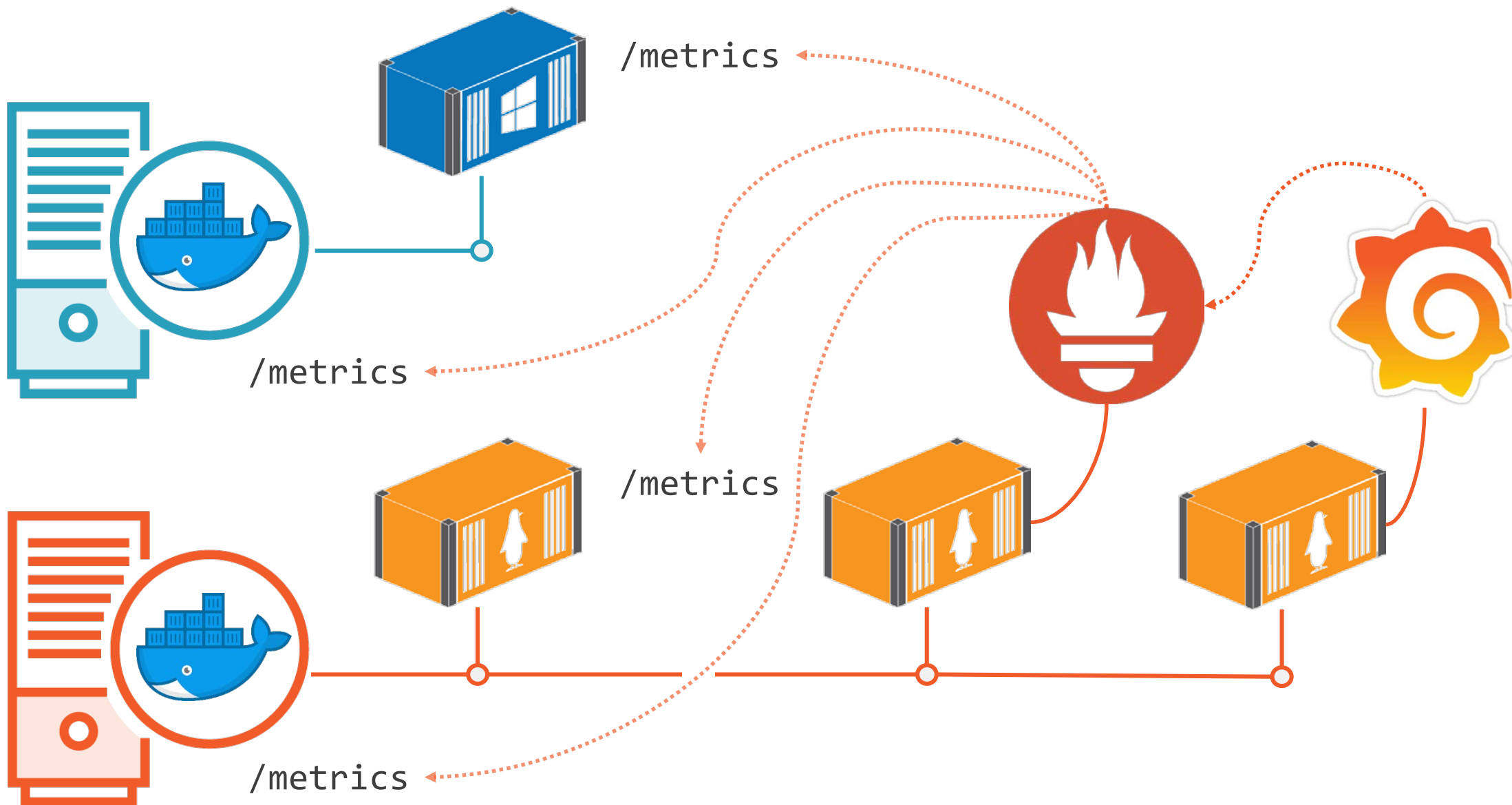
Collecting Metrics with Prometheus

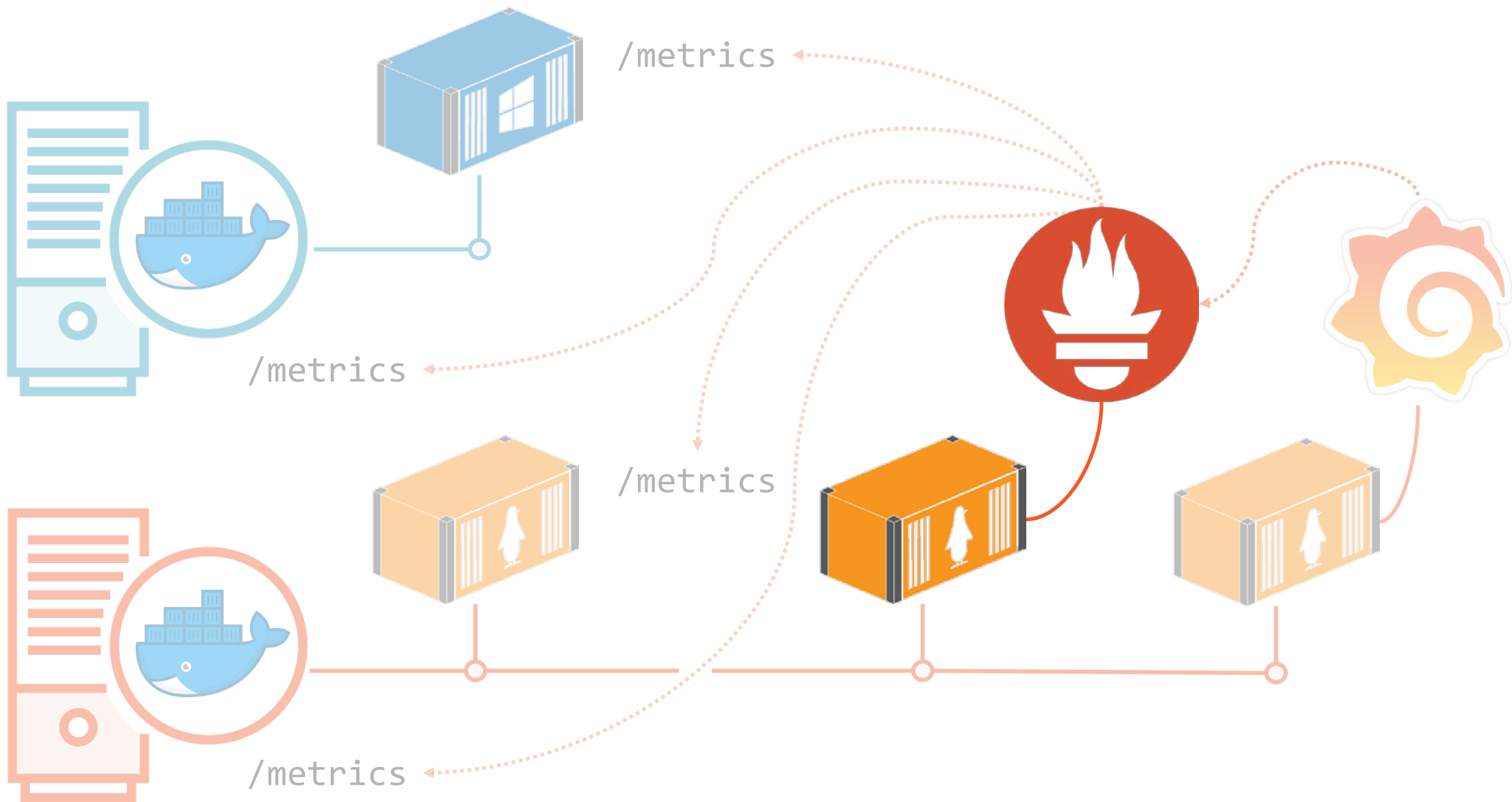


Elton Stoneman

DEVELOPER ADVOCATE

@EltonStoneman <https://blog.sixeyed.com>





Module Overview



Running Prometheus in Docker

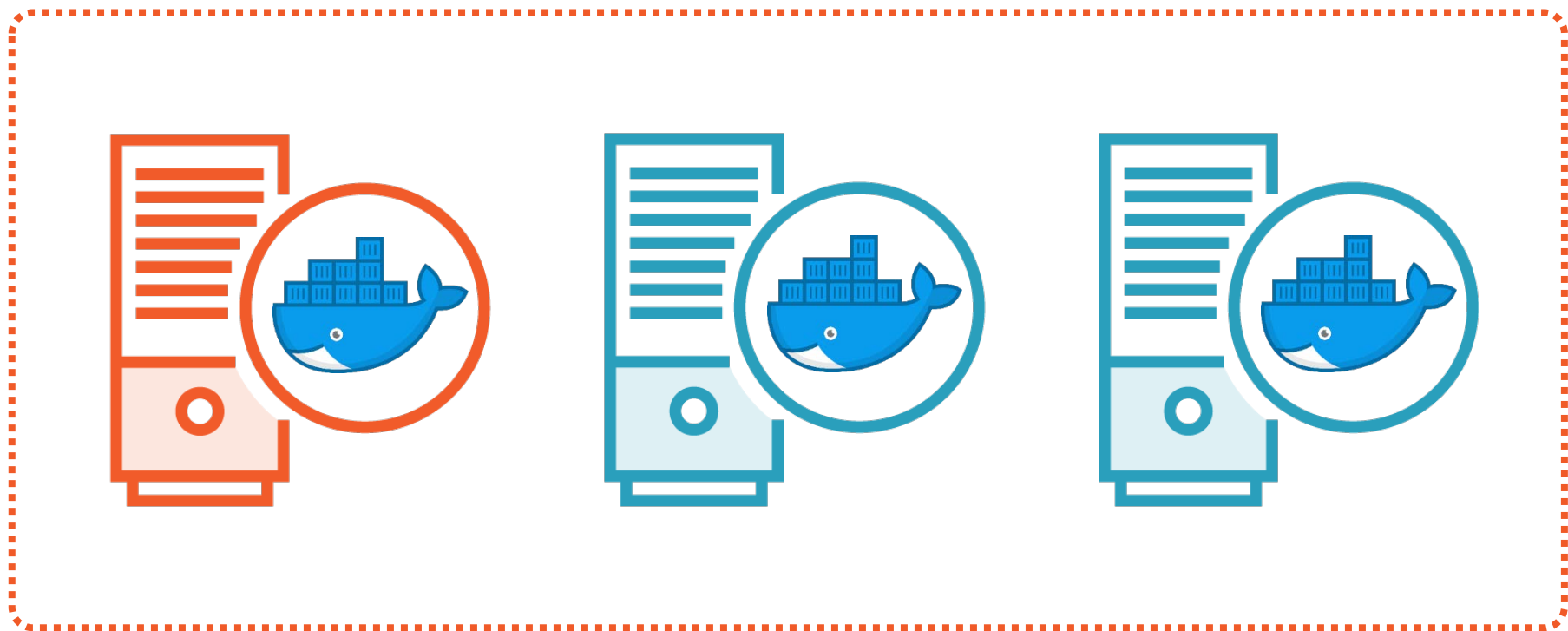
- Official Linux image
- Custom Windows image

Configuring Prometheus

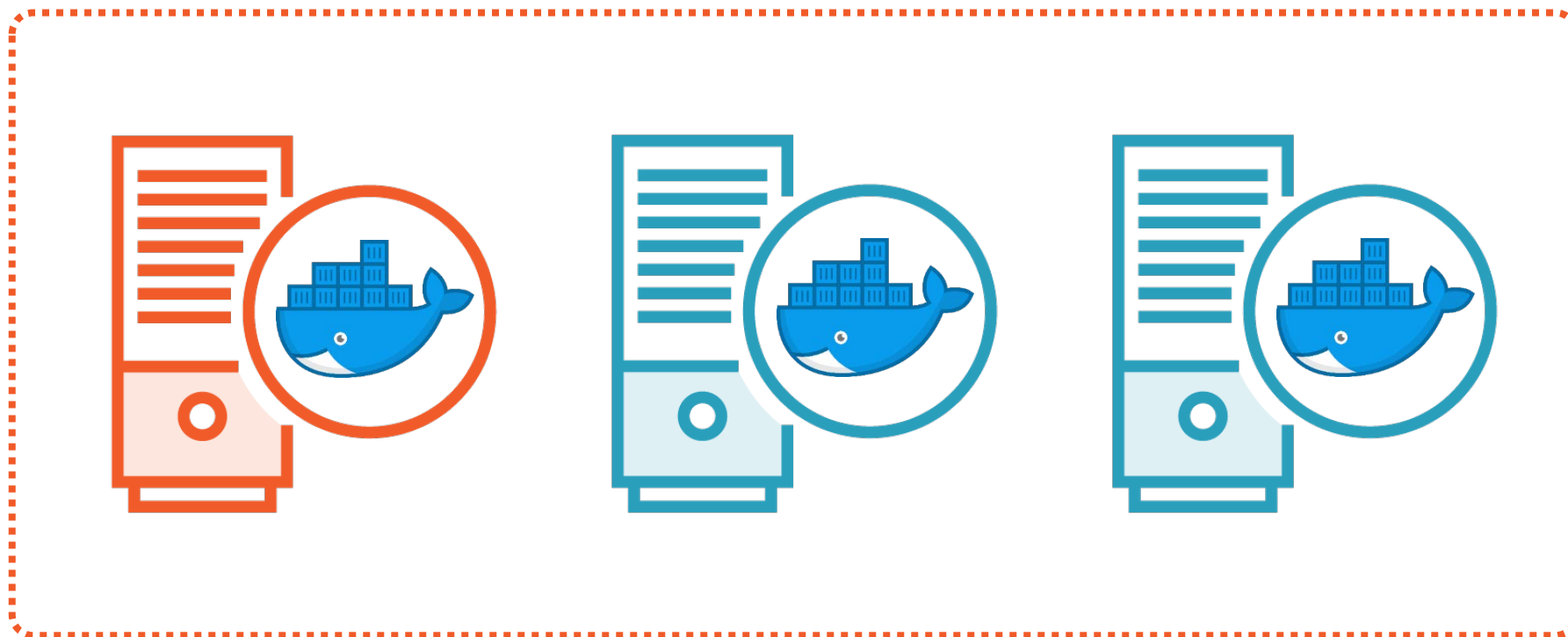
- Specifying metric targets
- Applying runtime configuration

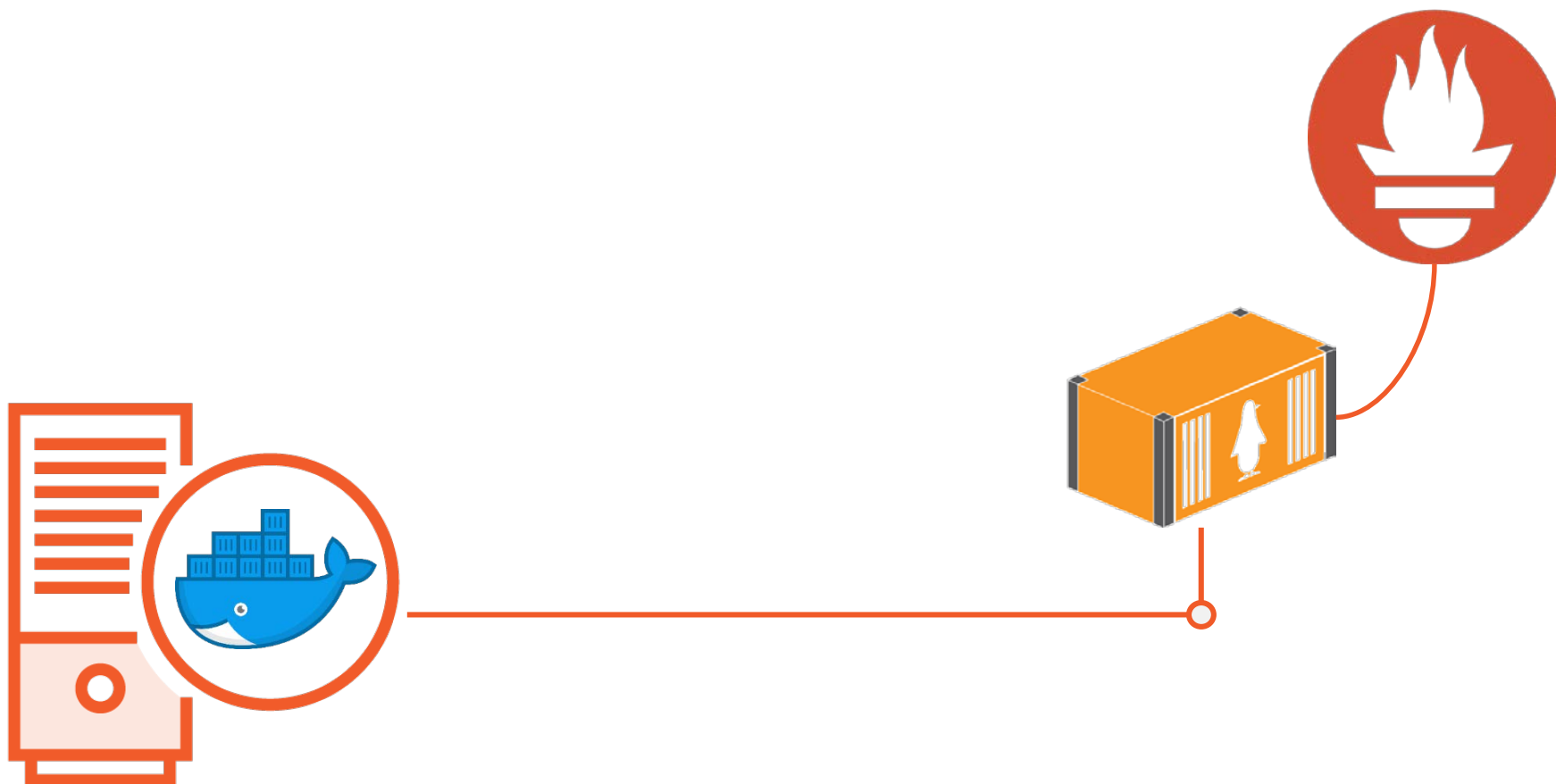
Prometheus Data Types

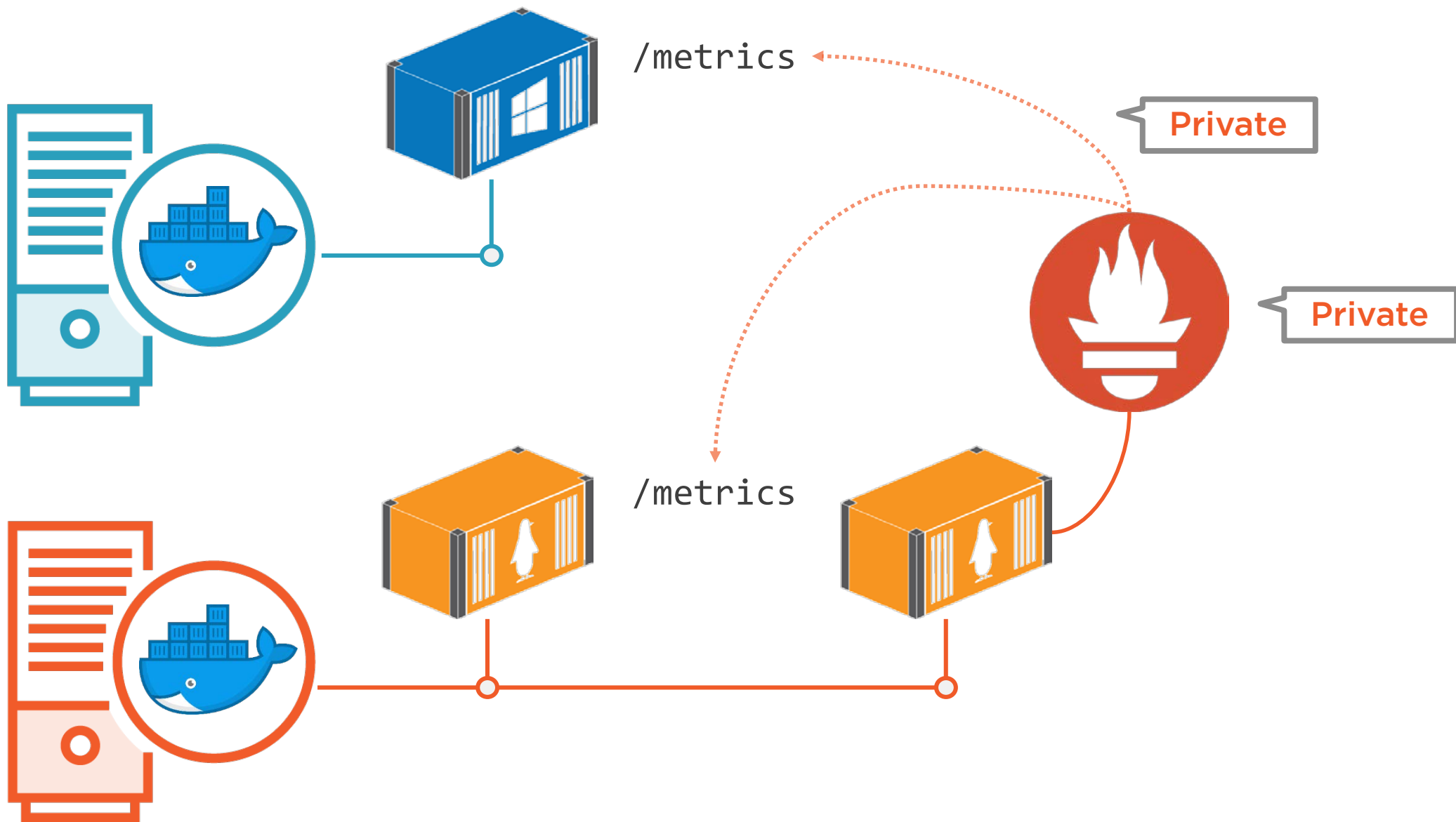
- Counters & gauges
- Querying data

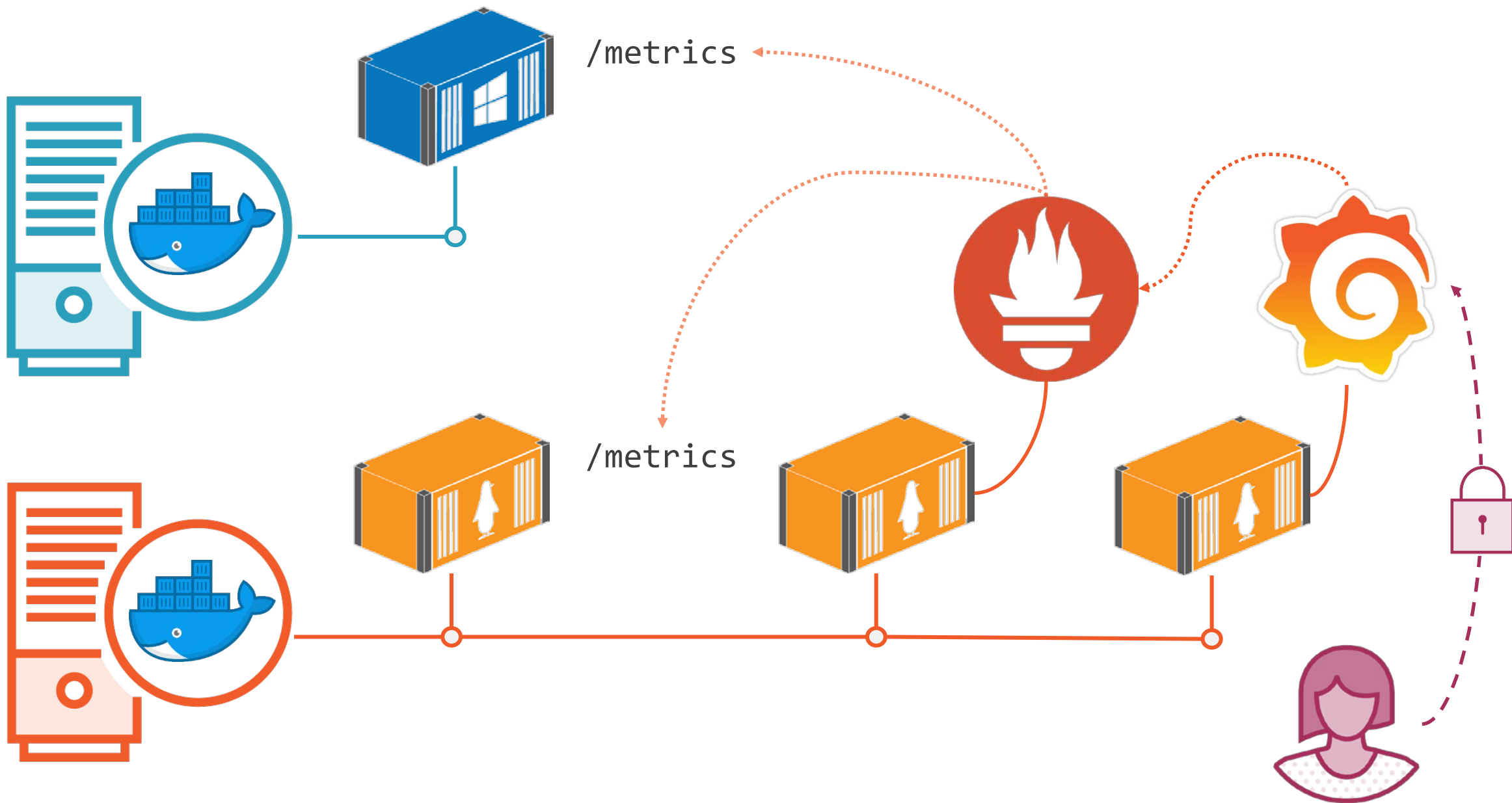


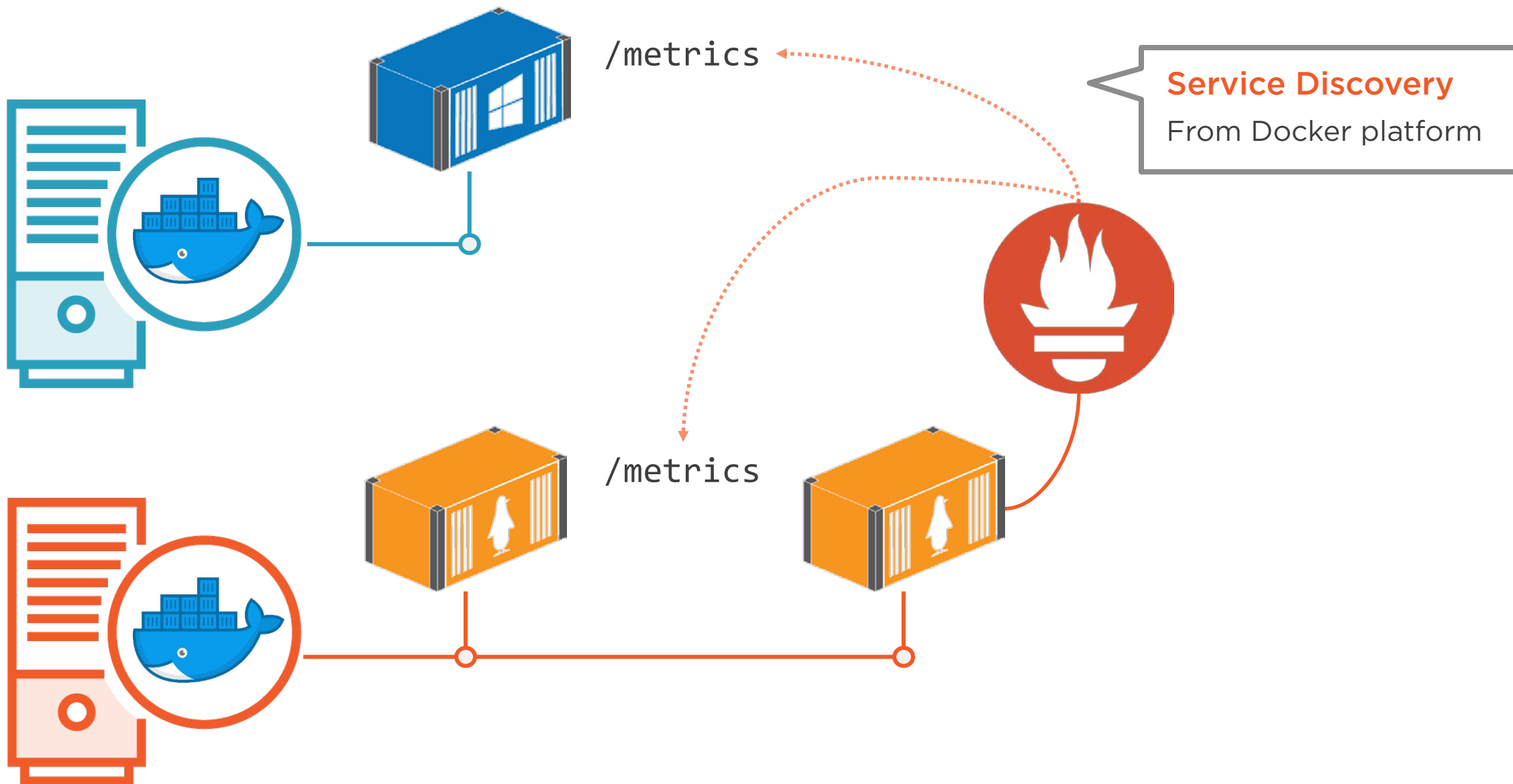


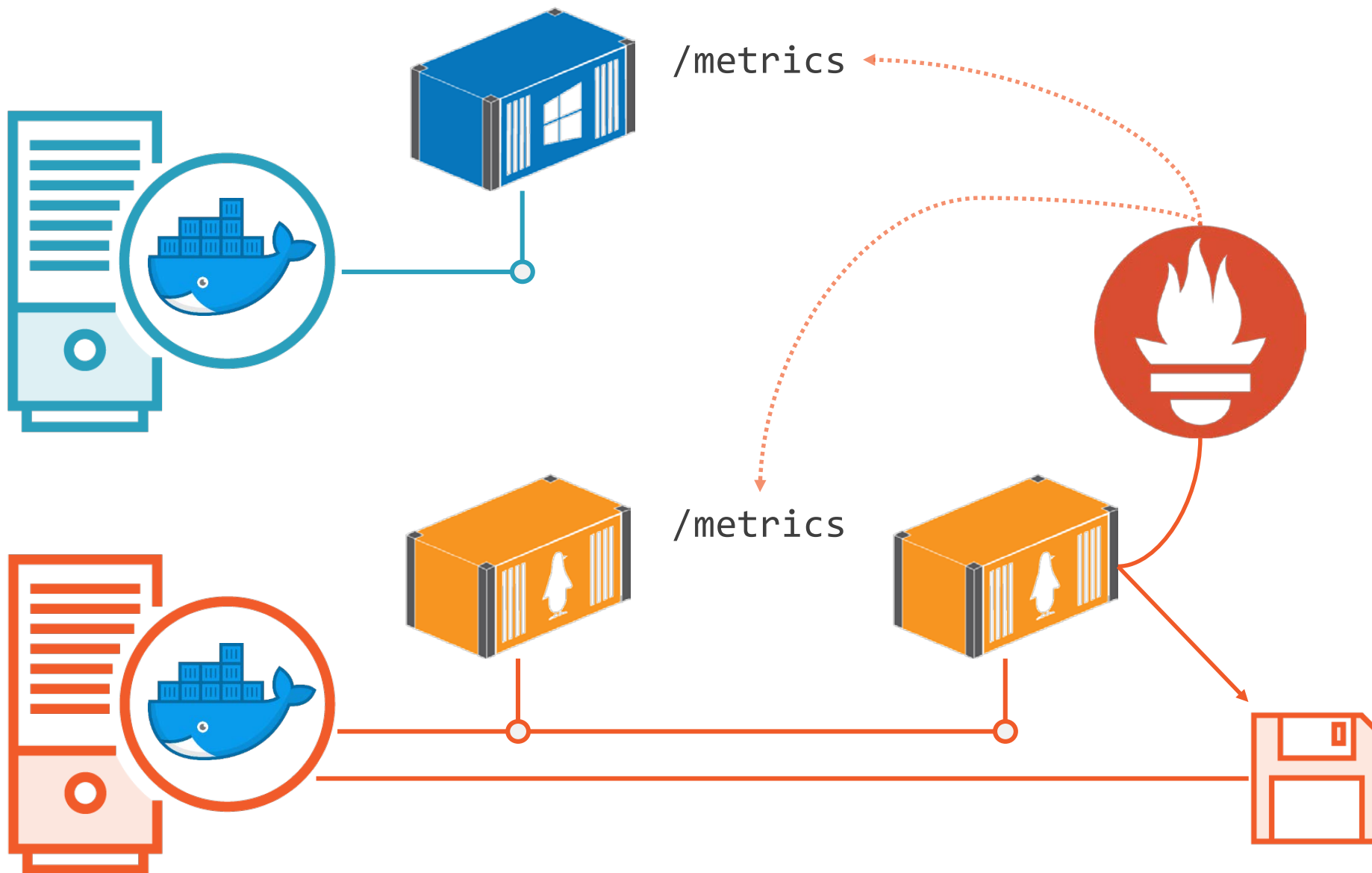




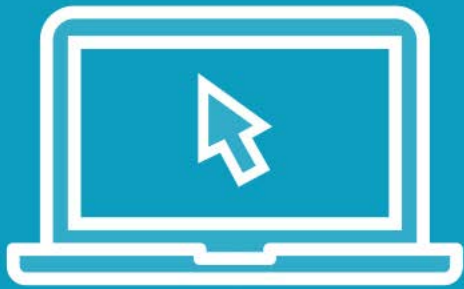








Demo



Running Prometheus in Docker

- The official Linux image
- A custom Windows image

```
global:  
    scrape_interval: 10s  
    ...  
scrape_configs:
```

Prometheus Configuration

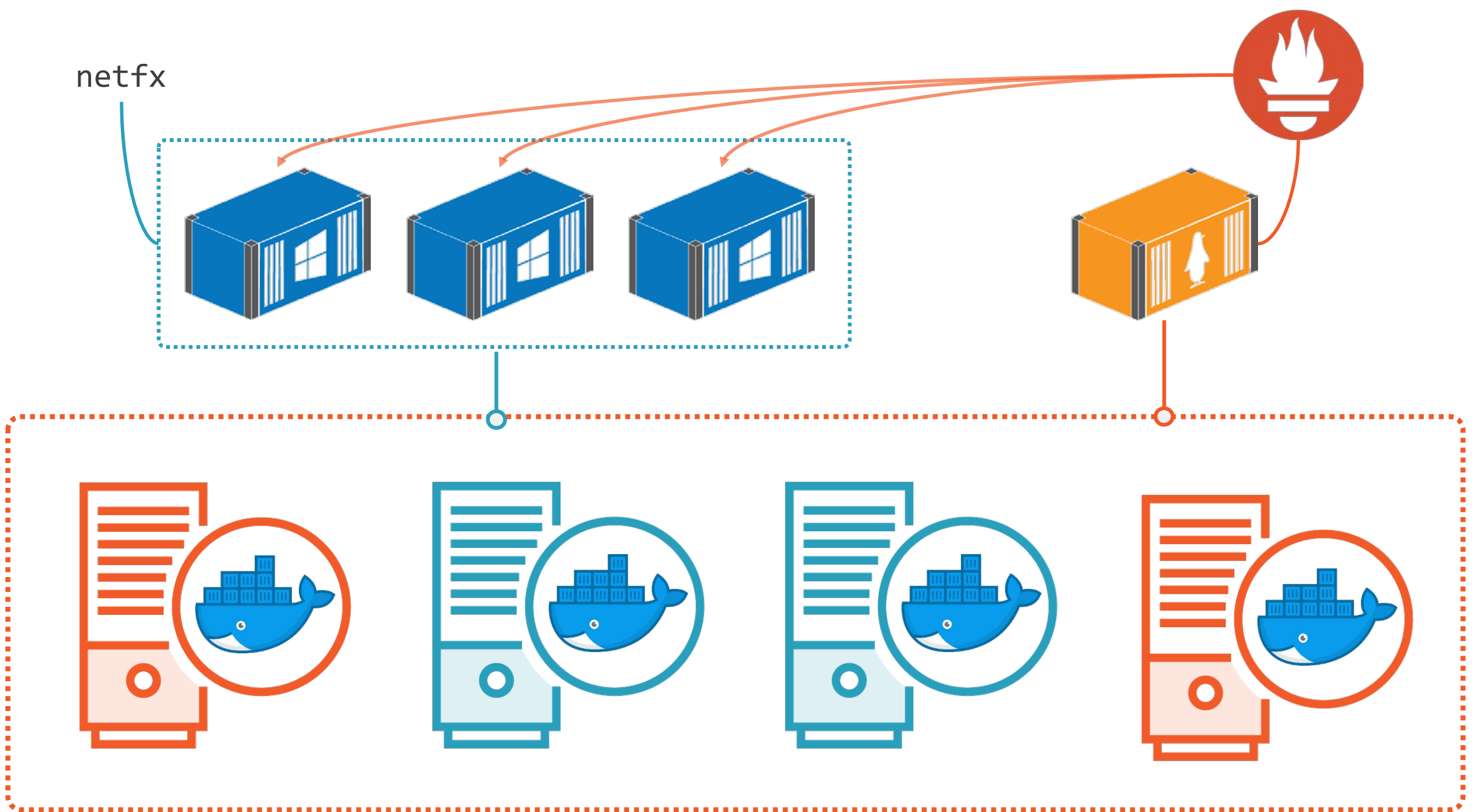
Scrape configs

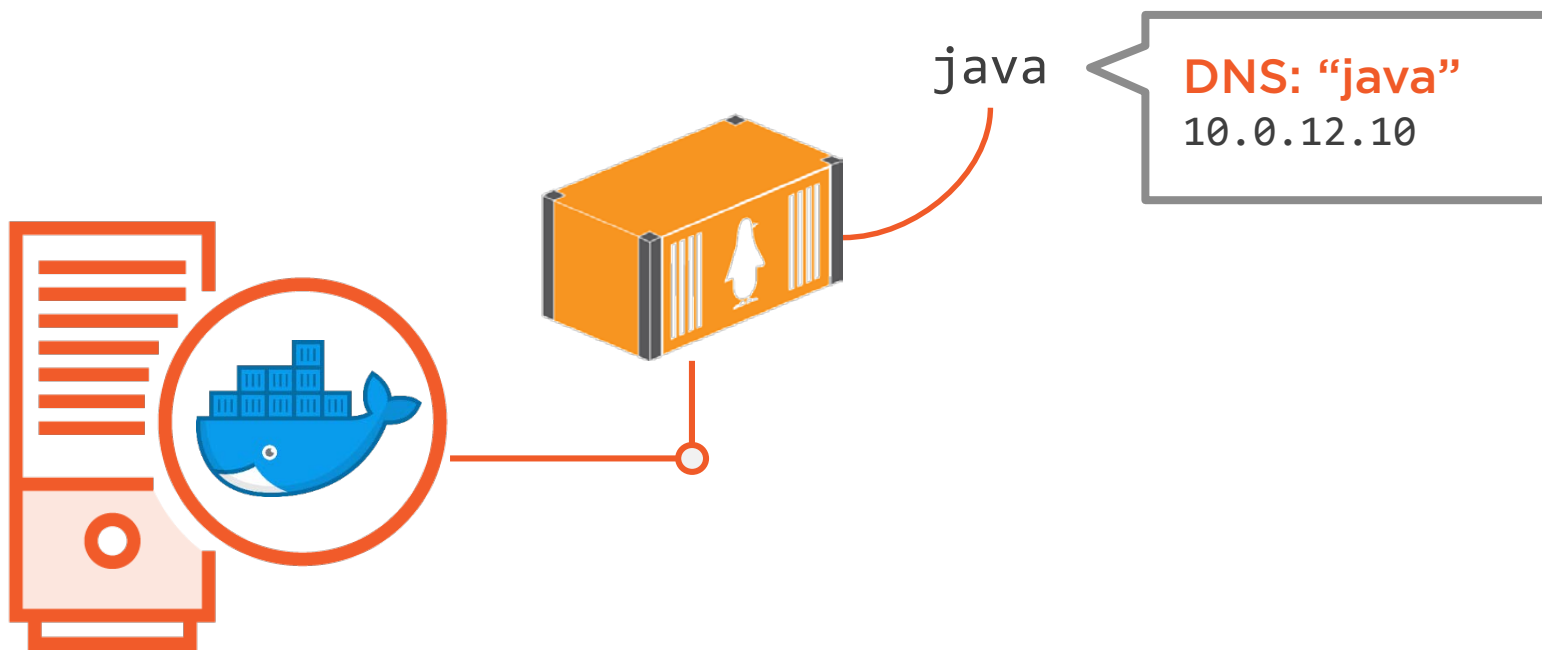
```
- job_name: 'netfx-app'
  metrics_path: /metrics/
  static_configs:
    - targets: ['netfx:50506']
```

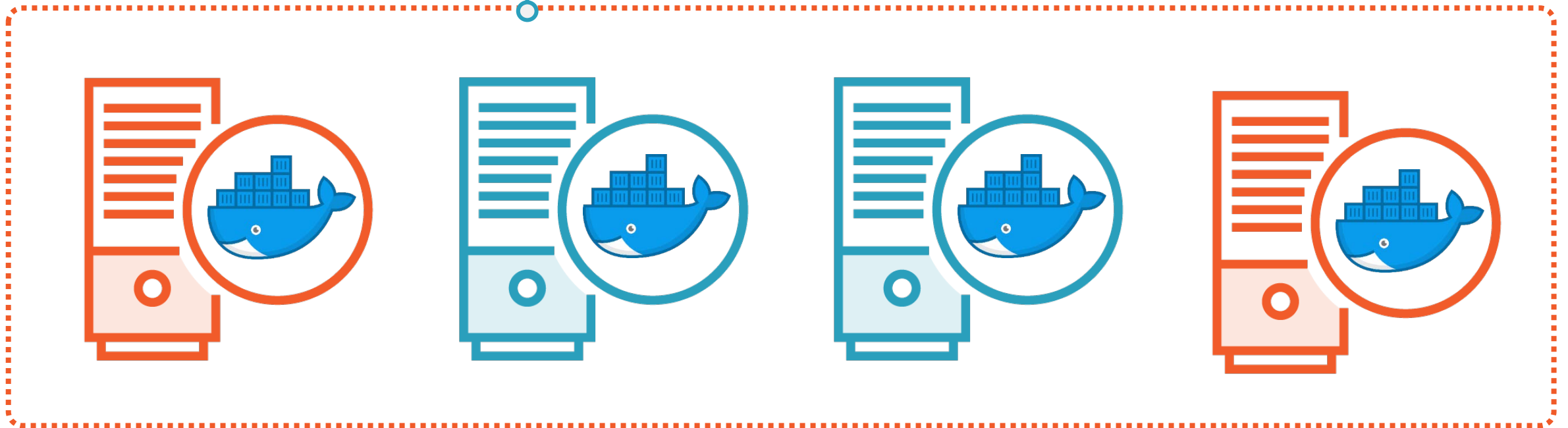
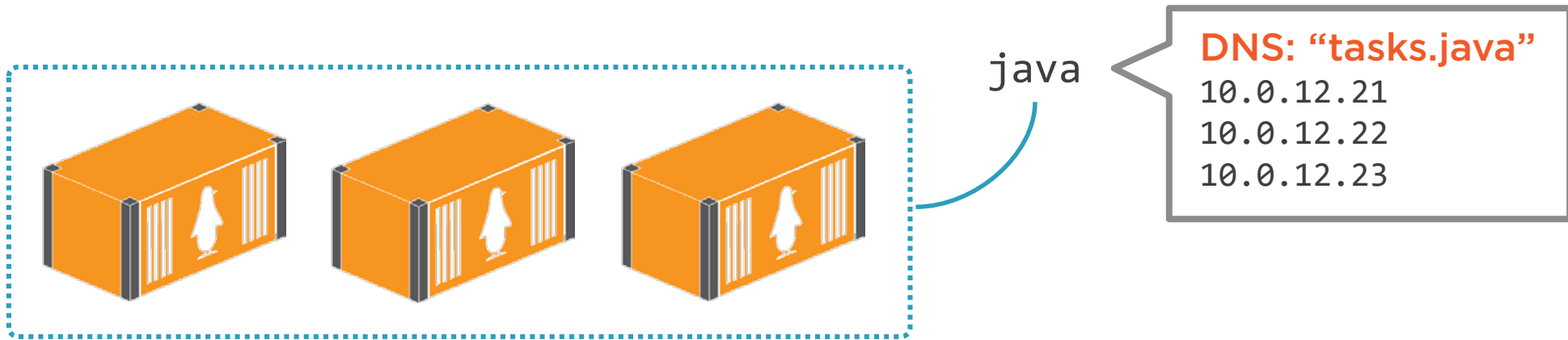
Prometheus Configuration

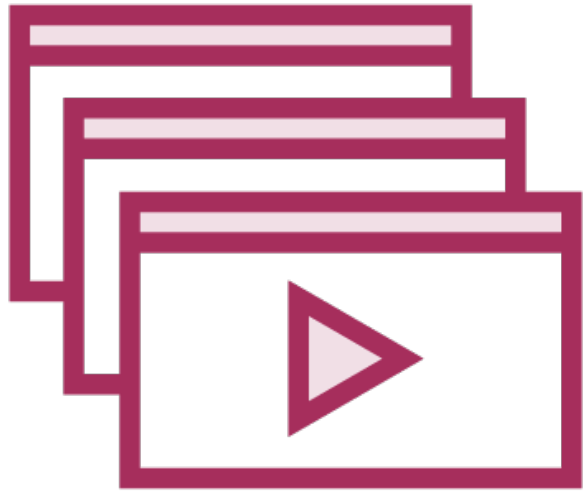
Job configs

netfx



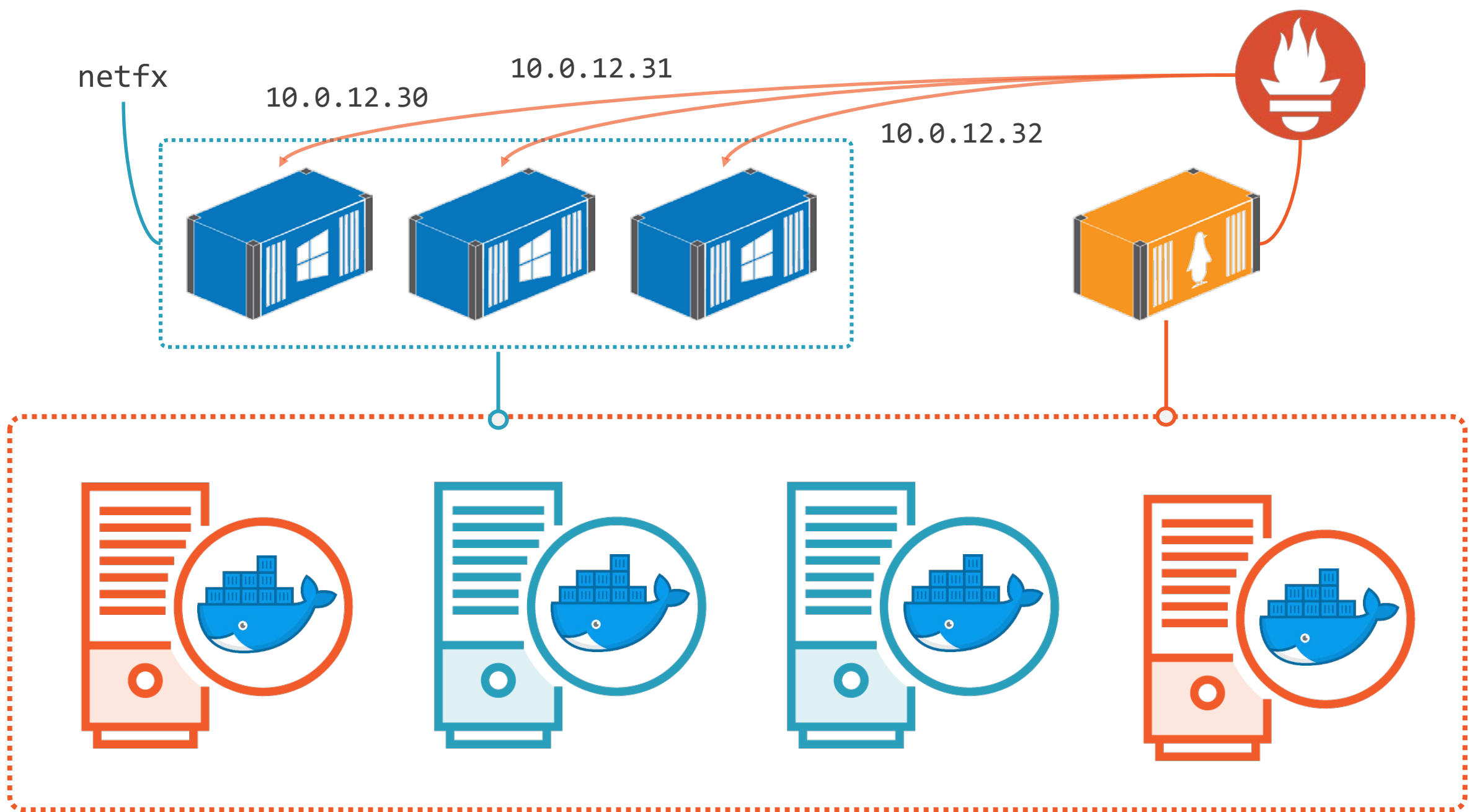


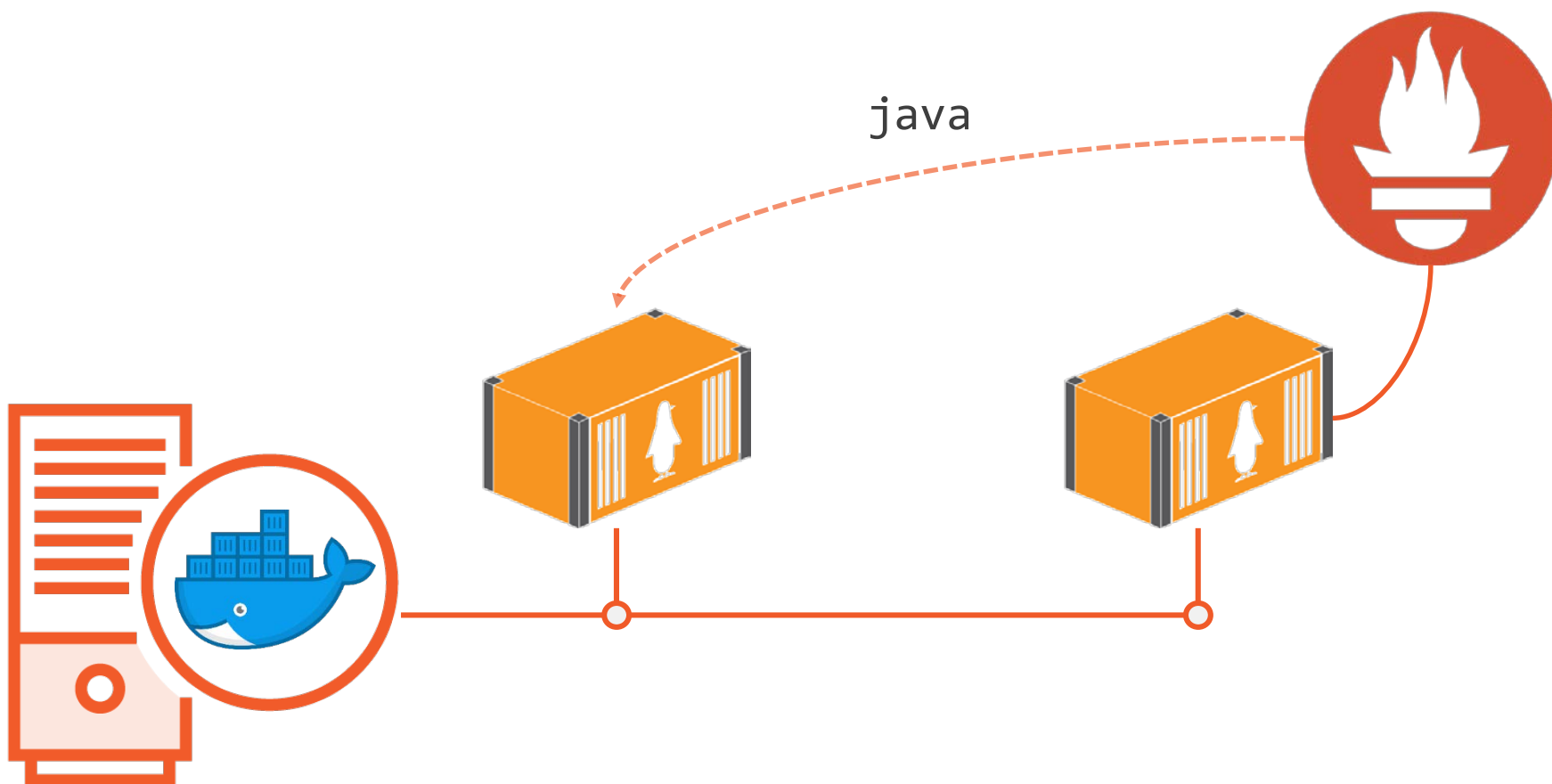




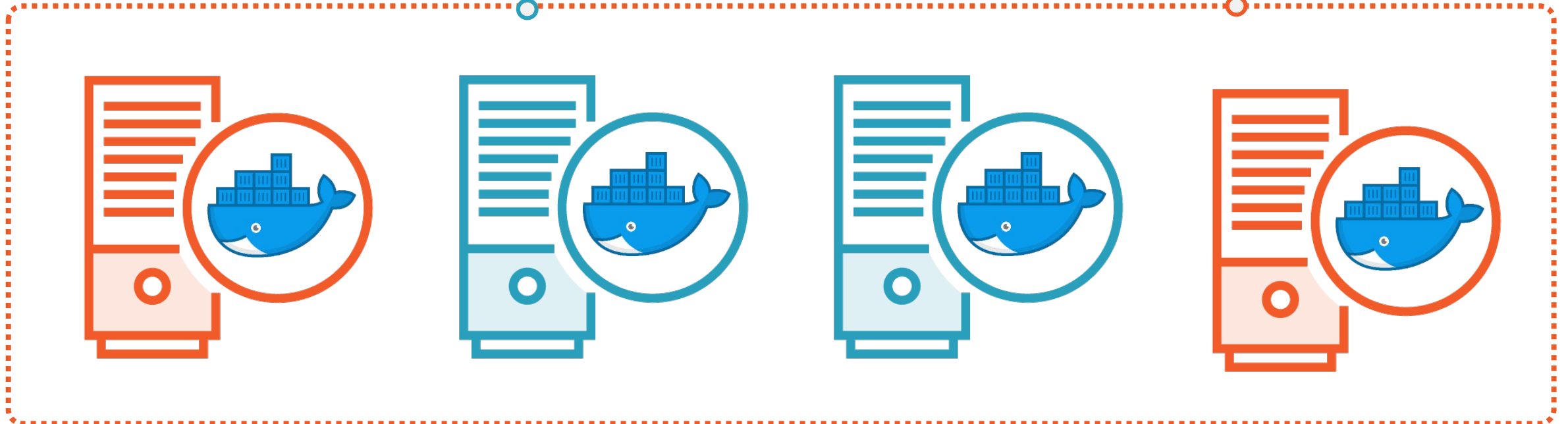
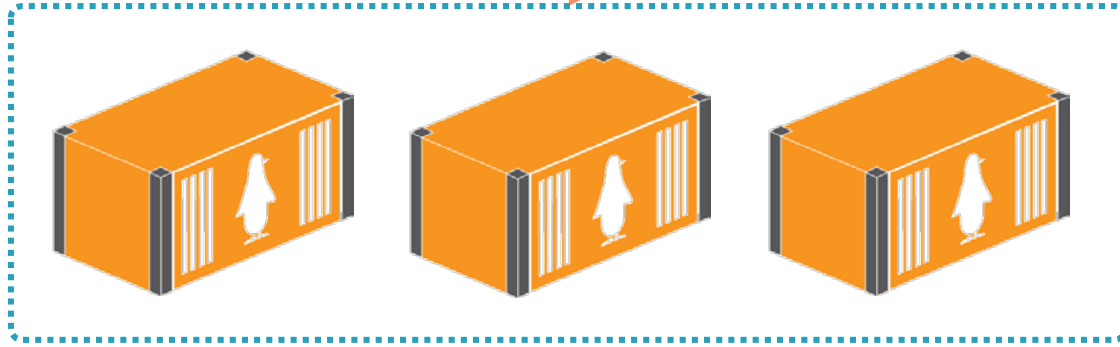
Managing Load Balancing and Scale in Docker Swarm Mode Clusters

- Elton Stoneman





tasks.java



Demo



Configuring Prometheus

- Generic dev-test configuration
- Packaging a custom image
- Running Prometheus in dev

Demo



Service Discovery in Prometheus

- Production configuration
- Using configs in Docker Swarm
- Running Prometheus in production

Module So Far...



Running Prometheus in Docker

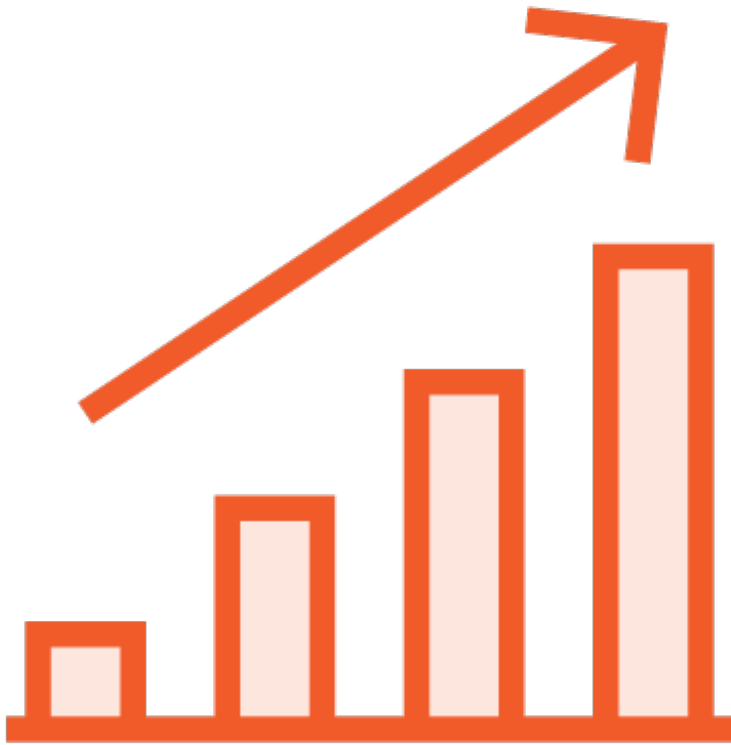
- Official Linux image
- Custom Windows image

Configuring Prometheus

- Specifying metric targets
- Applying runtime configuration

Prometheus Data Types

- Counters & gauges
- Querying data



Counter

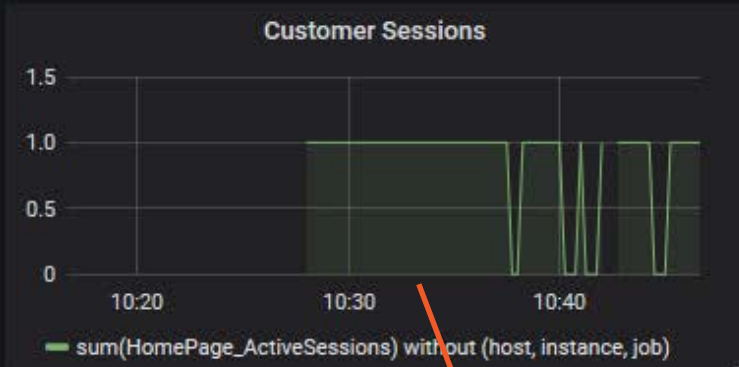
- Simple number
- Always increases
- Use for incrementing metrics
 - Requests processed
 - Errors handled



Gauge

- Simple number
- Can increase or decrease
- Use for measurements & snapshots
 - Memory consumption
 - Current thread count

Application Metrics



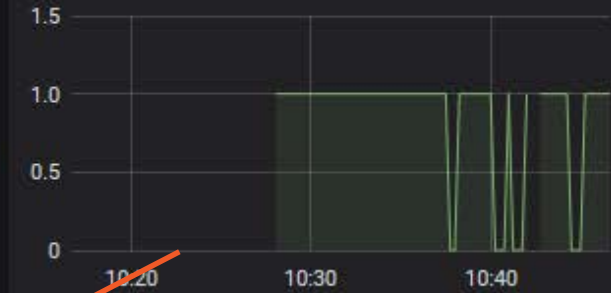
Customer Ord...

15

Cart Items

43

Management Sessions



Stock Orders

7

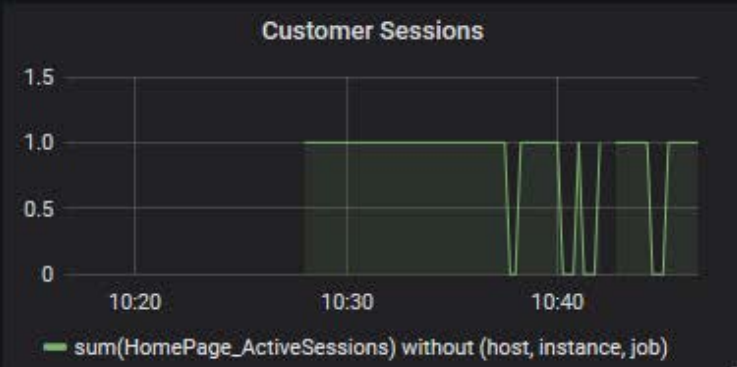


Gauges



Counters

Application Metrics



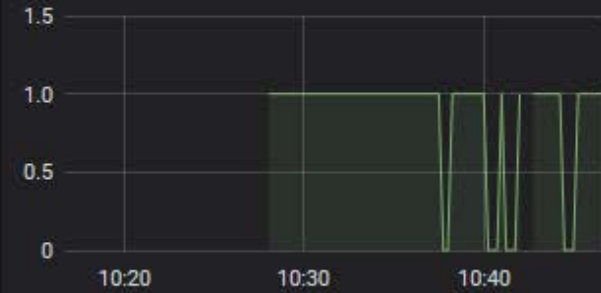
Customer Ord...

15

Cart Items

43

Management Sessions



Stock Orders

7

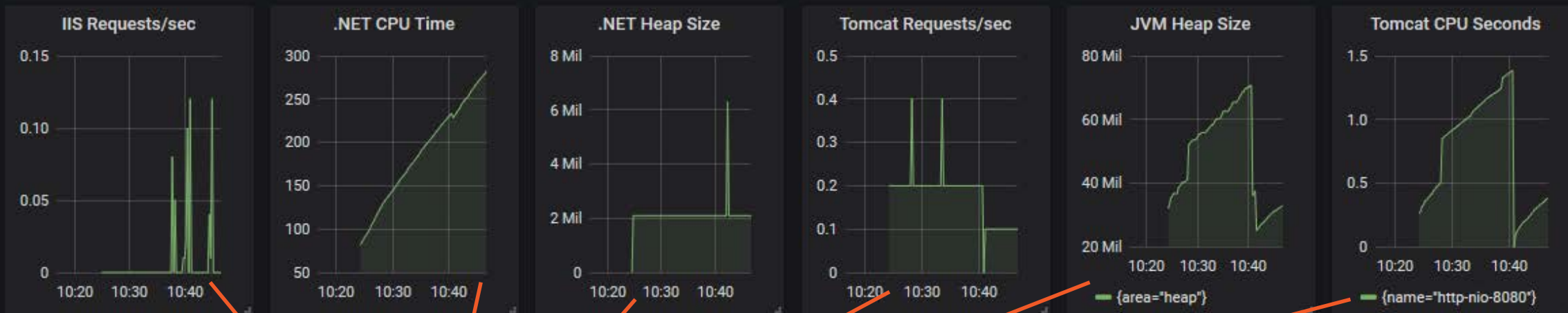


Gauges



Counters

Runtime Metrics



Gauges



Counters

▼ Docker Metrics

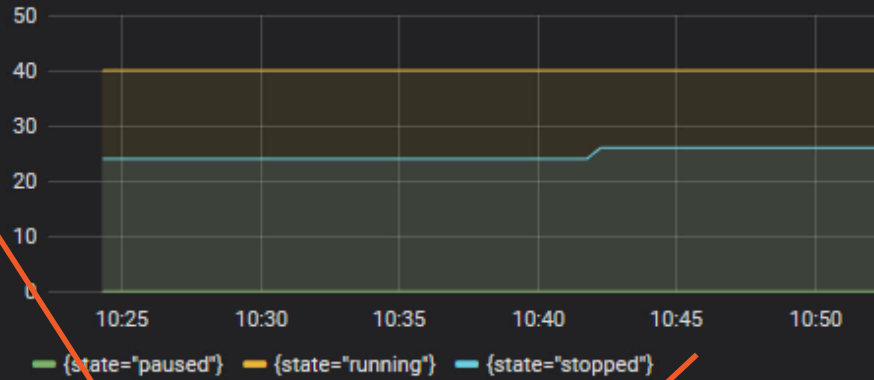
Nodes Online

4

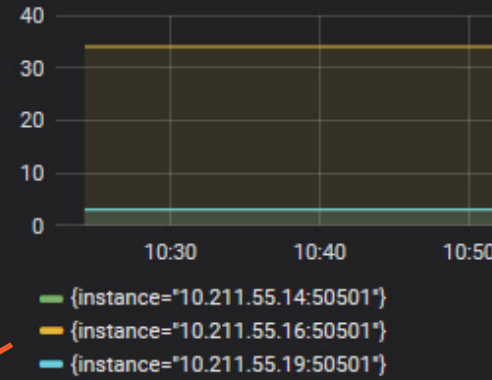
Nodes Offline

0

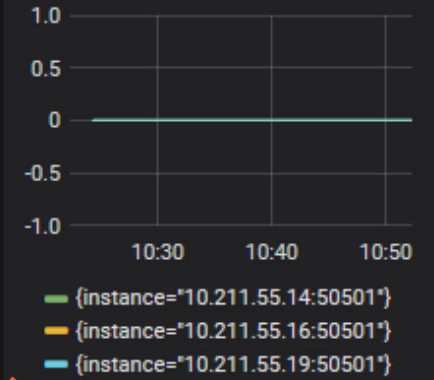
Container States



Running Containers



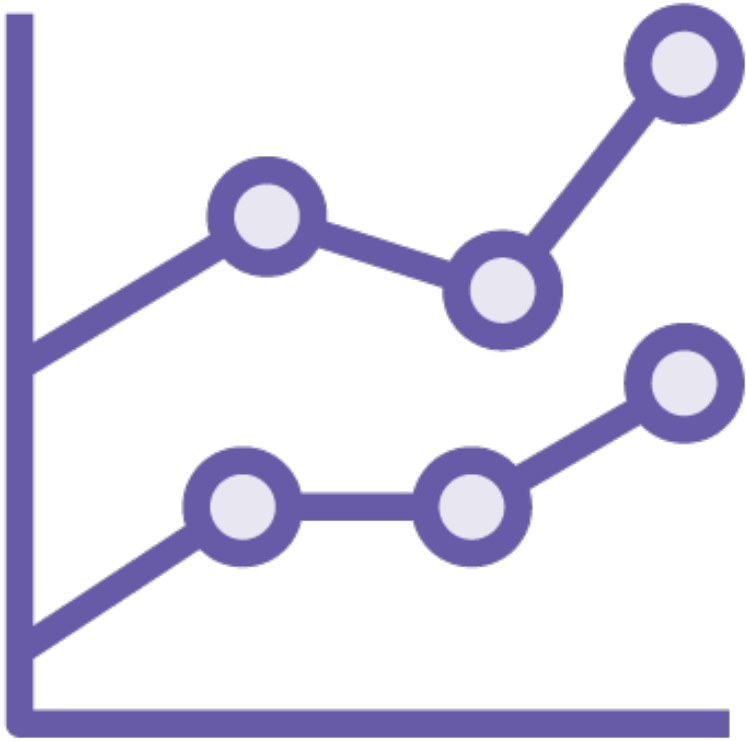
Failed Healthchecks



Gauges



Counters



Histograms & Summaries

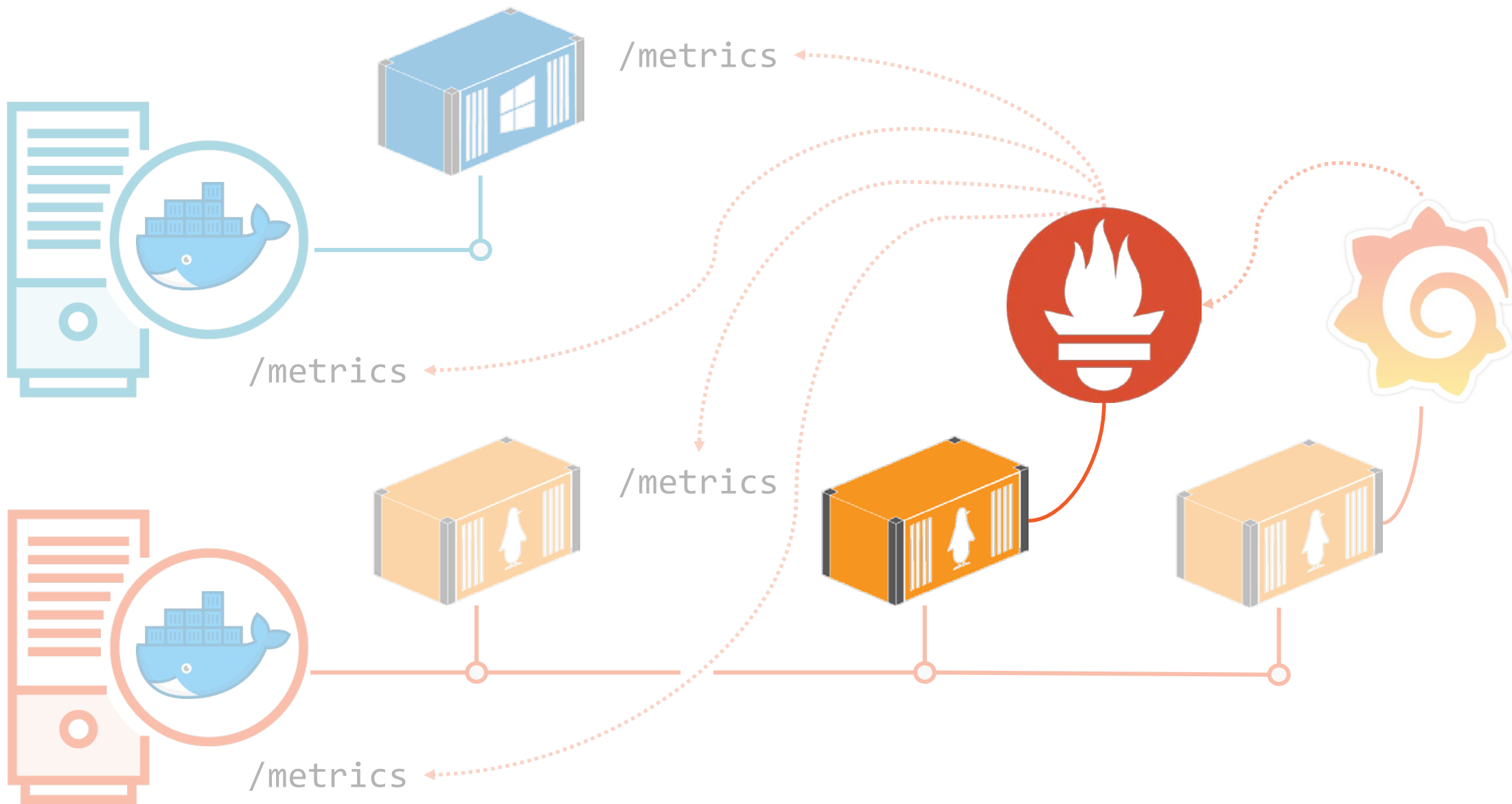
- Groups of samples
- Record count of samples & total
- Use for quantiles
 - 95th percentile SLA
- Not supported by all clients

Demo



Counters & Gauges in Prometheus

- Using counters and gauges
- Working with PromQL
- Query functions and operators



Module Summary



Running Prometheus in Docker

- Official Linux image
- Custom Windows image

Configuring Prometheus

- Specifying metric targets
- Applying runtime configuration

Prometheus Data Types

- Counters & gauges
- Querying data

Coming Next



Exposing Runtime Metrics to Prometheus

- Container OS metrics
- Application host metrics
- Exporting for Prometheus