elastic

Beats 动手实践

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elasticstack.blog.csdn.net

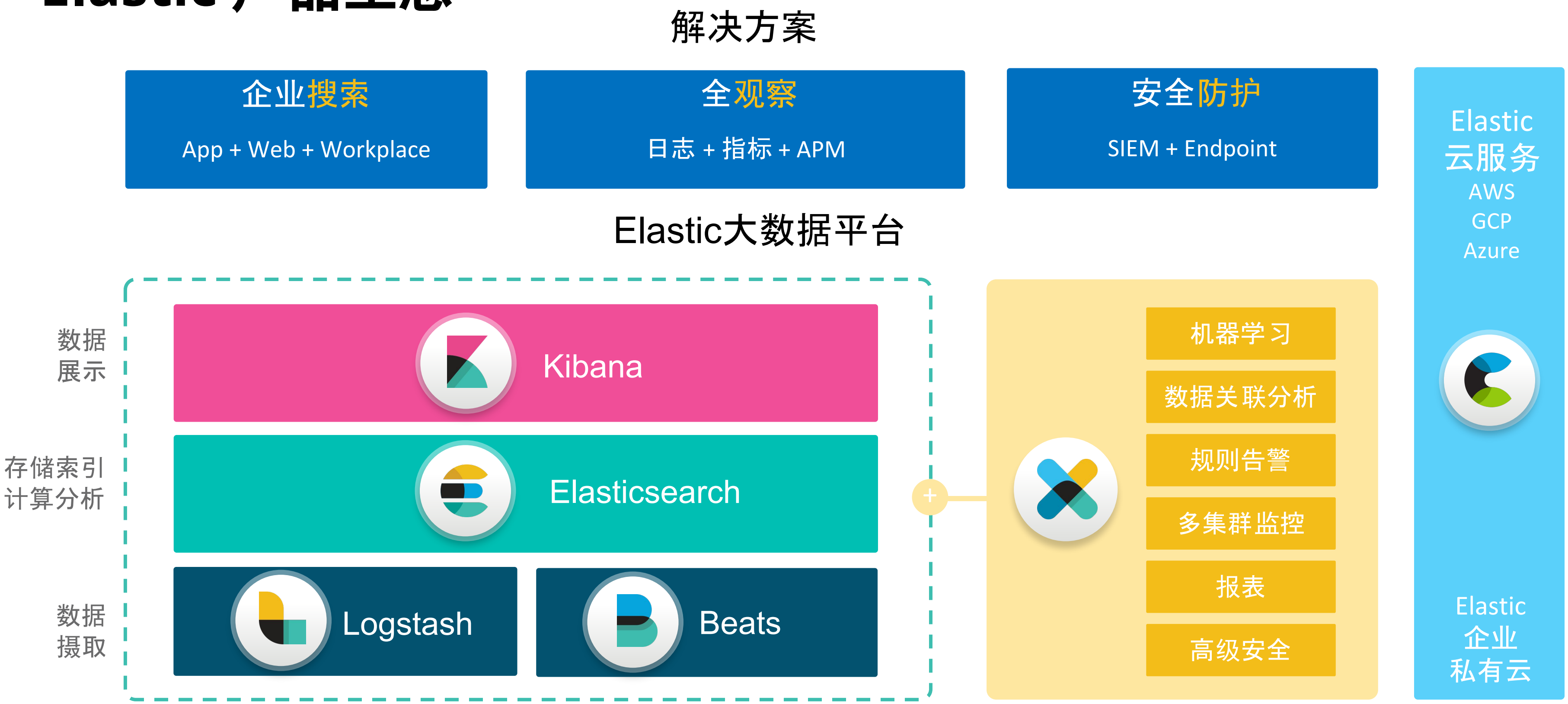
Beats 入门教程（一）https://elasticstack.blog.csdn.net/article/details/104432643
Beats 入门教程（二）https://elasticstack.blog.csdn.net/article/details/104473684

议程

- Elastic 简介
- Beats 是什么?
- 使用 Beats
  - Filebeat
  - Metricbeat

Elastic 概述

Elastic 产品生态



解决方案

企业搜索
App + Web + Workplace

全观察
日志 + 指标 + APM

安全防护
SIEM + Endpoint

Elastic大数据平台

数据展示 — Kibana

存储索引计算分析 — Elasticsearch

数据摄取 — Logstash, Beats

机器学习

数据关联分析

规则告警

多集群监控

报表

高级安全

Elastic 云服务
AWS
GCP
Azure

Elastic 企业私有云

Beats 是什么？

轻量级的数据摄入器

elastic

- Beats是一个轻量级的数据摄入器或代理，这些代理收集并运送各种运营数据到 Elasticsearch
- Beats使将数据输入到 Elasticsearch 变得容易
- 在许多操作系统上可用，例如Debian，Redhat，Linux和Mac

https://www.elastic.co/products/beats

Beats 家族

Packetbeat
Network data

Auditbeat
Audit data

Metricbeat
Metrics

Filebeat
Log files

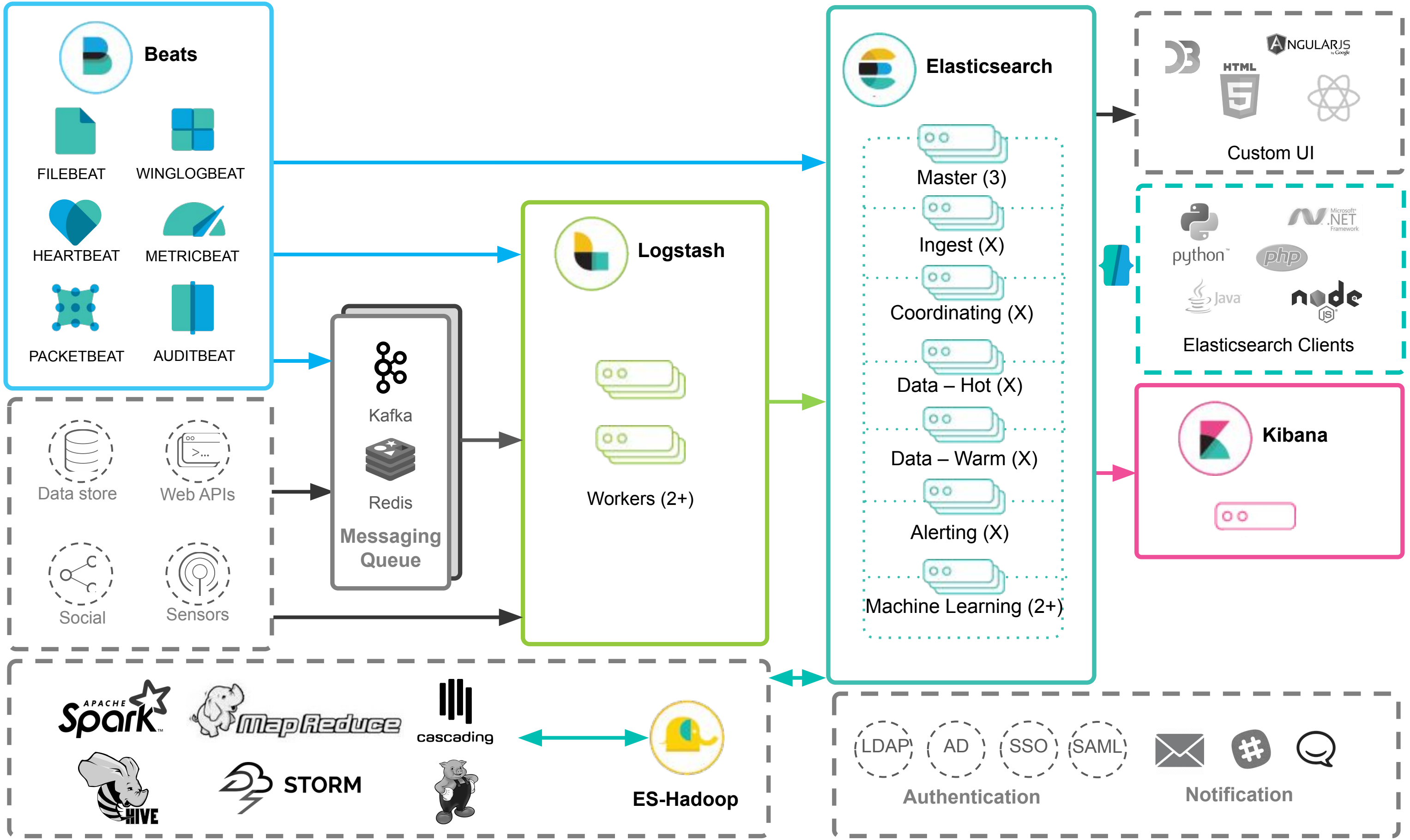
Winlogbeat
Windows Event Logs

Heartbeat
Uptime monitoring

Functionbeat
Serverless shipper
for cloud

+90 community Beats

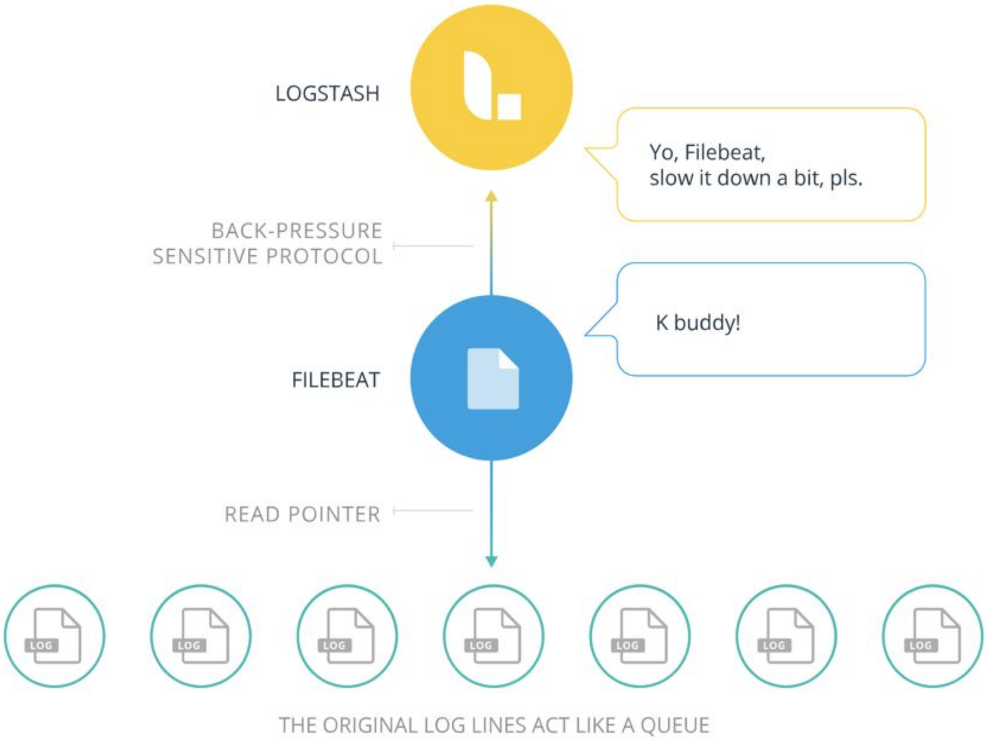
Beats 是如何接入到Elasticsearch中的?



使用 Beats

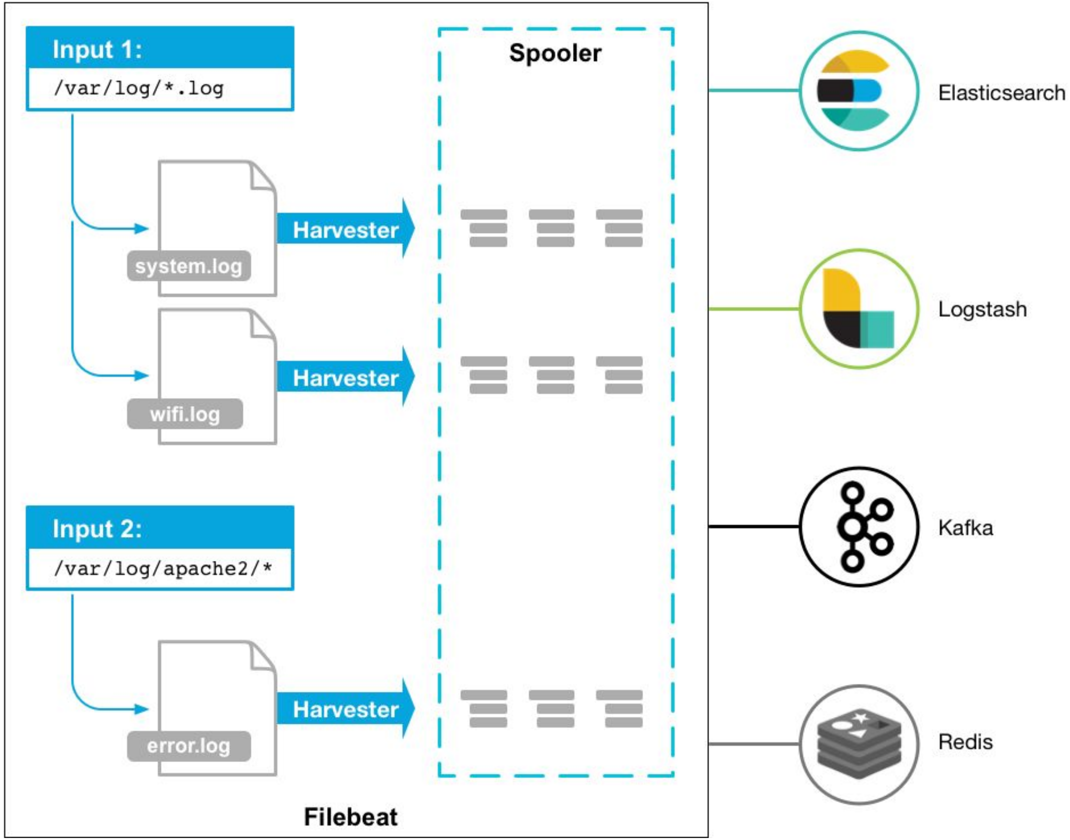
Filebeat

- 正确处理日志轮转
- 背压机制
- 至少一次数据消费保证
- 结构化日志
- 多行事件处理
- 调节过滤



Filebeat 概述

- 开始一个或多个输入，查找你为日志数据指定的位置
- 对于Filebeat所找到的每个日志，Filebeat都会启动havester
- 每个havester都会读取一个日志以获取新内容，并将新日志数据发送到libbeat，libbeat会汇总事件并将汇总的数据发送到你为Filebeat配置的输出



什么是 Filebeat 模块?

Filebeat configuration

collecting

Ingest node pipelines

parsing

Elasticsearch mapping

storage schema

Kibana dashboards

visualizing

Machine learning jobs

anomaly detection

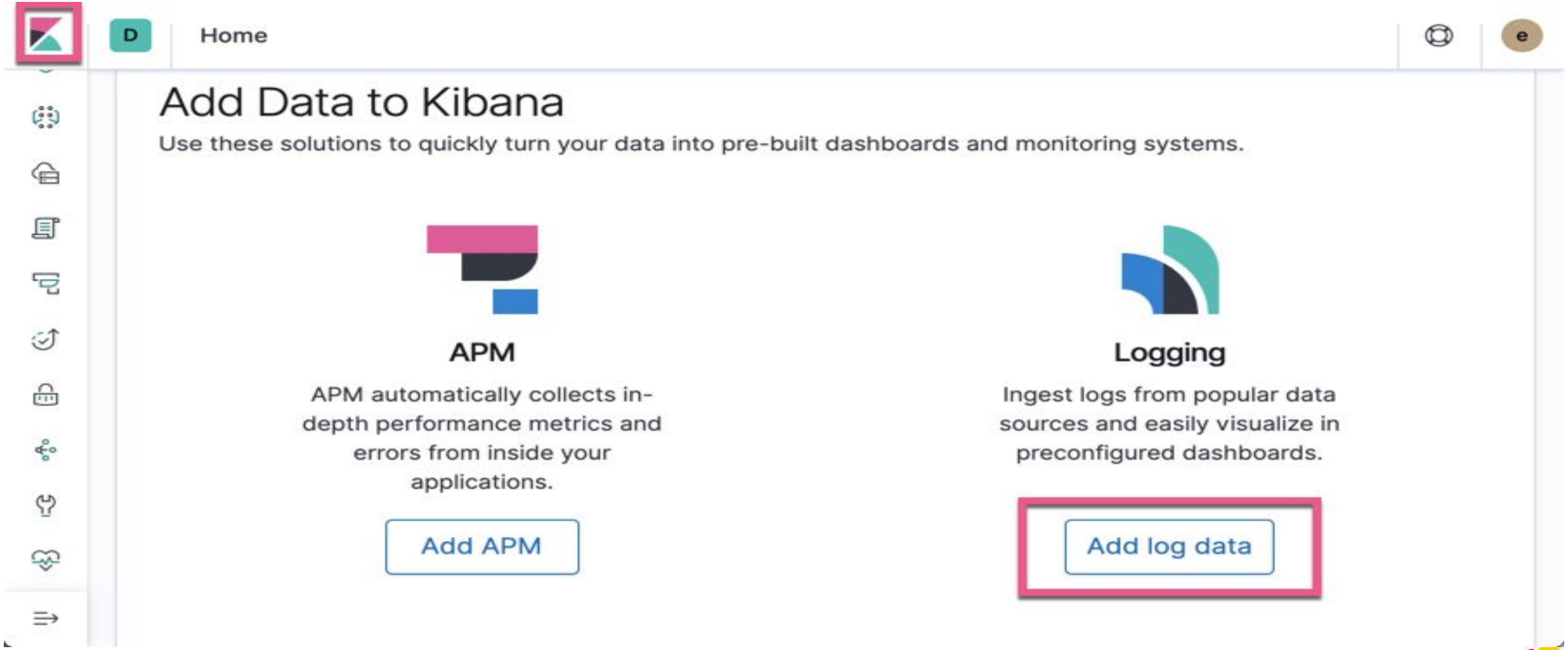
模块 - 收集,解析, 可视化为一体的预制方案

- System
- Apache
- Kafka
- Couchbase
- Redis
- HAProxy
- Elasticsearch
- Windows
- NGINX
- Zoo keeper
- CEPH
- Docker
- Golang
- Postgres
- Dropwizard
- Aerospike
- Prometheus
- MySQL
- Memcache
- Jolokia
- PHP-FPM
- Kibana
- HTTP
- Auditd

让我们来展示 Filebeat 吧

Installation for Filebeat

- Click on Kibana logo in the top left of Kibana, and select “**Add log data**”



Add Data to Kibana

Use these solutions to quickly turn your data into pre-built dashboards and monitoring systems.

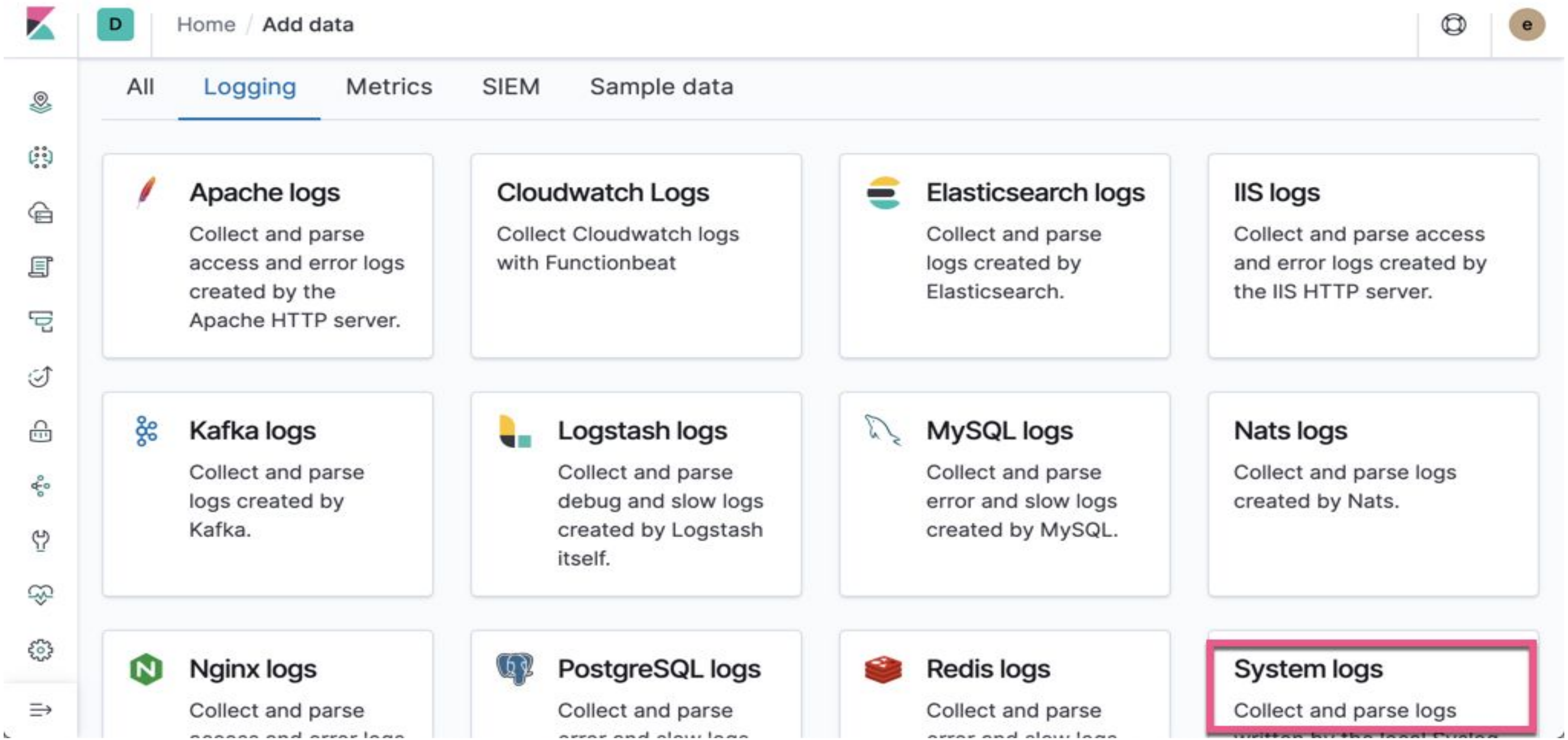
APM

APM automatically collects in-depth performance metrics and errors from inside your applications.

Logging

Ingest logs from popular data sources and easily visualize in preconfigured dashboards.

Select “System logs”



Apache logs
Collect and parse access and error logs created by the Apache HTTP server.

Cloudwatch Logs
Collect Cloudwatch logs with Functionbeat

Elasticsearch logs
Collect and parse logs created by Elasticsearch.

IIS logs
Collect and parse access and error logs created by the IIS HTTP server.

Kafka logs
Collect and parse logs created by Kafka.

Logstash logs
Collect and parse debug and slow logs created by Logstash itself.

MySQL logs
Collect and parse error and slow logs created by MySQL.

Nats logs
Collect and parse logs created by Nats.

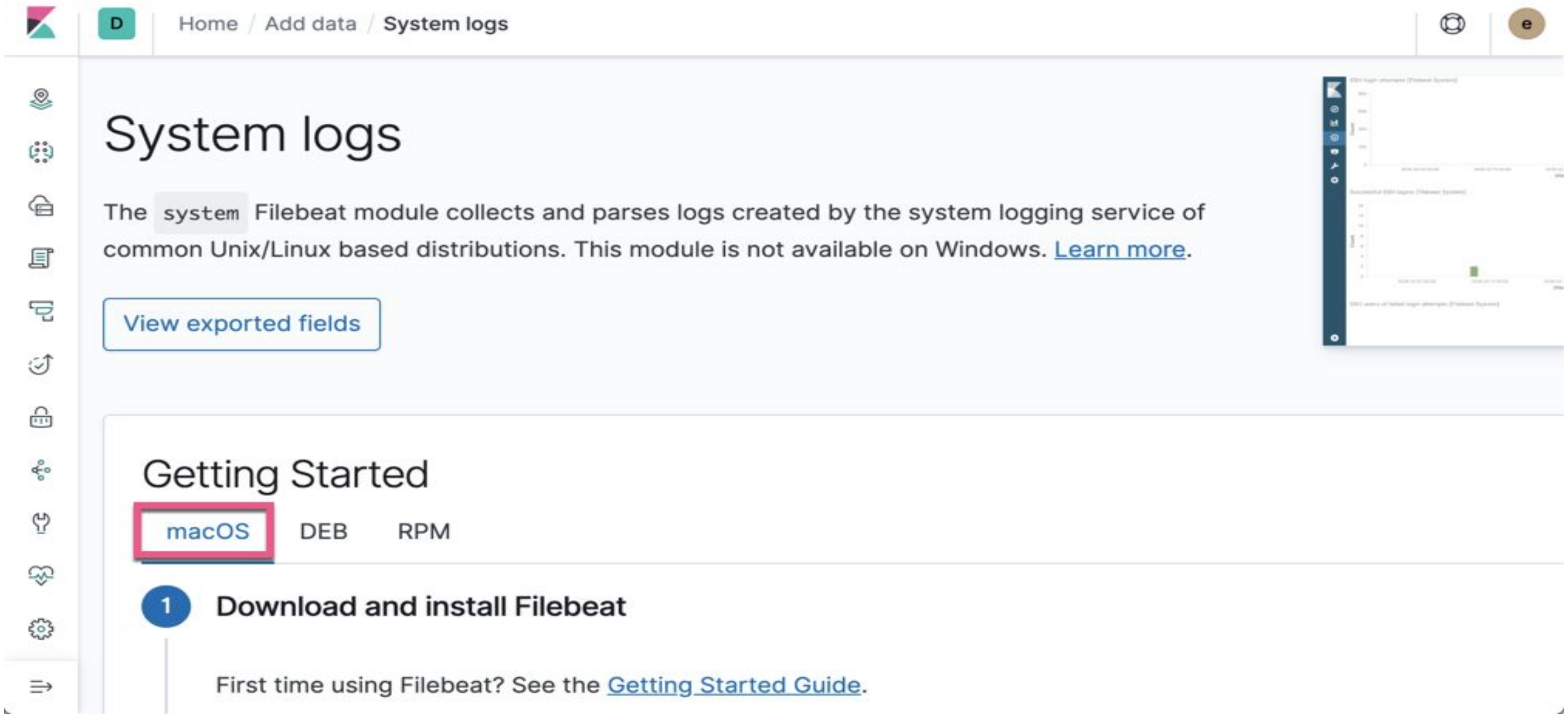
Nginx logs
Collect and parse access and error logs

PostgreSQL logs
Collect and parse error and slow logs

Redis logs
Collect and parse error and slow logs

System logs
Collect and parse logs written by the local Syslog

Select your platform



System logs

The `system` Filebeat module collects and parses logs created by the system logging service of common Unix/Linux based distributions. This module is not available on Windows. Learn more.

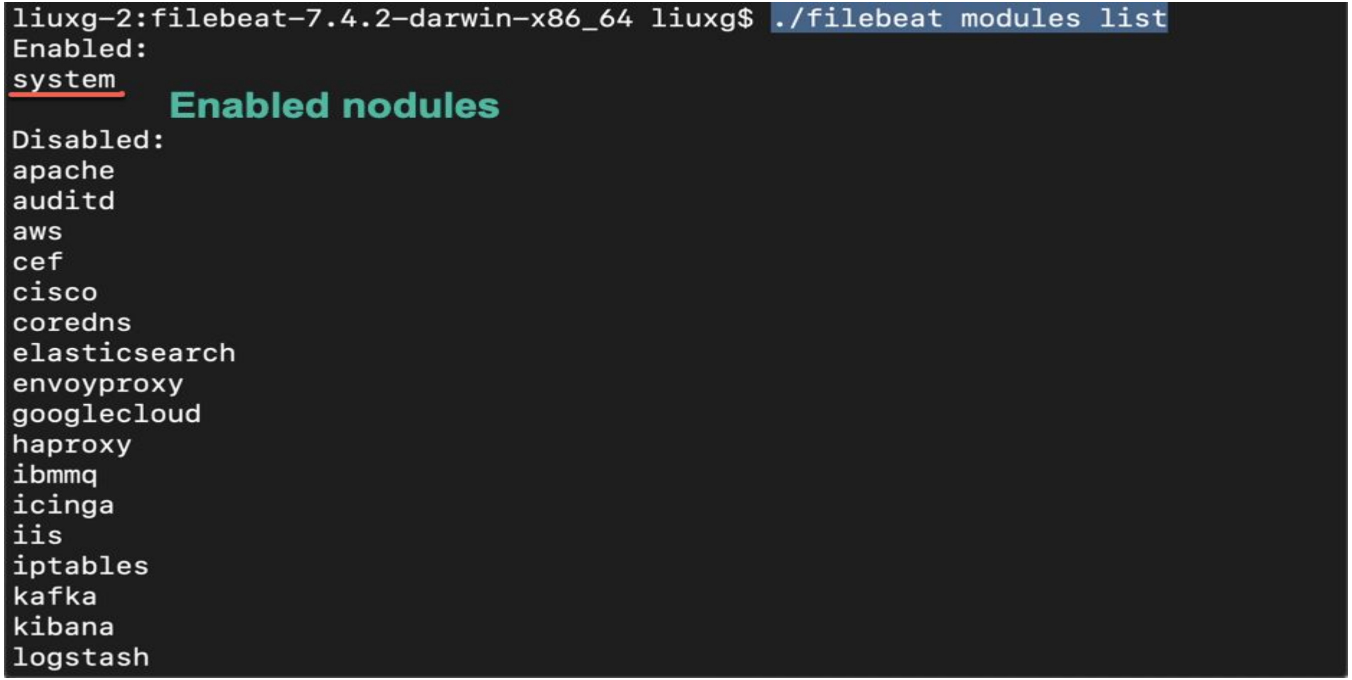
Getting Started

1 Download and install Filebeat

First time using Filebeat? See the Getting Started Guide.

Filebeat commands - list modules

- List all of the available modules (enabled/disabled)
  - `./filebeat modules list`



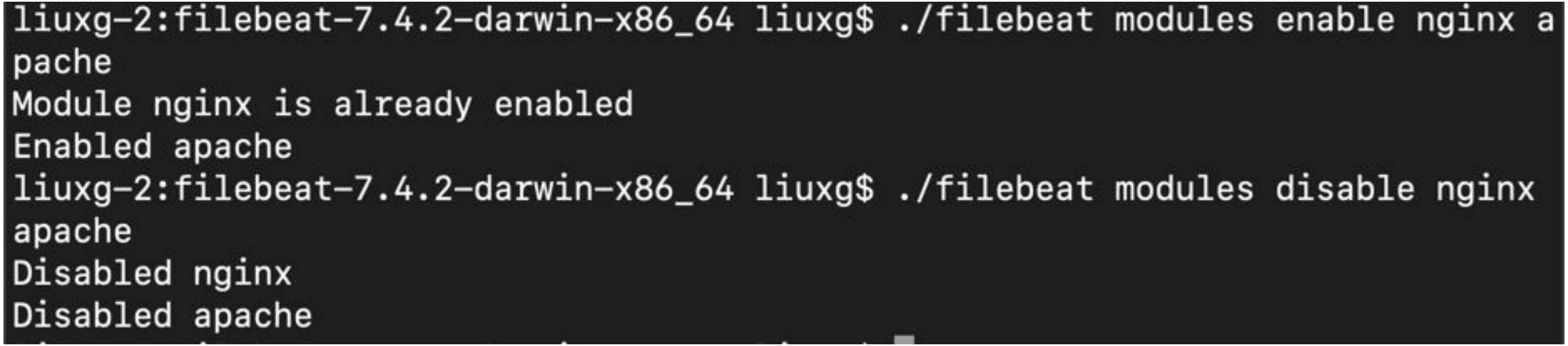
```
liuxg-2:filebeat-7.4.2-darwin-x86_64 liuxg$ ./filebeat modules list
Enabled:
system

Disabled:
apache
auditd
aws
cef
cisco
coredns
elasticsearch
envoyproxy
googlecloud
haproxy
ibmmq
icinga
iis
iptables
kafka
kibana
logstash
```

Enabled nodules

Filebeat commands - enable/disable modules

- Enable modules
  - `./filebeat modules enable nginx apache`
- Disable modules
  - `./filebeat modules disable nginx apache`



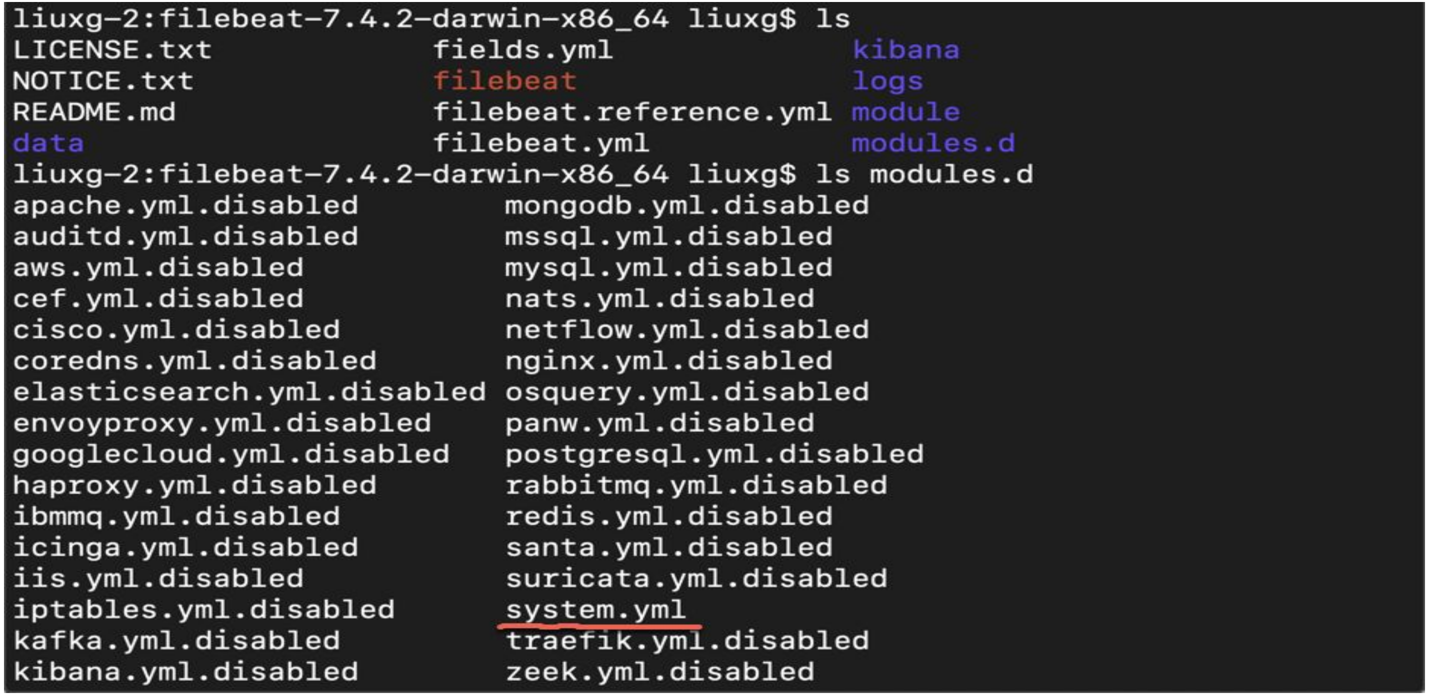
```
liuxg-2:filebeat-7.4.2-darwin-x86_64 liuxg$ ./filebeat modules enable nginx a
pache
Module nginx is already enabled
Enabled apache
liuxg-2:filebeat-7.4.2-darwin-x86_64 liuxg$ ./filebeat modules disable nginx
apache
Disabled nginx
Disabled apache
```

Filebeat commands - setup and run

- Set up the Kibana dashboards
  ```
  ./filebeat setup
  ```
- Run Filebeat
  ```
  ./filebeat -e
  ```
- Run Filebeat for a customized filebeat configuration file
  ```
  ./filebeat -e -c myfilebeatconfig.yml
  ```
- To view the published transactions, you can start Filebeat with the publish selector like this
  ```
  ./filebeat -e -d "publish"
  ```
- If you want all the debugging output (fair warning, it's quite a lot), you can use *
  ```
  filebeat -e -d "*"
  ```
- Test config and output
  ```
  ./filebeat config
  ./filebeat output
  ```

How to configure filebeat modules?

- Find the .yml file under the sub-dir **modules.d** and edit it



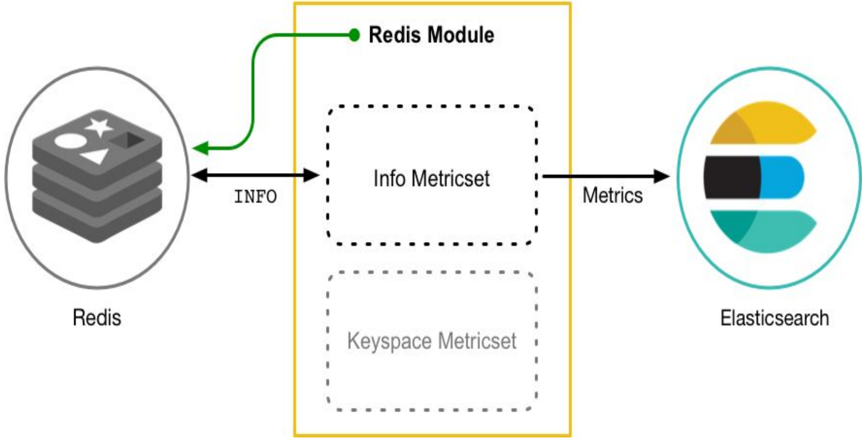
```
liuxg-2:filebeat-7.4.2-darwin-x86_64 liuxg$ ls
LICENSE.txt             fields.yml              kibana
NOTICE.txt              filebeat                logs
README.md               filebeat.reference.yml  module
data                    filebeat.yml            modules.d
liuxg-2:filebeat-7.4.2-darwin-x86_64 liuxg$ ls modules.d
apache.yml.disabled        mongodb.yml.disabled
auditd.yml.disabled        mssql.yml.disabled
aws.yml.disabled           mysql.yml.disabled
cef.yml.disabled           nats.yml.disabled
cisco.yml.disabled         netflow.yml.disabled
coredns.yml.disabled       nginx.yml.disabled
elasticsearch.yml.disabled osquery.yml.disabled
envoyproxy.yml.disabled    panw.yml.disabled
googlecloud.yml.disabled   postgresql.yml.disabled
haproxy.yml.disabled       rabbitmq.yml.disabled
ibmmq.yml.disabled         redis.yml.disabled
icinga.yml.disabled        santa.yml.disabled
iis.yml.disabled           suricata.yml.disabled
iptables.yml.disabled      system.yml
kafka.yml.disabled         traefik.yml.disabled
kibana.yml.disabled        zeek.yml.disabled
```

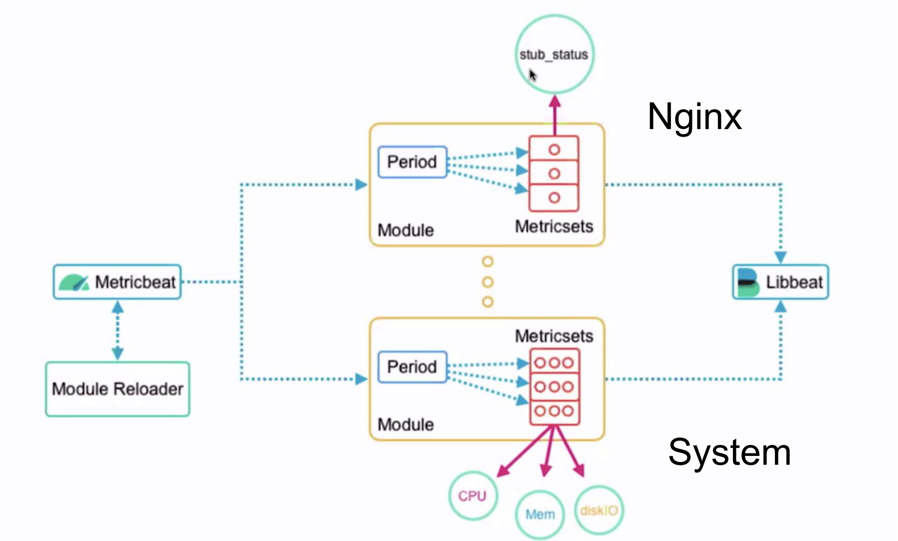
Metricbeat

- 通过 API 获取服务的各项指标
- 高效地把数据存于到 Elasticsearch 之中
- 应用指标获取协议支持 JMX/Jolokia, Prometheus, Dropwizard, Graphite
- 智能标签（AWS, Docker）

Metricbeat 概述

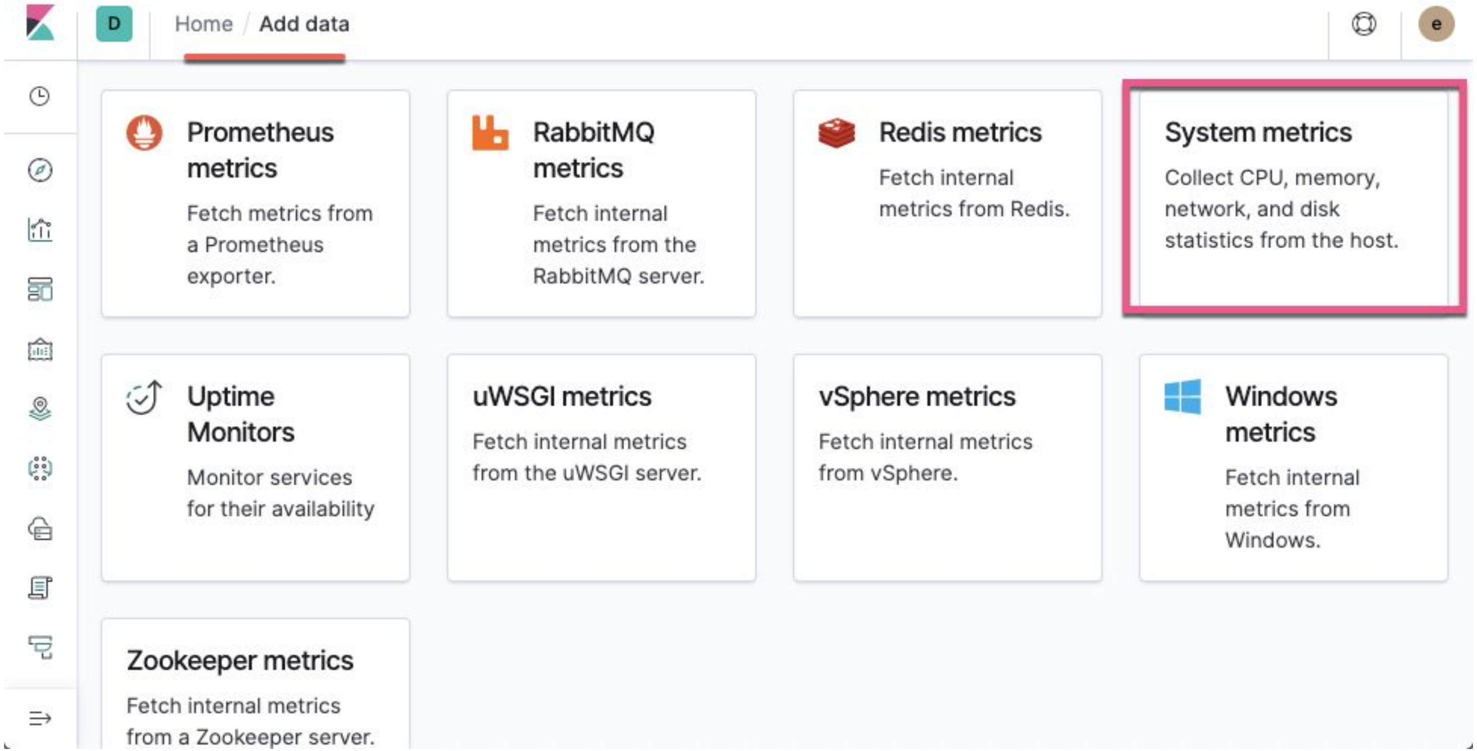
- 由 modules 及 metricset 组成. 一个 Metricbeat module 定义了一个基本的逻辑来收集从特定服务，比如 Redis, MySQL 等 如何收集数据
- 每个 module 含有一个或更多的 metricset。一个 metricset 是 module 的一部分。它用于获取数据，并结构化数据。metricset 不是将每个指标采集作为一个单独的事件，而是获取一组多个相关的指标在一个请求中。





让我们来展示 Metricbeat 吧

Select “System metrics”



Home / Add data

Prometheus metrics
Fetch metrics from a Prometheus exporter.

RabbitMQ metrics
Fetch internal metrics from the RabbitMQ server.

Redis metrics
Fetch internal metrics from Redis.

System metrics
Collect CPU, memory, network, and disk statistics from the host.

Uptime Monitors
Monitor services for their availability

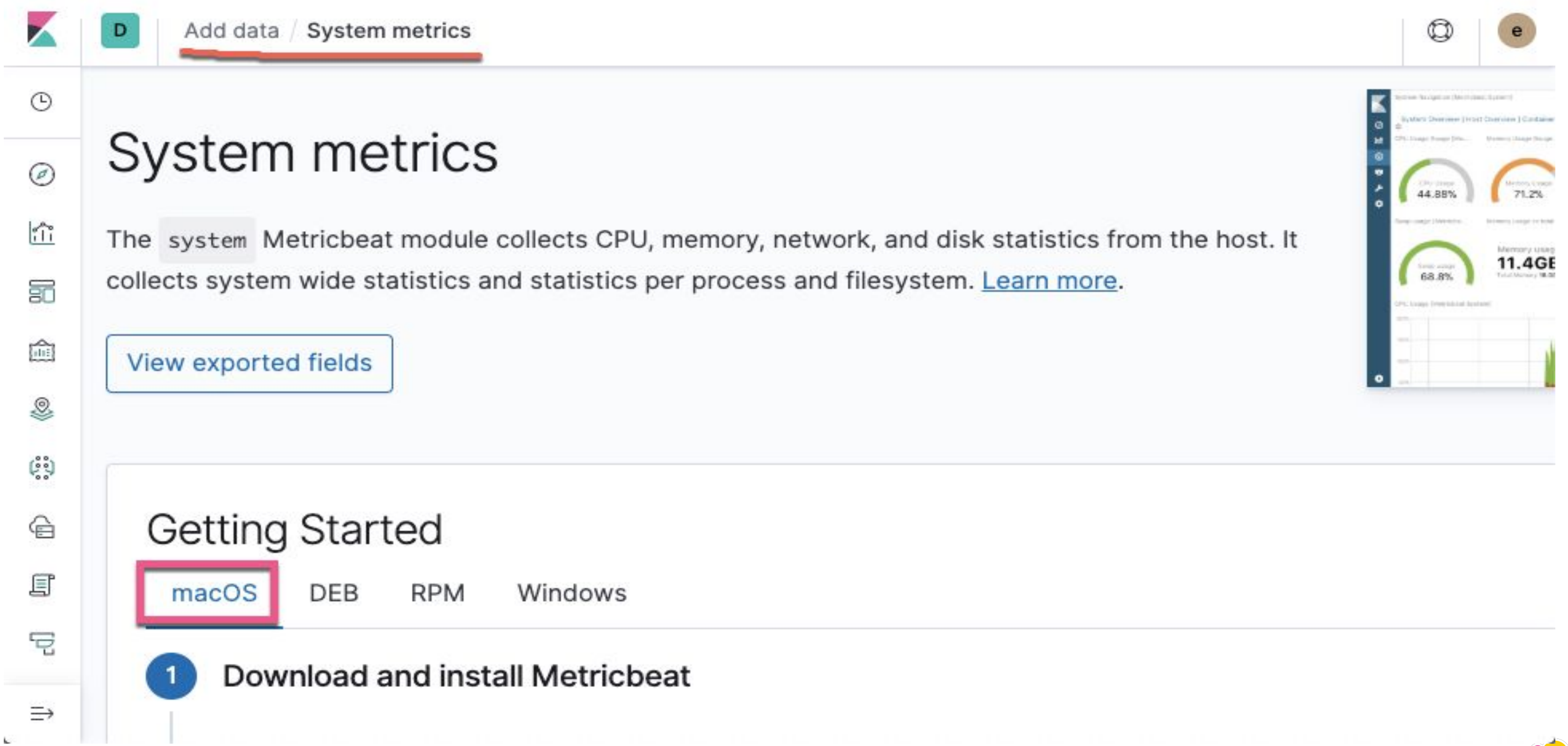
uWSGI metrics
Fetch internal metrics from the uWSGI server.

vSphere metrics
Fetch internal metrics from vSphere.

Windows metrics
Fetch internal metrics from Windows.

Zookeeper metrics
Fetch internal metrics from a Zookeeper server.

Select your platform



System metrics

The `system` Metricbeat module collects CPU, memory, network, and disk statistics from the host. It collects system wide statistics and statistics per process and filesystem. Learn more.

Getting Started

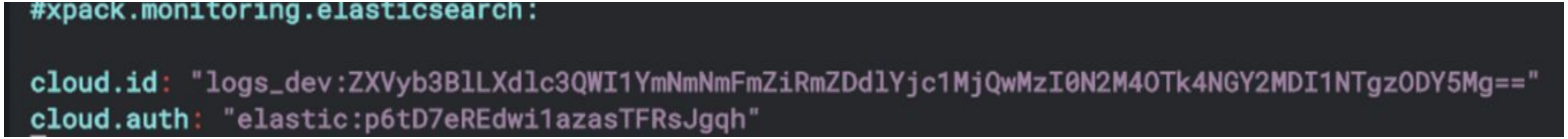
1 Download and install Metricbeat

From Logs to Dashboards in One Command

```
┌─tsg@where-is-my-esc-key ~/Downloads/metricbeat-6.0.0-rc2-darwin-x86_64
└─$ .
```

Avoid password definition in metricbeat.yml

- Leaving your password in metricbeat.yml is risky sometimes since everybody can see it



```
#xpack.monitoring.elasticsearch:

cloud.id: "logs_dev:ZXVyb3BlLXdlc3QWI1YmNmNmFmZiRmZDdlYjc1MjQwMzI0N2M4OTk4NGY2MDI1NTgzODY5Mg=="
cloud.auth: "elastic:p6tD7eREdwi1azasTFRsJgqh"
```

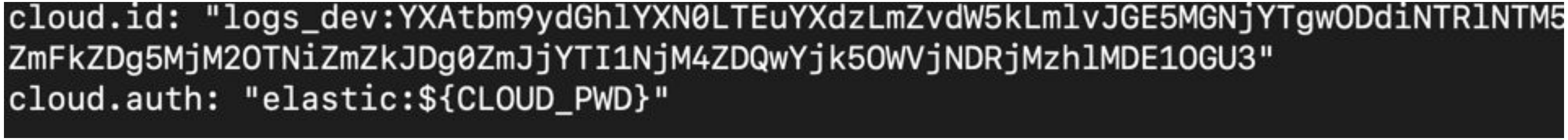
- Key in the following command in your terminal

```
./metricbeat keystore create
```

- Issue the following command, and paste your password

```
./metricbeat keystore add CLOUD_PWD
```

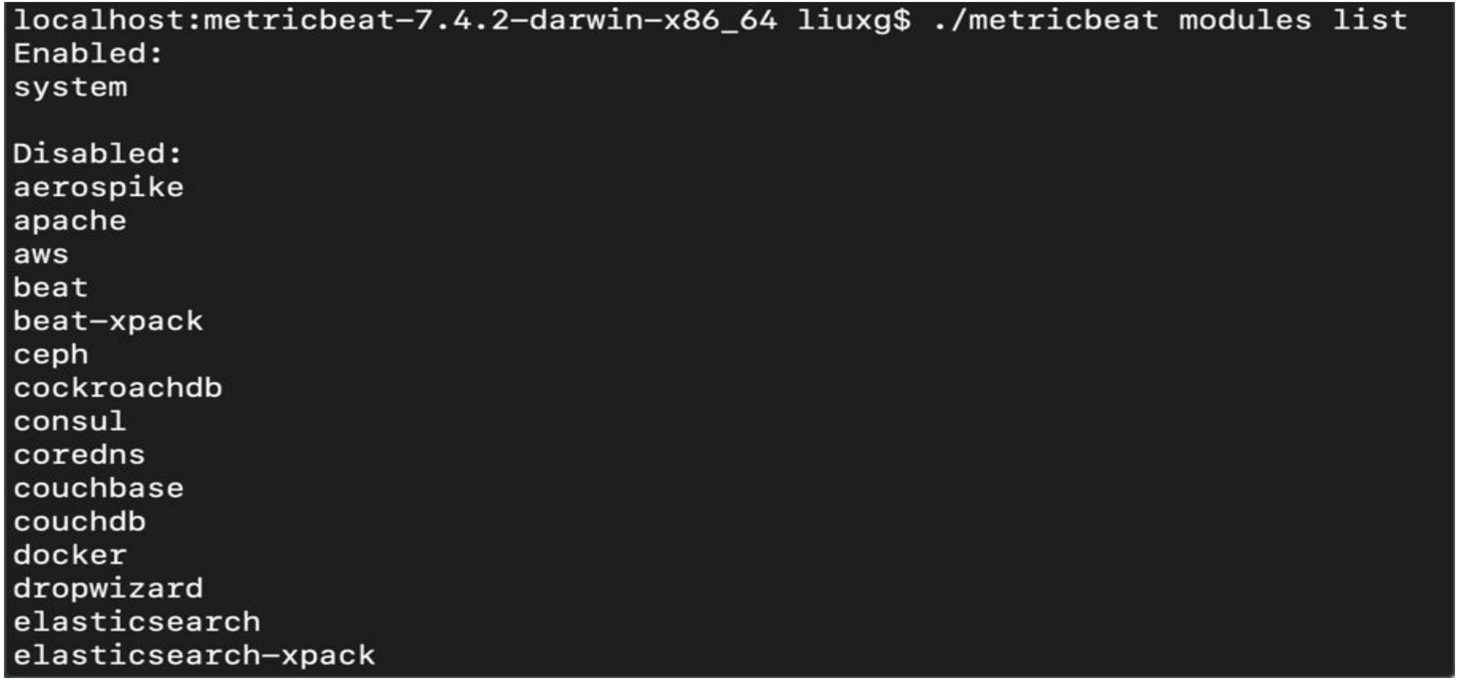
- Change your metricbeat.yml to be like following using CLOUD_PWD



```
cloud.id: "logs_dev:YXAtbm9ydGhlYXN0LTEuYXdzLmZvdW5kLmlvJGE5MGNjYTgwODdiNTRlNTM5
ZmFkZDg5MjM2OTNiZmZkJDg0ZmJjYTI1NjM4ZDQwYjk5OWVjNDRjMzhlMDE1OGU3"
cloud.auth: "elastic:${CLOUD_PWD}"
```

Metricbeat commands - list modules

- List all of the modules
  - `./metricbeat modules list`

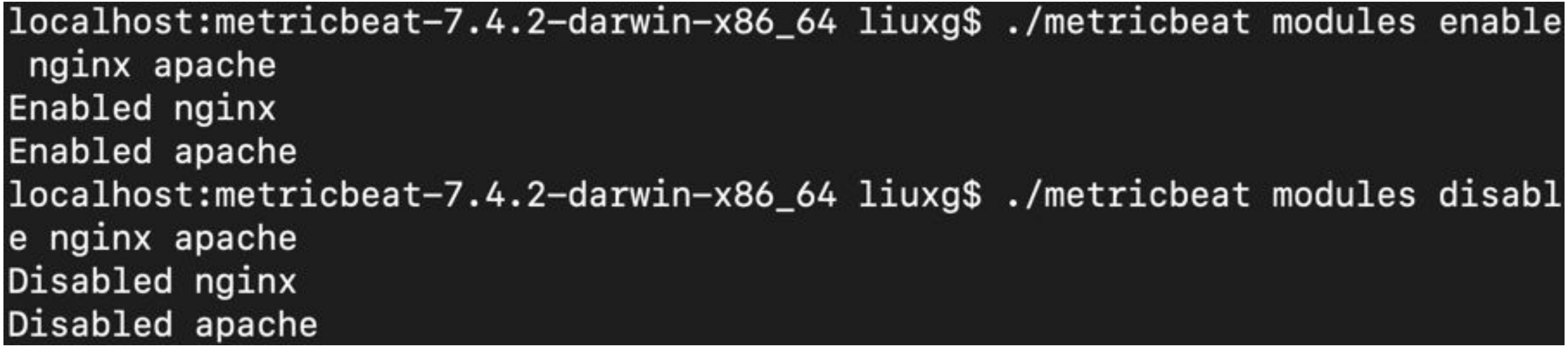


```
localhost:metricbeat-7.4.2-darwin-x86_64 liuxg$ ./metricbeat modules list
Enabled:
system

Disabled:
aerospike
apache
aws
beat
beat-xpack
ceph
cockroachdb
consul
coredns
couchbase
couchdb
docker
dropwizard
elasticsearch
elasticsearch-xpack
```

Metricbeat commands - enable/disable modules

- Enable modules
  - `./metricbeat modules enable nginx apache`
- Disable modules
  - `./metricbeat modules disable nginx apache`



```
localhost:metricbeat-7.4.2-darwin-x86_64 liuxg$ ./metricbeat modules enable
 nginx apache
Enabled nginx
Enabled apache
localhost:metricbeat-7.4.2-darwin-x86_64 liuxg$ ./metricbeat modules disabl
e nginx apache
Disabled nginx
Disabled apache
```

Metricbeat commands - setup and run

- Set up the Kibana dashboards

  -
    ```
    ./metricbeat setup
    ```
- Run Metricbeat

  -
    ```
    ./metricbeat -e
    ```
- Test modules

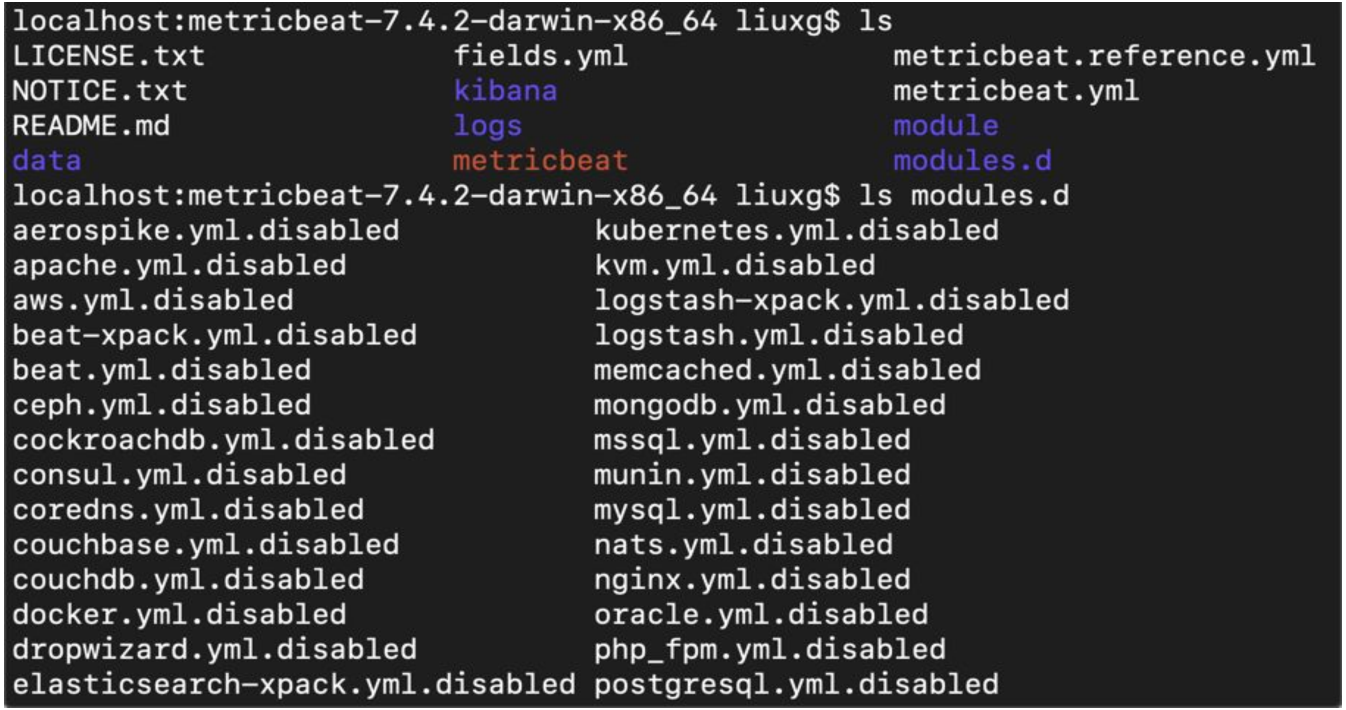
  -
    ```
    ./metricbeat test modules system
    ```

  -
    ```
    ./metricbeat test config
    ```

  -
    ```
    ./metricbeat test output
    ```

How to configure metricbeat modules?

- Find the yml file under the sub-dir **modules.d** and edit it



```
localhost:metricbeat-7.4.2-darwin-x86_64 liuxg$ ls
LICENSE.txt               fields.yml                metricbeat.reference.yml
NOTICE.txt                kibana                    metricbeat.yml
README.md                 logs                      module
data                      metricbeat                modules.d
localhost:metricbeat-7.4.2-darwin-x86_64 liuxg$ ls modules.d
aerospike.yml.disabled            kubernetes.yml.disabled
apache.yml.disabled               kvm.yml.disabled
aws.yml.disabled                  logstash-xpack.yml.disabled
beat-xpack.yml.disabled           logstash.yml.disabled
beat.yml.disabled                 memcached.yml.disabled
ceph.yml.disabled                 mongodb.yml.disabled
cockroachdb.yml.disabled          mssql.yml.disabled
consul.yml.disabled               munin.yml.disabled
coredns.yml.disabled              mysql.yml.disabled
couchbase.yml.disabled            nats.yml.disabled
couchdb.yml.disabled              nginx.yml.disabled
docker.yml.disabled               oracle.yml.disabled
dropwizard.yml.disabled           php_fpm.yml.disabled
elasticsearch-xpack.yml.disabled postgresql.yml.disabled
```

Thank you!

elastic