elasticsearch

for developer

ELK Stack

elk.txt

SPRINT3R

Siam Chamnankit Co., Ltd., Odd-e (Thailand) Co., Ltd. and Alliance

Logstash

Problem

ปกติเก็บ log file ไว้ทำอะไร ?
ต้องการค้นหาข้อมูลต้องใช้ grep หรือ shell script ?
สรุปผลจากข้อมูลอย่างไร ?
สร้างรายงานอย่างไร ?

จัดการข้อมูลอย่างไร ?

Source	Date
Apache	[23/Jan/2014:17:11:55 +0000]
Unix Timestamp	1390994740
Log4J	[2014/01/23 17:11:55, 000]
Postfix Log	Jan 23 17:11:55
ISO 8601	2014-01-23T17:11:55+01:00 2014-01-23

Logstash

- จัดการพวก Event และ log
- รวบรวมข้อมูล
- วิเคราะห์ข้อมูล
- ทำข้อมูลให้ขึ้น
- จัดเก็บข้อมูล

Logstash

- จัดการพวก Event และ log
- รวบรวมข้อมูล

} input

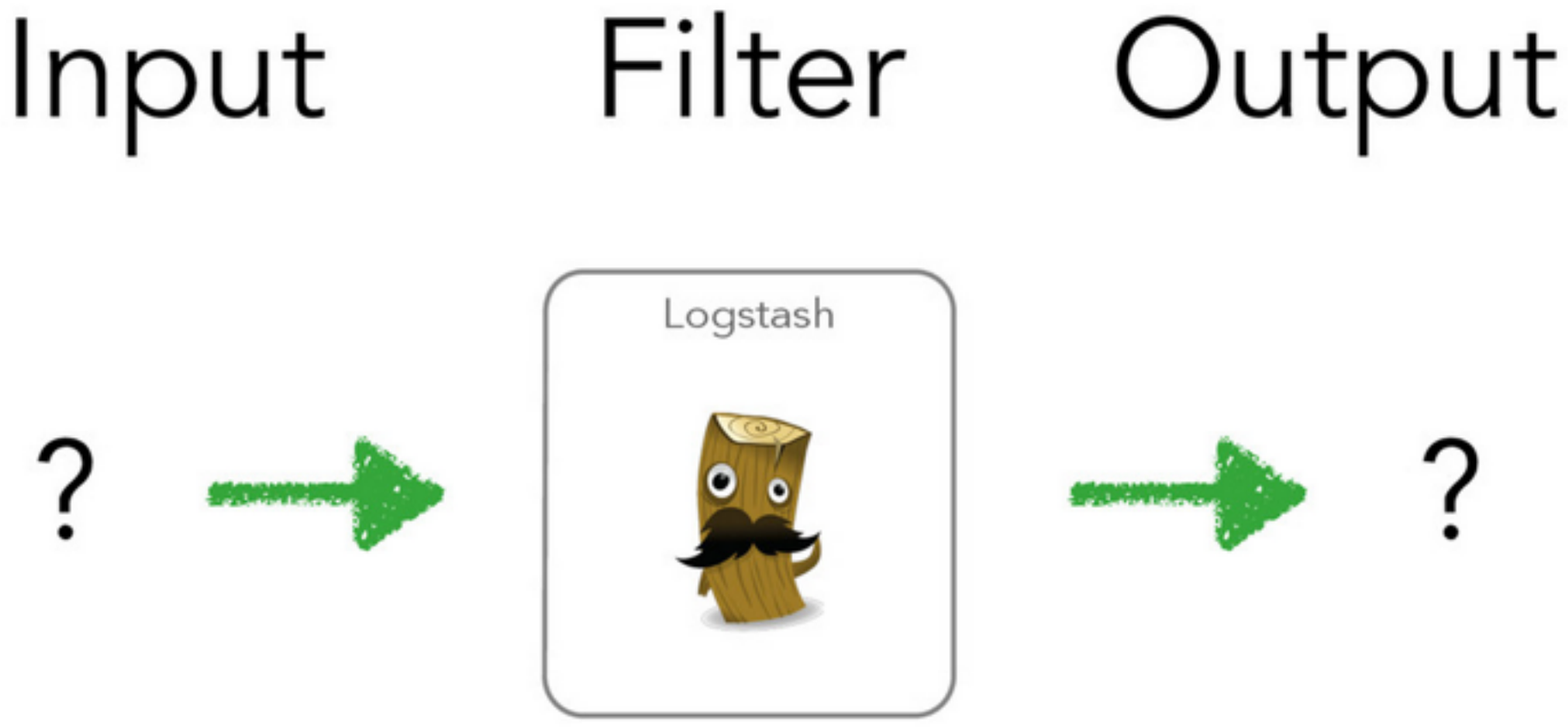
- วิเคราะห์ข้อมูล
- ทำข้อมูลให้ขึ้น

} filter

- จัดเก็บข้อมูล

} output

Architecture



Outputs

boundary circonus cloudwatch csv datadog
elasticsearch exec **email** file ganglia gelf
gemfire google_bigquery google_cloud_storage
graphite graphtastic **hipchat** http irc jira
juggernaut librato loggly lumberjack
metriccatcher mongodb **nagios** null opentsdb
pagerduty pipe **rabbitmq** redis riak riemann s3
sns solr_http sqs statsd stdout stomp syslog
tcp udp websocket xmpp zabbix **zeromq**

Hello Logstash

```
#simple.conf
input {
    stdin{}
}

output {
    stdout {
        codec => rubydebug
    }
}
```

Hello Logstash

$echo hello | bin/logstash -f simple.conf

```
{
        "message" => "hello",
       "@version" => "1",
     "@timestamp" => "2015-01-29T13:59:20.288Z",
           "host" => "somkiatpui.local"
}
```

Filter ?

#filter.conf

```
input {
    stdin{}
}

filter {
    grok {
        match => ["message", "%{WORD:firstname} %{WORD:lastname} %{NUMBER:age}"]
    }
}

output {
    stdout {
        codec => rubydebug
    }
}
```

Filter !

$echo “somkiat pui 30” | bin/logstash –f filter.conf

```
{
        "message" => "somkiat pui 30",
       "@version" => "1",
     "@timestamp" => "2015-01-29T14:36:04.528Z",
           "host" => "somkiatpui.local",
      "firstname" => "somkiat",
       "lastname" => "pui",
            "age" => "30"
}
```

Grok

จัดการข้อมูลด้วย Regular expression

http://logstash.net/docs/1.4.2/filters/grok

Default patterns

https://github.com/elasticsearch/logstash/tree/v1.4.2/patterns

Grok debugger

https://grokdebug.herokuapp.com/

Filters

advisor alter **anonymize** checksum cidr cipher
clone collate **csv** **date** **dns** **drop** elapsed
elasticsearch environment extractnumbers
fingerprint gelfify **geoip** grep **grok** grokdiscovery
i18n json json_encode kv metaevent **metrics**
multiline **mutate** noop prune punct
railsparallelrequest range ruby sleep split
sumnumbers syslog_pri throttle translate unique
urldecode **useragent** uuid wms wmts xml
zeromq

Write to elasticsearch

```
#elasticsearch.conf
input {
    stdin{}
}

output {
    elasticsearch_http {
        host => localhost
    }
}
```

Workshop

Input

Elasticsearch log file => logs/elasticsearch.log

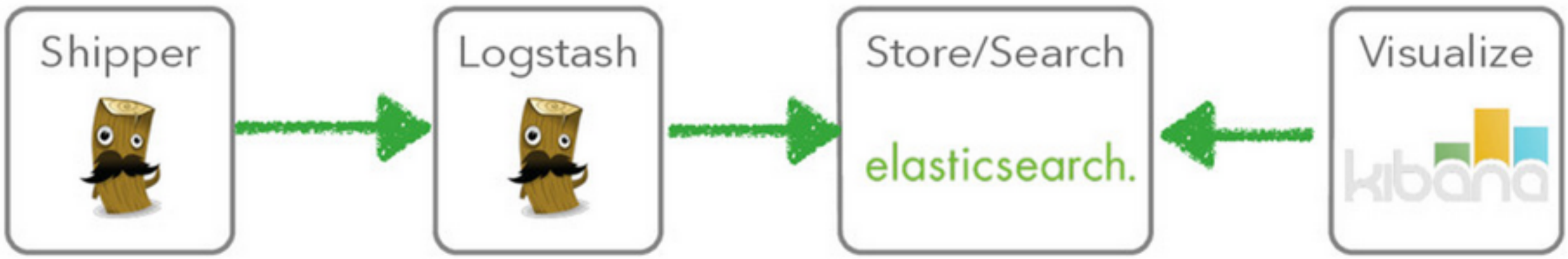
Output

Need level of log => INFO, ERROR, WARN

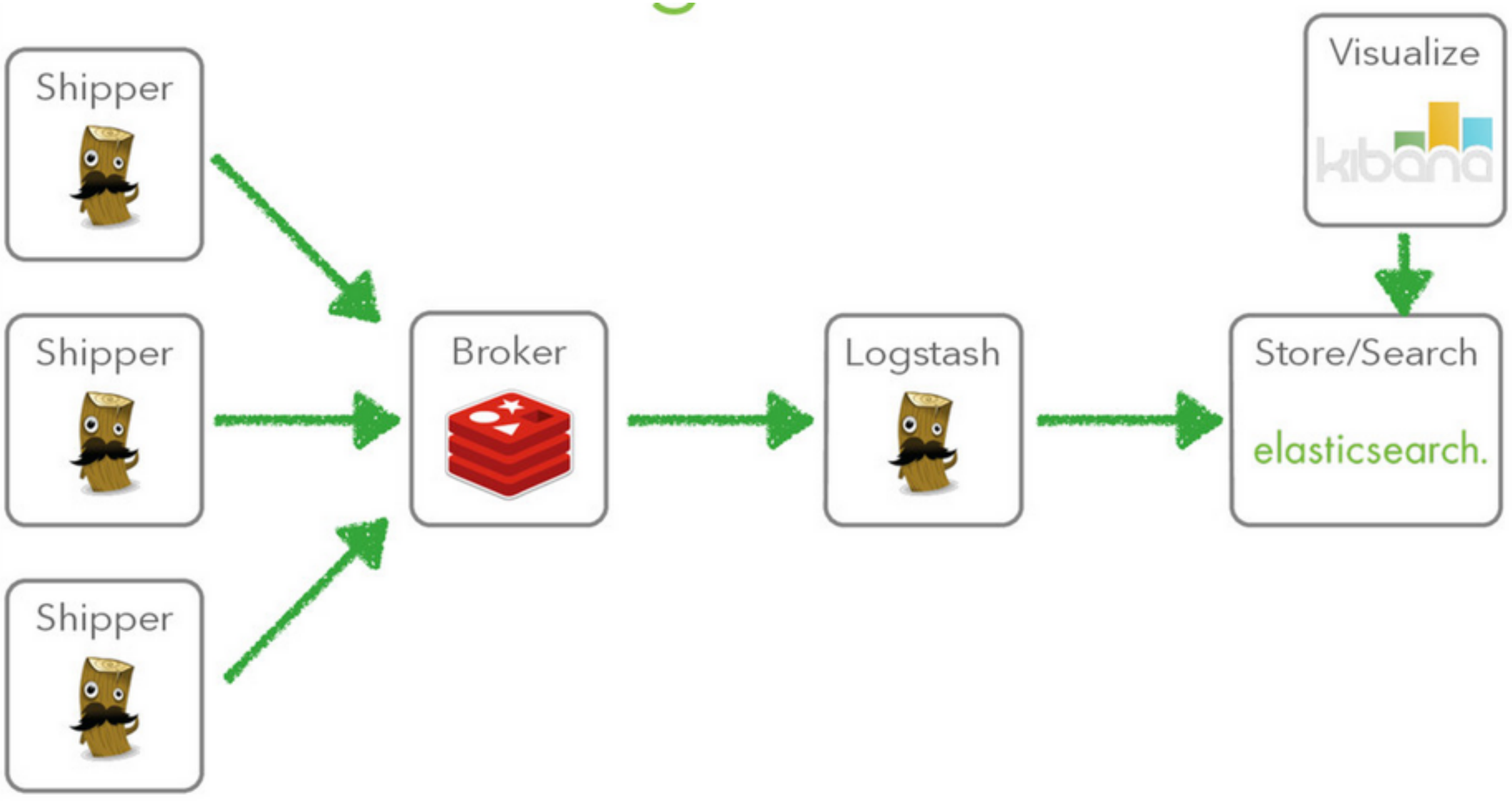
Write to elastic search

Visualize in Kibana !!

Use case :: log file



Use case :: scale log file



Scale data to your need !

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Resources

Curator

https://github.com/elasticsearch/curator

Logstash cookbook

https://github.com/logstash/cookbook

Logstash forwarder

https://github.com/elasticsearch/logstash-forwarder