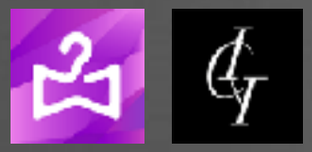


Analyze redis slowlog using elastic stack

rockybean@yourdream

2017-05-14

redis slowlog

config set slowlog-log-slower-than 20000
config set slowlog-max-len 100

slowlog get [len]
slowlog reset

```
redis 127.0.0.1:6379> slowlog get 2
1) 1) (integer) 14
   2) (integer) 1309448221
   3) (integer) 15
   4) 1) "ping"
2) 1) (integer) 13
   2) (integer) 1309448128
   3) (integer) 30
   4) 1) "slowlog"
      2) "get"
      3) "100"
```

elastic stack

Beats

The Lightweight Shippers

- FileBeat
- Metricbeat
- Packetbeat
- Heartbeat
- WinlogBeat

Build your own beat

- https://www.elastic.co/blog/build-your-own-beat

Rsbeat

rsbeat	Ships redis slow logs to elasticsearch and anlyze by Kibana.

Rsbeat

Collect redis slowlog from redis servers

https://github.com/yourdream/rsbeat

Rsbeat Usage rsbeat.yml

rsbeat:

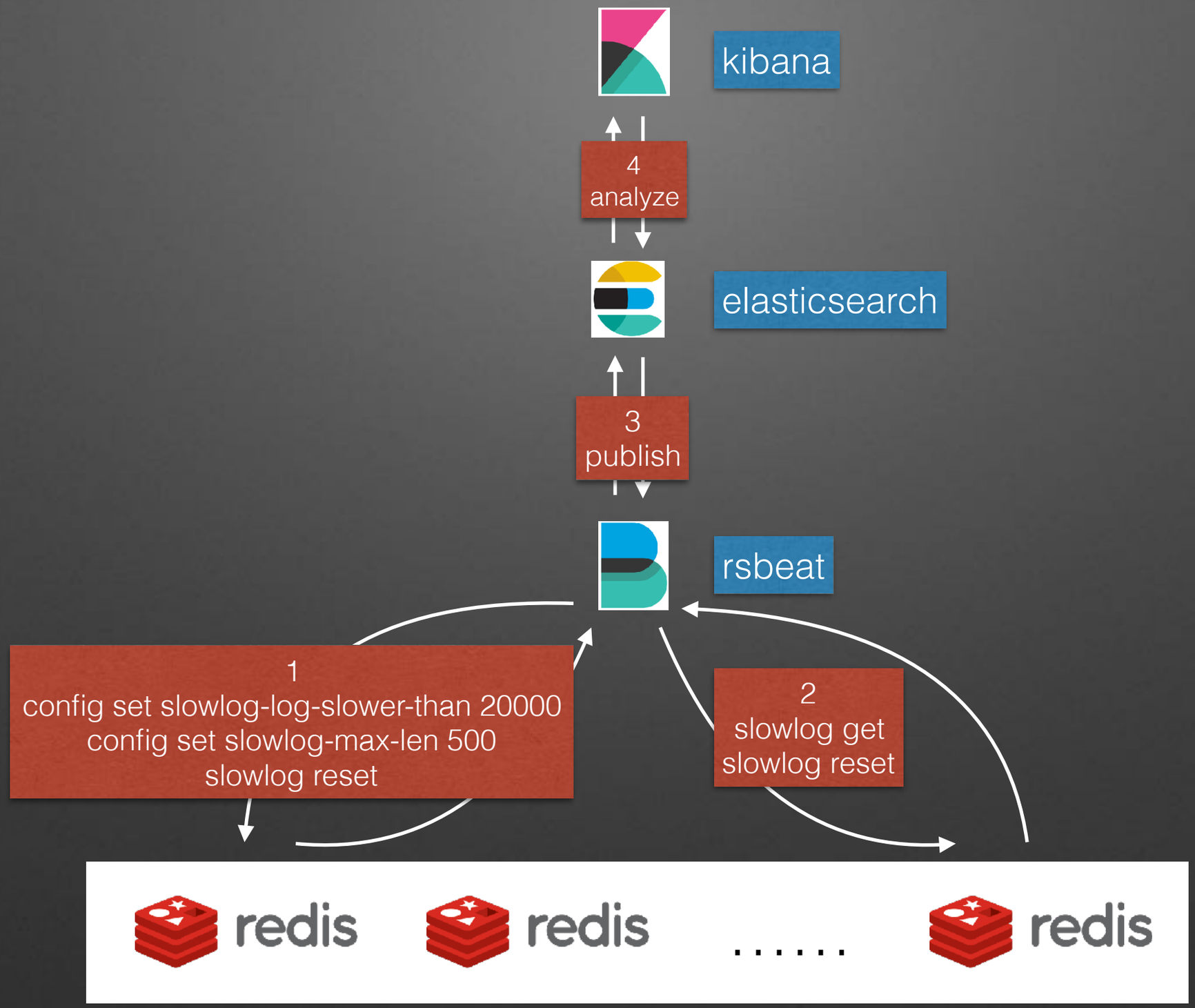
- period: 1s
- redis: [“127.0.0.1:6379”]
- slowerThan: 20000

output.elasticsearch:

- hosts: ["localhost:9200"]

rsbeat -c rsbeat.yml -e -d “*”

Rsbeat Workflow

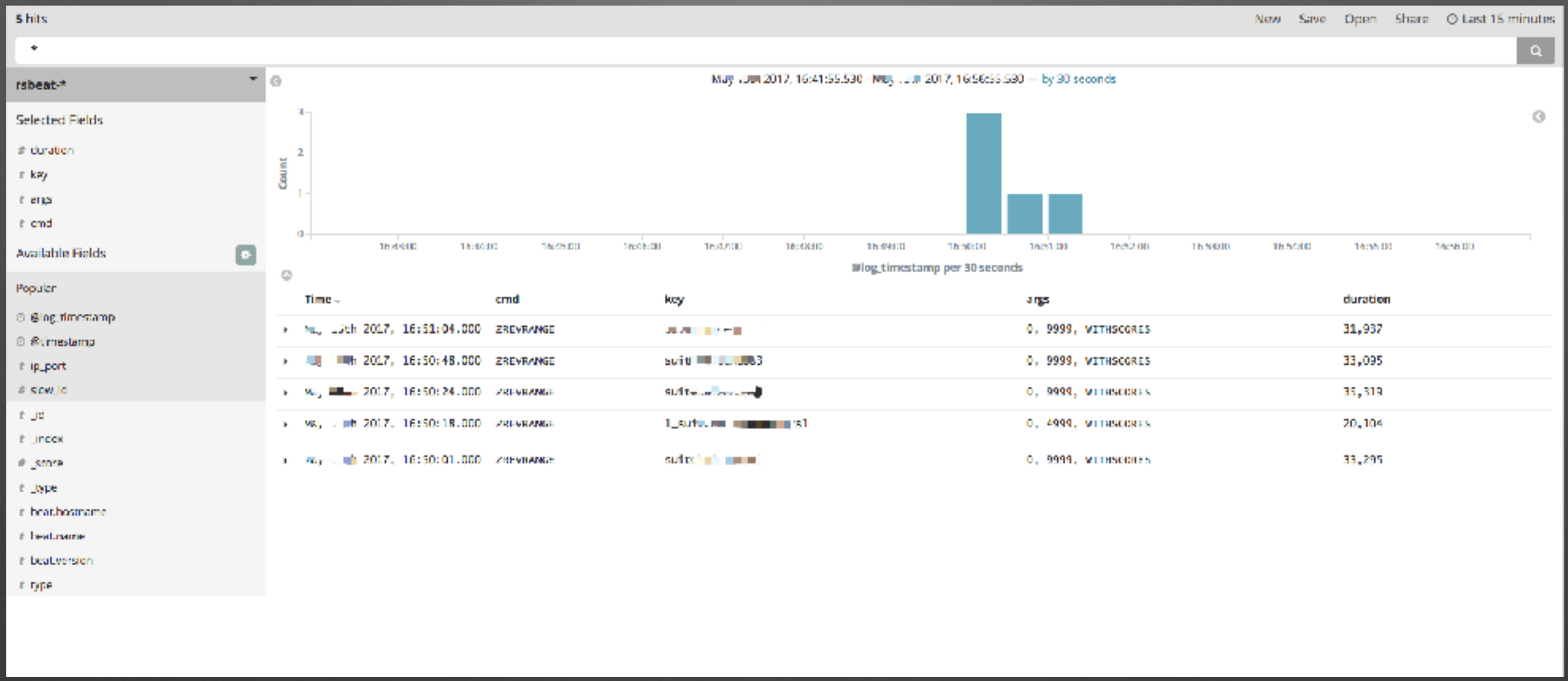


Rsbeat Document

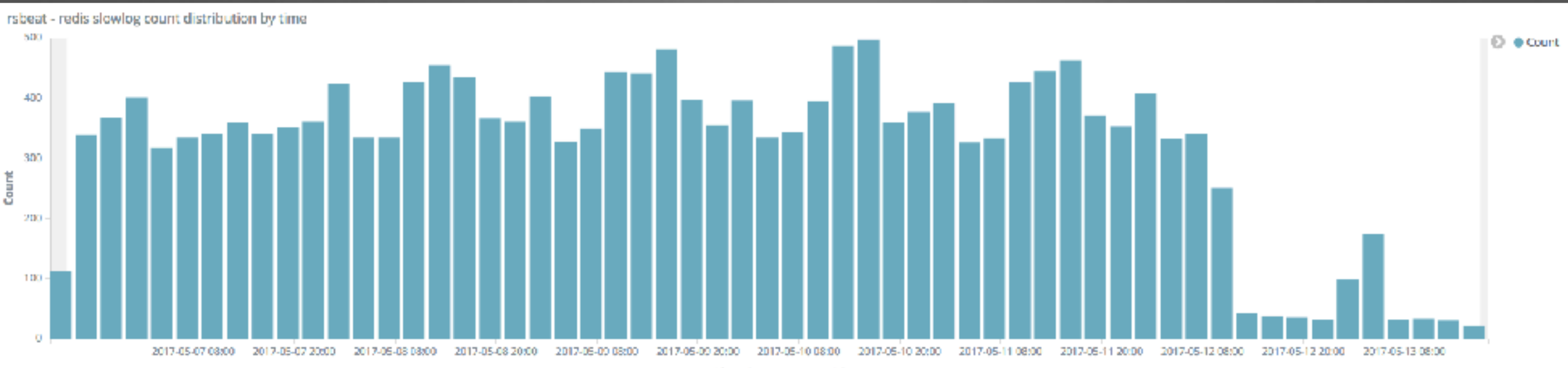
```
redis 127.0.0.1:6379> slowlog get 2
1) 1) (integer) 14
   2) (integer) 1309448221
   3) (integer) 15
   4) 1) "ping"
2) 1) (integer) 13
   2) (integer) 1309448128
   3) (integer) 30
   4) 1) "slowlog"
      2) "get"
      3) "100"
```


```
[
  {
    "@timestamp": "2017-05-14T00:23:21.385Z",
    "@log_timestamp": "2011-06-30 23:35:28Z",
    "slow_id": 13,
    "cmd": "slowlog",
    "key": "get",
    "args": [
      "100"
    ],
    "duration": 30,
    "ip_port": "127.0.0.1:6379",
    "type": "rsbeat"
  },
  {
    "@timestamp": "2017-05-14T00:23:21.385Z",
    "@log_timestamp": "2011-06-30T23:37:01Z",
    "slow_id": 14,
    "cmd": "ping",
    "duration": 15,
    "ip_port": "127.0.0.1:6379",
    "key": "",
    "type": "rsbeat"
  }
]
```

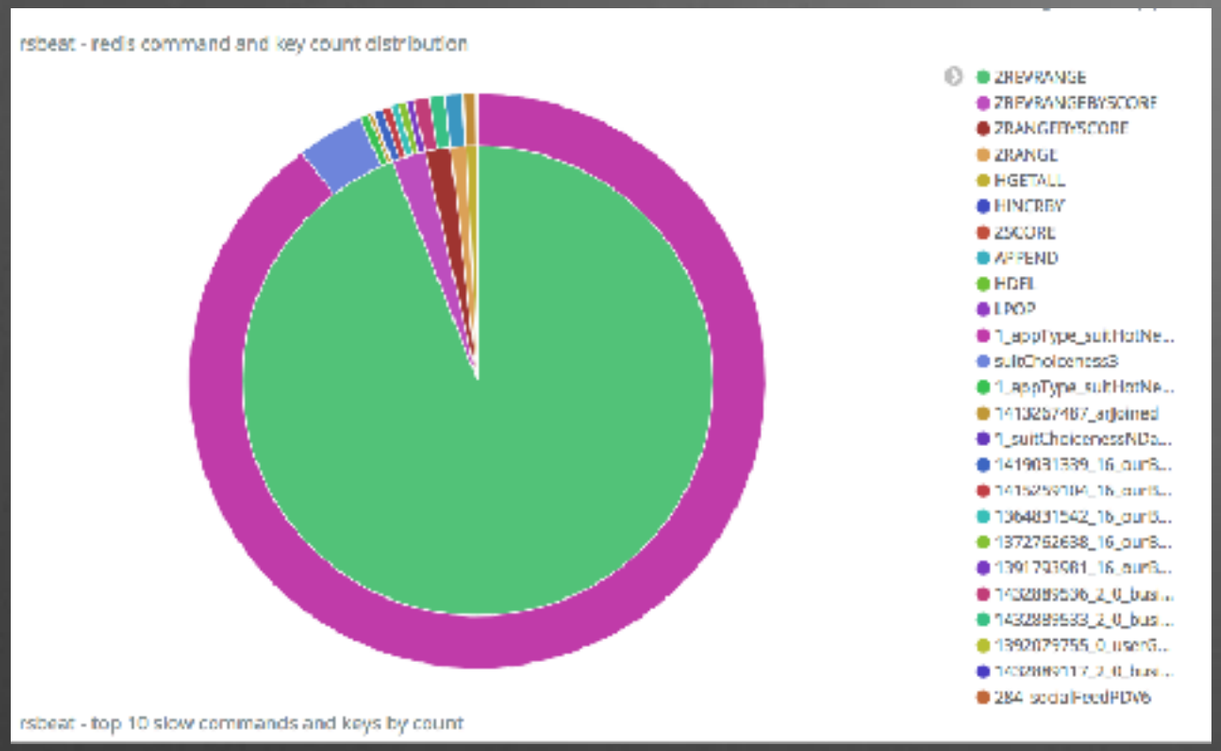
Rsbeat Kibana Show

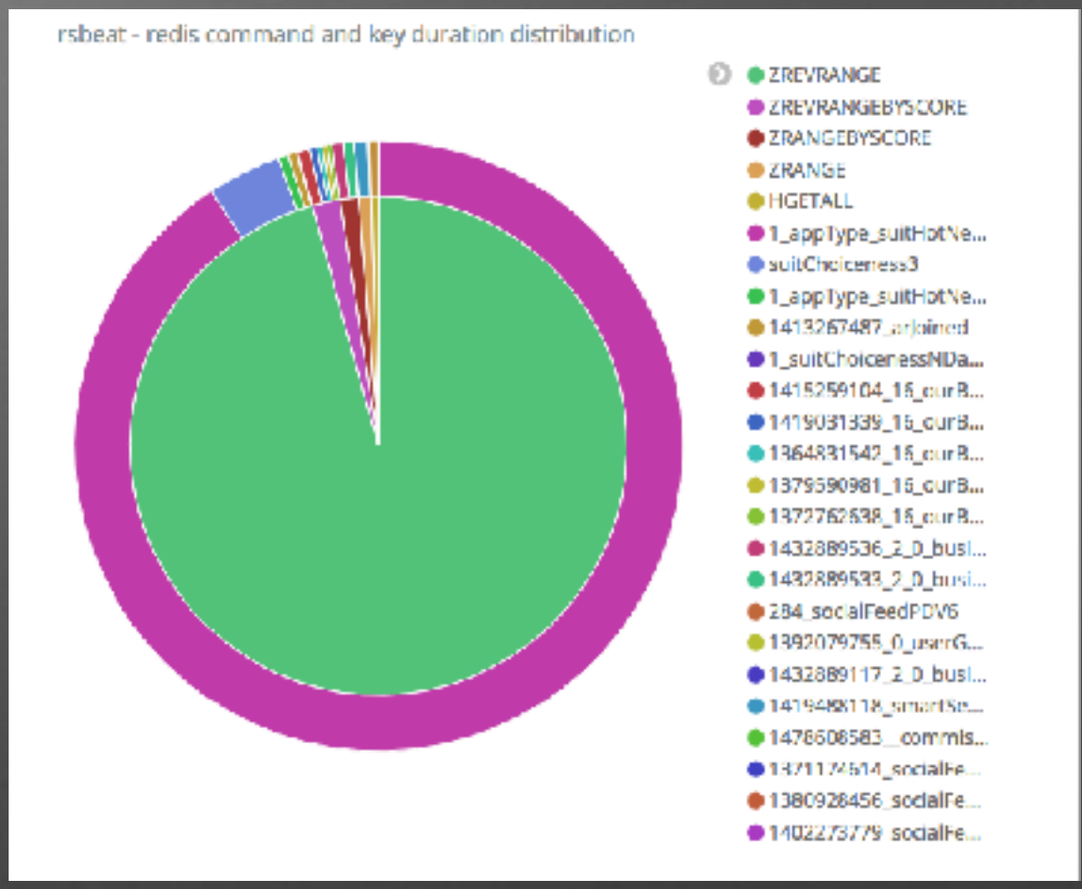


Rsbeat Kibana Show



Rsbeat Kibana Show





Rsbeat Kibana Show

rsbeat - top 10 slow commands and keys by count

ZREVRANGE: cmd: Descending

key: Descending	Count
1_app[illegible]2	16,083
[illegible]3	671
1_app[illegible]	90
1413257487_[illegible]	40
1_[illegible]	13
1_00_[illegible]	3

ZRANGEBYSCORE: cmd: Descending

key: Descending	Count
1432889536_2_0_h[illegible]t	161
1432889533_2_0_h[illegible]t	159

ZRANGE: cmd: Descending

key: Descending	Count
1419488118_[illegible]	153
1479808583_[illegible]	13

HGETALL: cmd: Descending

key: Descending	Count
spider[illegible]2	117

ZREVRANGEBYSCORE: cmd: Descending

key: Descending	Count
1419031339_16 c[illegible]2	39
1415259104_16_[illegible]2	35
1364831542_16 [illegible]a2	32
1372752638_16_[illegible]a2	32
1391793981_16 ou[illegible]a2	31
1379590981_16_[illegible]a2	30
1390614041_16 ourl us[illegible]a2	28
1389303205_16_ours[illegible]a2	17
1391829451_16 ourS[illegible]a2	15
1384805330_16_ours[illegible]2	13

rsbeat - top 10 slow commands and keys by average duration

MGET: cmd: Descending

key: Descending	Average duration
270215991579029[illegible]6	195,907
270215991581695[illegible]	40,700

APPEND: cmd: Descending

key: Descending	Average duration
79bc59079[illegible]e8a3	68,789

ZRANGE: cmd: Descending

key: Descending	Average duration
137117[illegible]7D	65,819
138092[illegible]D	65,501
138487[illegible]D	60,967
137117[illegible]0D	44,124
139255[illegible]D	40,420
1391475[illegible]	40,135
1388035[illegible]	39,328
138448789[illegible]	35,946
1381032[illegible]	31,818
137792348[illegible]	31,306

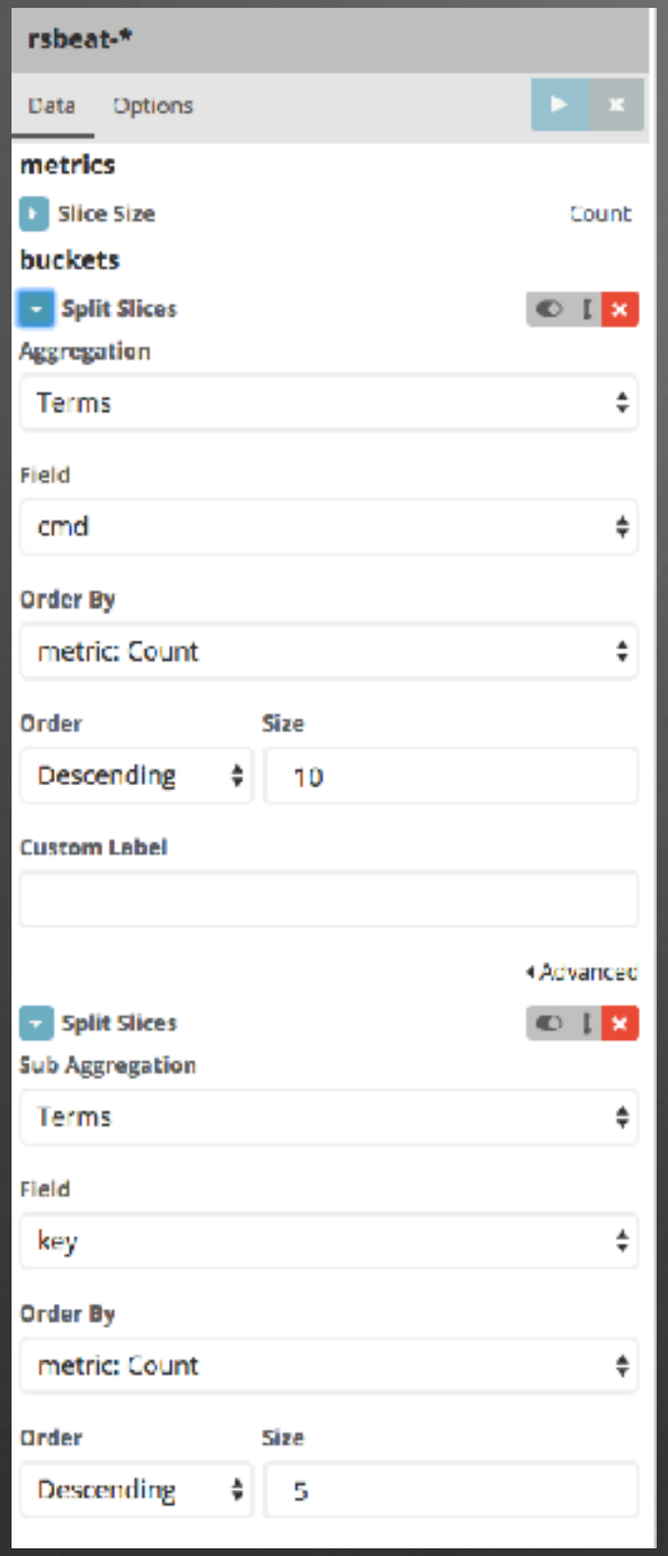
ZREVRANGE: cmd: Descending

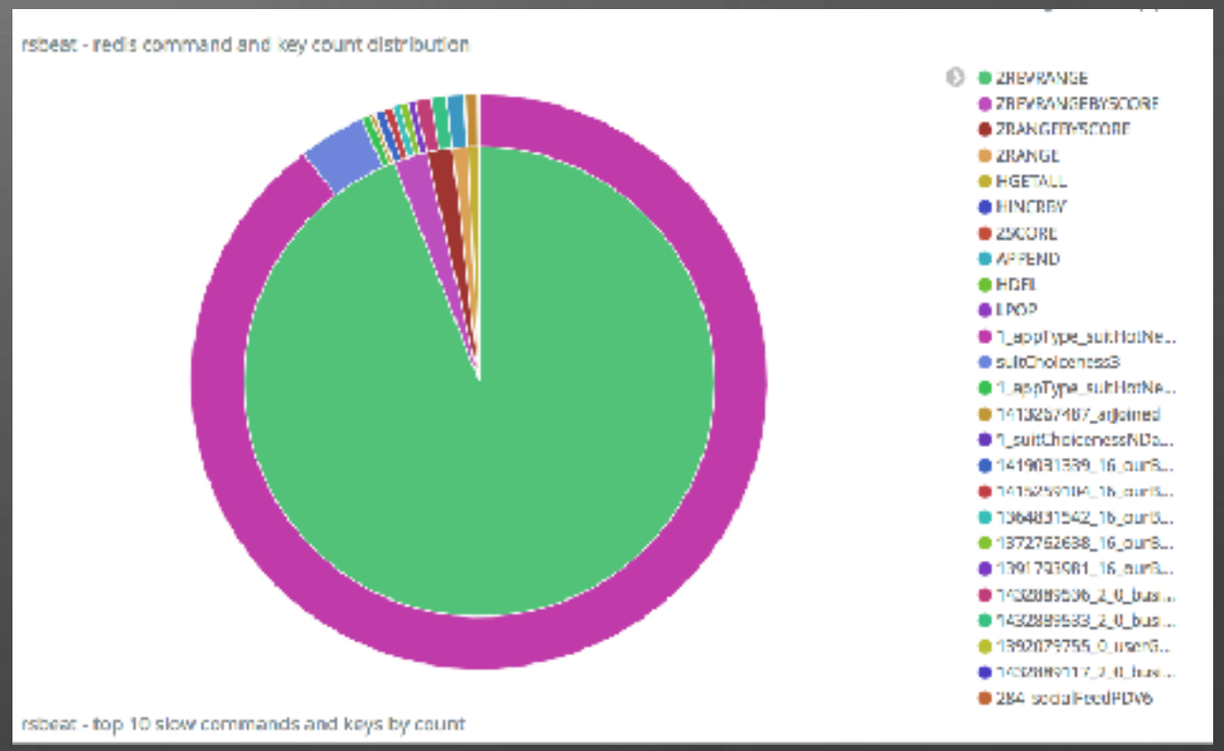
key: Descending	Average duration
14132674[illegible]	61,859.5
1413269[illegible]	37,188.333
1_00_[illegible]t	35,770.714
suite[illegible]	32,227.782
1_app[illegible]3	32,205.111
1_appTyp[illegible]2	30,983.081
2_1_app[illegible]	30,182

ZREVRANGEBYSCORE: cmd: Descending

key: Descending	Average duration
1415259104_16[illegible]2	46,649.11
1405794264[illegible]2	35,957

Rsbeat Kibana Show





Rsbeat Sourcecode

```
.
├── beater
│   └── rsbeat.go
├── _meta
│   ├── beat.yml
│   ├── fields.yml
│   └── kibana
│       ├── dashboard
│       │   └── slowlogDash.json
│       ├── export.json
│       └── index-pattern
│           └── rsbeat.json
├── config
│   ├── config.go
│   └── config_test.go
├── docker
├── docs
│   ├── fields.asciidoc
│   └── index.asciidoc
├── main.go
├── rsbeat-dashboard.json
├── rsbeat-dashboard.png
├── rsbeat.full.yml
├── rsbeat.template-es2x.json
├── rsbeat.template.json
└── rsbeat.yml
```

rsbeat core code

rsbeat es fields config

rsbeat docker

rsbeat config

Rsbeat Sourcecode

```
func poolInit(server string, slowerThan int) *redis.Pool {
        return &redis.Pool{
                MaxIdle:     3,
                MaxActive:   3,
                IdleTimeout: 240 * time.Second,
                Dial: func() (redis.Conn, error) {
                        c, err := redis.Dial("tcp", server, redis.DialConnectTimeout(3*time.Second), redis.DialReadTimeout(3*time.Second))
                        if err != nil {
                                logp.Err("redis: error occurs when connect %v", err.Error())
                                return nil, err
                        }
                        c.Send("MULTI")
                        c.Send("CONFIG", "SET", "slowlog-log-slower-than", slowerThan)
                        c.Send("CONFIG", "SET", "slowlog-max-len", 500)
                        c.Send("SLOWLOG", "RESET")
                        r, err := c.Do("EXEC")

                        if err != nil {
                                logp.Err("redis: error occurs when send config set %v", err.Error())
                                return nil, err
                        }

                        logp.Info("redis: config set %v", r)
                        return c, err
                },
                TestOnBorrow: func(c redis.Conn, t time.Time) error {
                        _, err := c.Do("PING")
                        logp.Info("redis: PING")
                        return err
                },
        }
}
```

https://github.com/Yourdream/rsbeat/blob/master/beater/rsbeat.go

Rsbeat Sourcecode

```go
func (bt *Rsbeat) redisc(beatname string, init bool, c redis.Conn, ipPort string) {
        defer c.Close()
        logp.Info("conn:%v", c)

        c.Send("SLOWLOG", "GET")
        c.Send("SLOWLOG", "RESET")
        logp.Info("redis: slowlog get. slowlog reset")

        c.Flush()
        reply, err := redis.Values(c.Receive()) // reply from GET
        c.Receive()                             // reply from RESET

        logp.Info("reply len: %d", len(reply))

        for _, i := range reply {
                rp, _ := redis.Values(i, err)
                var itemLog itemLog
                var args []string
                redis.Scan(rp, &itemLog.slowId, &itemLog.timestamp, &itemLog.duration, &args)
                argsLen := len(args)
                if argsLen >= 1 {
                        itemLog.cmd = args[0]
                }
                if argsLen >= 2 {
                        itemLog.key = args[1]
                }
                if argsLen >= 3 {
                        itemLog.args = args[2:]
                }
                logp.Info("timestamp is: %d", itemLog.timestamp)
                t := time.Unix(itemLog.timestamp, 0).UTC()

                event := common.MapStr{
                        "type":          beatname,
                        "@timestamp":    common.Time(time.Now()),
                        "@log_timestamp": common.Time(t),
                        "slow_id":       itemLog.slowId,
                        "cmd":           itemLog.cmd,
                        "key":           itemLog.key,
                        "args":          itemLog.args,
                        "duration":      itemLog.duration,
                        "ip_port":       ipPort,
                }

                bt.client.PublishEvent(event)
        }
}
```

https://github.com/Yourdream/rsbeat/blob/master/beater/rsbeat.go

Rsbeat Docker docker

```
docker-compose up -d elasticsearch kibana
```

```
docker-compose run -e "REDIS_LIST=\"10.0.0.40:6379\"" rsbeat
```

~~127.0.0.1~~ ~~localhost~~

- https://www.elastic.co/guide/en/elasticsearch/reference/current/docker.html
- https://www.elastic.co/guide/en/kibana/current/docker.html

Rsbeat Docker

```
├── docker
│   ├── Dockerfile
│   ├── binary
│   │   └── rsbeat-linux-amd64
│   ├── docker-compose.yml
│   ├── docker-entrypoint.sh
│   ├── rsbeat.template-es2x.json
│   ├── rsbeat.template.json
│   └── rsbeat.yml
```

Rsbeat Docker Dockerfile

```
FROM busybox

COPY docker-entrypoint.sh /docker-entrypoint.sh
COPY binary/rsbeat-linux-amd64 /rsbeat
COPY rsbeat.yml /rsbeat.yml
COPY rsbeat.template.json /rsbeat.template.json
COPY rsbeat.template-es2x.json /rsbeat.template-es2x.json

ENTRYPOINT ["/docker-entrypoint.sh"]
CMD ["/rsbeat", "-e", "-d", "*", "-c", "/rsbeat.yml"]
```

Rsbeat Docker docker-entrypoint.sh

```
#!/bin/sh

if [ ! $ES_URL ];then
    ES_URL="127.0.0.1:9200"
fi
if [ ! $REDIS_LIST ];then
    REDIS_LIST='"127.0.0.1:6379","10.0.0.40:6379"'
fi
if [ ! $REDIS_SLOWER_THAN ];then
    REDIS_SLOWER_THAN=200
fi
if [ ! $PERIOD ];then
    PERIOD="1s"
fi
# Render config file
cat rsbeat.yml | sed "s|ES_URL|${ES_URL}|g" | sed "s|REDIS_LIST|${REDIS_LIST}|g" | sed
"s|REDIS_SLOWER_THAN|${REDIS_SLOWER_THAN}|g" | sed "s|PERIOD|${PERIOD}|g"  >
rsbeat.yml.tmp
cat rsbeat.yml.tmp > rsbeat.yml
rm rsbeat.yml.tmp
```

Rsbeat Opensource

- Readme
- Release binary files
- Contribute to community

  https://github.com/elastic/beats/pull/4108

  https://www.elastic.co/contributor-agreement

  https://www.elastic.co/guide/en/beats/libbeat/current/community-beats.html

elastic stack

Data Science and Analytics

- Ship data from any source
- Support for large scale data set
- Opensource community

Q&A