

Microsoft
tech·days
11,12,13 février 2014



Elasticsearch sur Azure
Make sense of your (BIG) data !

David Pilato / Thomas Conté

Développeurs - Evangélistes

Elasticsearch / Microsoft

@dadoonet / @tomconte

Donnez votre avis !

Depuis votre smartphone sur :

<http://notes.mstechdays.fr>

De nombreux lots à gagner toute les heures !!!

Claviers, souris et jeux Microsoft...

Merci de nous aider à améliorer les Techdays !

WINDOWS AZURE

Rappels



Windows Azure Plateforme Ouverte

Back-ends Android, iOS & Node.js via
Azure Mobile Services

SDKs pour Java, Python, PHP, Ruby, Node.js

WebSites pour PHP, Node.js,
Python & App Gallery

MySQL via ClearDB, MongoDB via MongoLab,
Hadoop via HDInsight

Linux VMs via Image Gallery & VMDepot

Devices



Languages



Apps



Data



Operating
Systems



Windows Azure : rappels



ELASTICSEARCH

Overview



search = like % ?

search = like % ?

```
SELECT
```

```
  doc.*, pays.*
```

```
FROM
```

```
  doc, pays
```

```
WHERE
```

```
  doc.pays_code = pays.code AND
```

```
  doc.date_doc > to_date('2011-12', 'yyyy-mm') AND
```

```
  doc.date_doc < to_date('2012-01', 'yyyy-mm') AND
```

```
  lower(pays.libelle) = 'france' AND
```

```
  lower(doc.commentaire) LIKE '%produit%' AND
```

```
  lower(doc.commentaire) LIKE '%david%';
```

Moteur de recherche ?

[illegible]

elasticsearch ?



elasticsearch ?

Lucene



elasticsearch ?

REST/JSON

Lucene



scalable

elasticsearch ?

REST/JSON

Lucene



plug & play

scalable

elasticsearch ?

REST/JSON

Lucene



plug & play

scalable

elasticsearch

Apache 2 license

REST/JSON

Lucene



Start...

```
$ wget https://download.elasticsearch.org/elasticsearch/  
elasticsearch/elasticsearch-1.0.0.tar.gz  
$ tar -xf elasticsearch-1.0.0.tar.gz  
$ ./elasticsearch-1.0.0/bin/elasticsearch  
[INFO ][node           ][Ghost Maker] {1.0.0}[5645]: initializing
```

... and play!

```
$ curl -XPUT localhost:9200/sessions/session/1 -d '{
  "title"      : "Elasticsearch sur Azure",
  "subtitle"   : "Make sense of your (BIG) data !",
  "date"       : "2014-02-13T16:30:00",
  "tags"       : [ "elasticsearch", "azure", "cloud" ],
  "speaker"    : [ {
    "first_name" : "Thomas",
    "last_name"  : "Conté"
  }, {
    "first_name" : "David",
    "last_name"  : "Pilato"
  } ]
}'
```

Search!

```
$ curl -XPOST http://localhost:9200/sessions/session/_search -d'
{
  "query": {
    "multi_match": {
      "query": "elasticsearch azure thomas",
      "fields": [ "title^2", "speaker.first_name" ]
    }
  },
  "post_filter": {
    "range": {
      "date": {
        "from": "2014-02-13",
        "to": "2014-02-14"
      }
    }
  }
}'
```

Compute?

F

faible émissivité, verre 170, 362

faïence, forêt 97

faîtage 219

fenêtre 170, 172–177

à vantaux 125, 126

abri de jardin 251

aérateur dynamique 334

barre 132–133

septique 307

toutes eaux 307

foyer 134, 136

frapper 351

frise

carrelage 41

papier peint 87

froid, isolation 330, 363

FSC (Forest Stewardship
Council) 20, 69, 202, 361

fuite 299, 309

I
indie
infil
inor
ins
ins

Compute!

```
$ curl -XPOST http://localhost:9200/sessions/session/_search -d'
{
  "query": { ... },
  "aggs": {
    "by_date": {
      "date_histogram": {
        "field": "date",
        "interval": "day",
        "format" : "dd/MM/yyyy"
      }
    }
  }
}'
```

Compute!

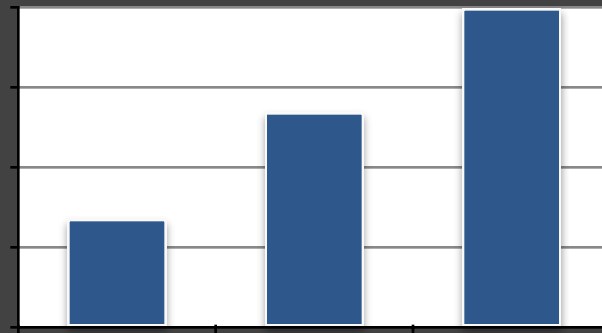
```
$ curl -XPOST http://localhost:9200/sessions/session/_search -d'
```

```
{
  "query": { ... },
  "aggs": {
    "by_date": {
      "date_histogram": {
        "field": "date",
        "interval": "day",
        "format" : "dd/MM/yyyy"
      }
    }
  }
},'
```

```
"by_date": [
  { "key_as_string": "11/02/2014", "doc_count": 1 },
  { "key_as_string": "12/02/2014", "doc_count": 2 },
  { "key_as_string": "13/02/2014", "doc_count": 3 }
]
```

Compute!

```
$ curl -XPOST http://localhost:9200/sessions/session/_search -d'
{
  "query": { ... },
  "aggs": {
    "by_date": {
      "date_histogram": {
        "field": "date",
        "interval": "day",
        "format": "dd/MM/yyyy"
      }
    }
  }
}'
```



```
"by_date": [
  { "key_as_string": "11/02/2014", "doc_count": 1 },
  { "key_as_string": "12/02/2014", "doc_count": 2 },
  { "key_as_string": "13/02/2014", "doc_count": 3 }
]
```


démo

MAKE SENSE OF YOUR (BIG) DATA!

let's inject some marketing documents...

ELASTICSEARCH

Elastique ? Distribué ?



Distributed indices

node 1

Distributed indices

node 1

```
$ curl -XPUT localhost:9200/orders -d '{  
  "settings.index.number_of_shards" : 4,  
  "settings.index.number_of_replicas" : 1  
}'
```

Distributed indices

node 1

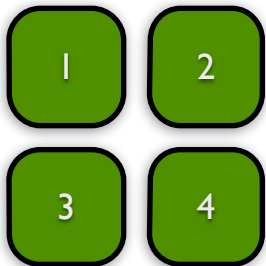
orders

```
$ curl -XPUT localhost:9200/orders -d '{  
  "settings.index.number_of_shards" : 4,  
  "settings.index.number_of_replicas" : 1  
}'
```

Distributed indices

node 1

orders

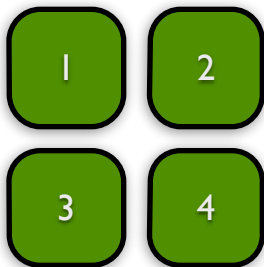


```
$ curl -XPUT localhost:9200/orders -d '{  
  "settings.index.number_of_shards" : 4,  
  "settings.index.number_of_replicas" : 1  
}'
```

Distributed indices

node 1

orders



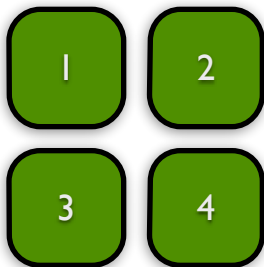
```
$ curl -XPUT localhost:9200/orders -d '{  
  "settings.index.number_of_shards" : 4,  
  "settings.index.number_of_replicas" : 1  
}'
```

```
$ curl -XPUT localhost:9200/products -d '{  
  "settings.index.number_of_shards" : 2,  
  "settings.index.number_of_replicas" : 0  
}'
```

Distributed indices

node 1

orders



products



```
$ curl -XPUT localhost:9200/orders -d '{  
  "settings.index.number_of_shards" : 4,  
  "settings.index.number_of_replicas" : 1  
}'
```

```
$ curl -XPUT localhost:9200/products -d '{  
  "settings.index.number_of_shards" : 2,  
  "settings.index.number_of_replicas" : 0  
}'
```


Start new nodes

```
$ ./elasticsearch-1.0.0/bin/elasticsearch
```

```
[INFO ][node                ][Armageddon] {1.0.0}[5645]: initializing
```

```
[INFO ][cluster.service][Armageddon] detected_master [Ghost Maker]
```

Start new nodes

```
$ ./elasticsearch-1.0.0/bin/elasticsearch
```

```
[INFO ][node                ][Armageddon] {1.0.0}[5645]: initializing
```

```
[INFO ][cluster.service][Armageddon] detected_master [Ghost Maker]
```

```
$ ./elasticsearch-1.0.0/bin/elasticsearch
```

```
[INFO ][node                ][Cyclops] {1.0.0}[5645]: initializing
```

```
[INFO ][cluster.service][Cyclops] detected_master [Ghost Maker]
```

Start new nodes

```
$ ./elasticsearch-1.0.0/bin/elasticsearch
```

```
[INFO ][node                ][Armageddon] {1.0.0}[5645]: initializing  
[INFO ][cluster.service][Armageddon] detected_master [Ghost Maker]
```

```
$ ./elasticsearch-1.0.0/bin/elasticsearch
```

```
[INFO ][node                ][Cyclops] {1.0.0}[5645]: initializing  
[INFO ][cluster.service][Cyclops] detected_master [Ghost Maker]
```

```
$ ./elasticsearch-1.0.0/bin/elasticsearch
```

```
[INFO ][node                ][Karnak] {1.0.0}[5645]: initializing  
[INFO ][cluster.service][Karnak] detected_master [Ghost Maker]
```

Distributed indices



Distributed indices



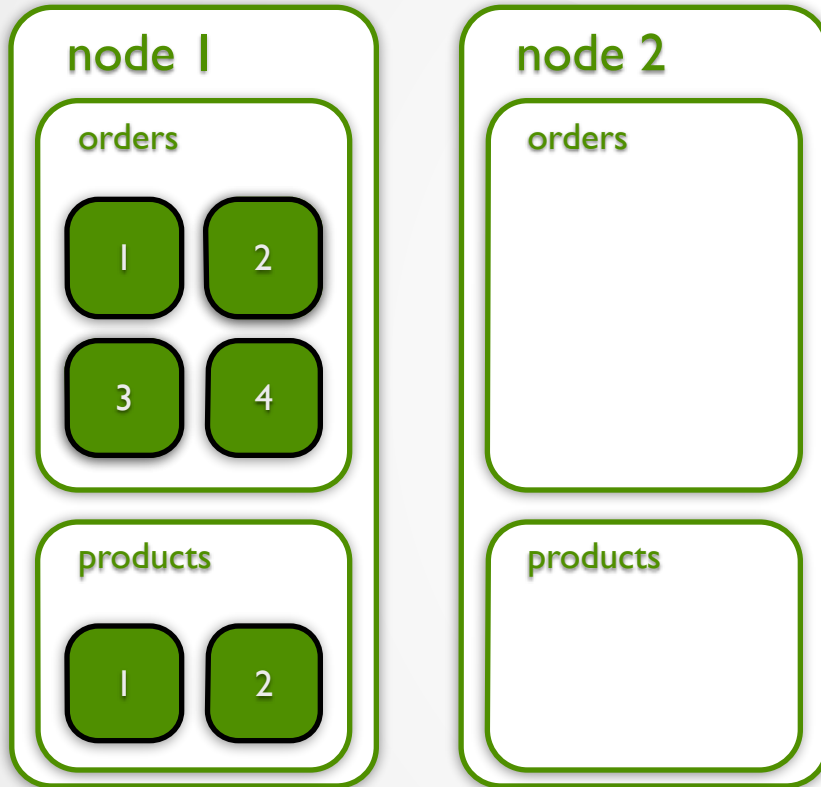
```
$ ./elasticsearch-1.0.0/bin/elasticsearch  
[INFO ][node                ][Armageddon] {1.0.0}[5645]: initializing  
[INFO ][cluster.service][Armageddon] detected_master [Ghost Maker]
```

Distributed indices

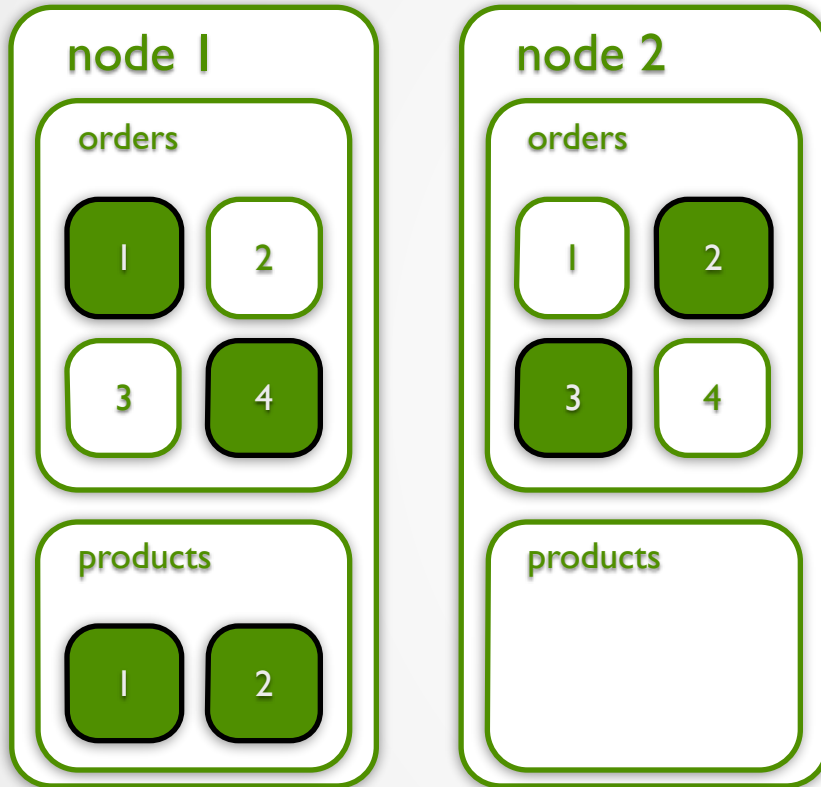


```
$ ./elasticsearch-1.0.0/bin/elasticsearch
[INFO ][node                ][Armageddon] {1.0.0}[5645]: initializing
[INFO ][cluster.service][Armageddon] detected_master [Ghost Maker]
```

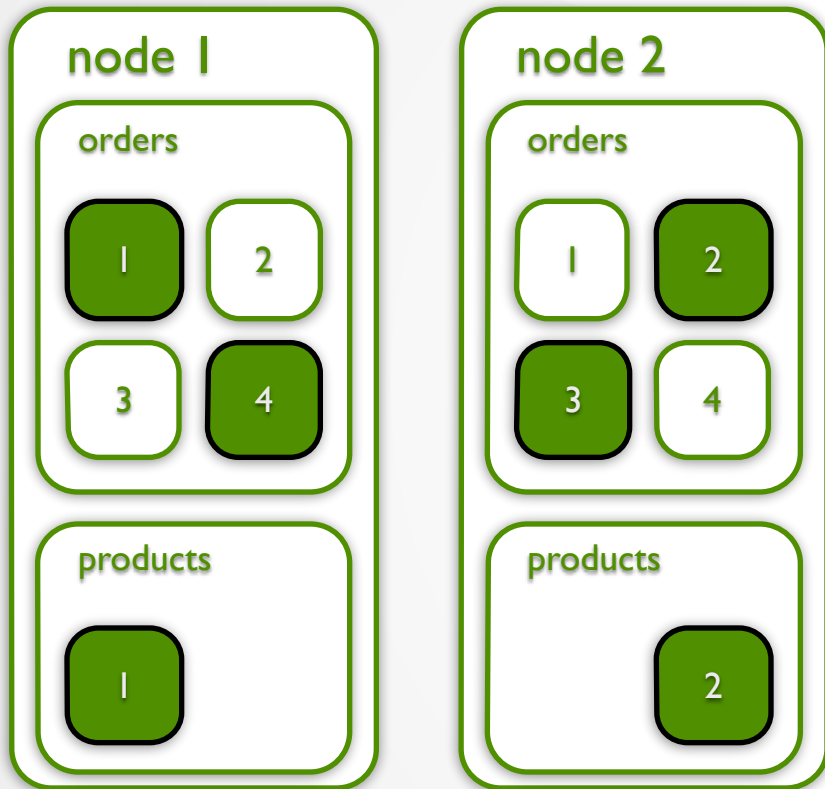
Distributed indices



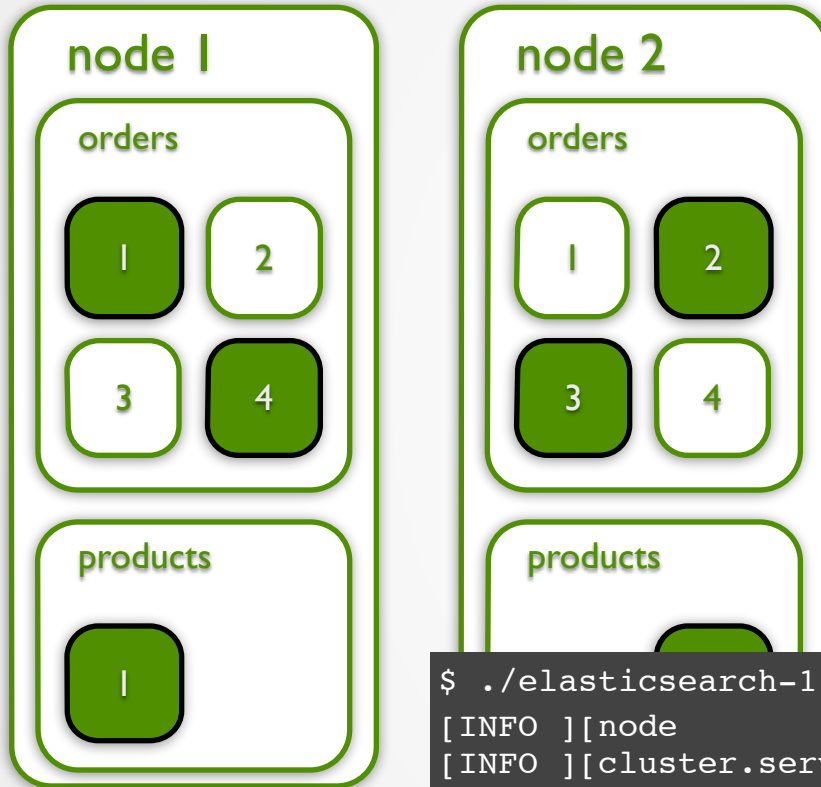
Distributed indices



Distributed indices

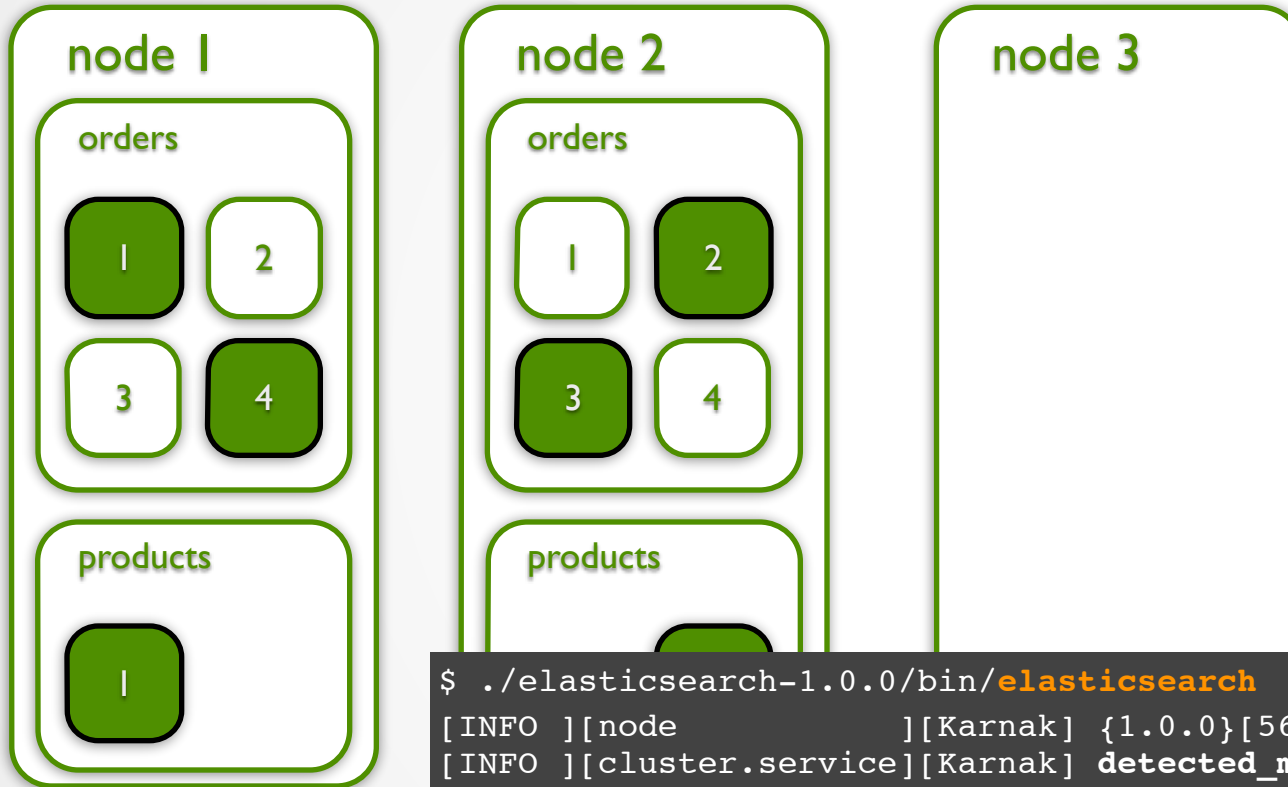


Distributed indices



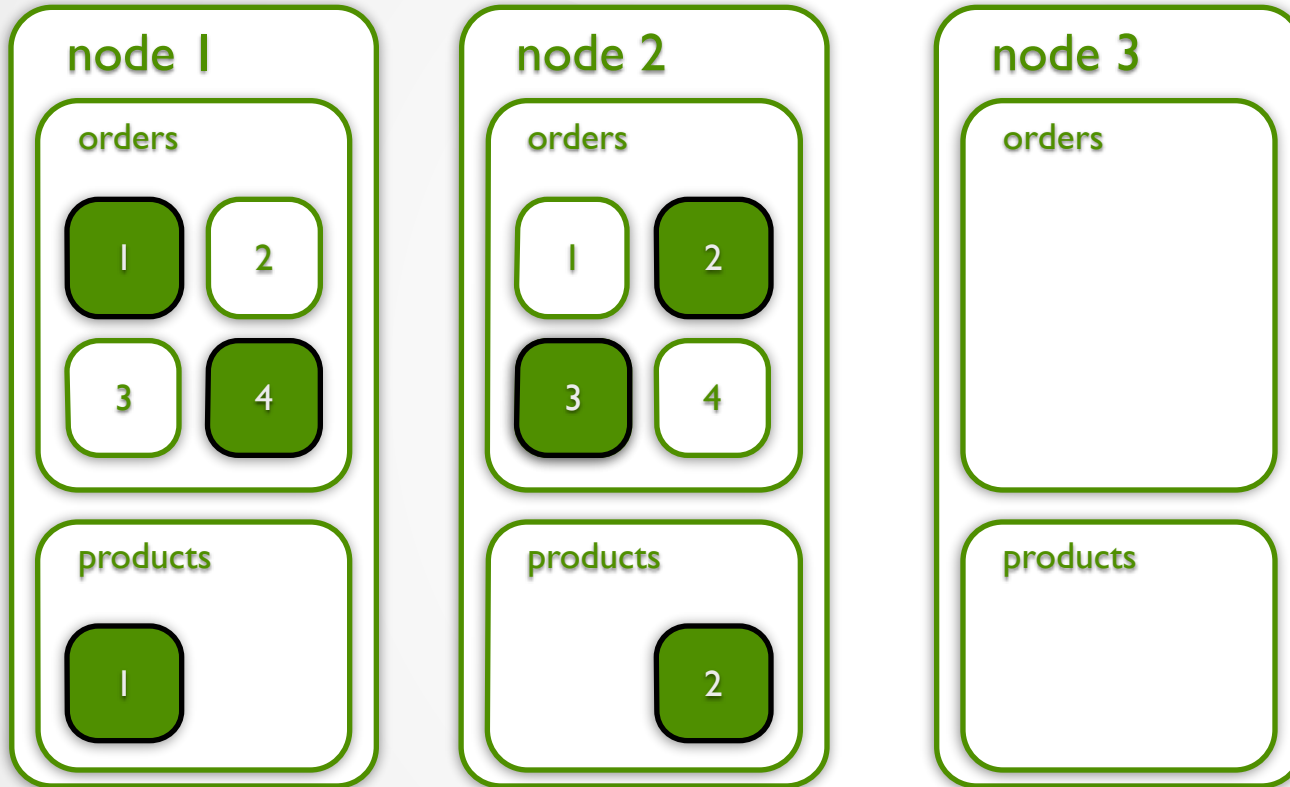
```
$ ./elasticsearch-1.0.0/bin/elasticsearch  
[INFO ][node                ][Karnak] {1.0.0}[5645]: initializing  
[INFO ][cluster.service][Karnak] detected_master [Ghost Maker]
```

Distributed indices

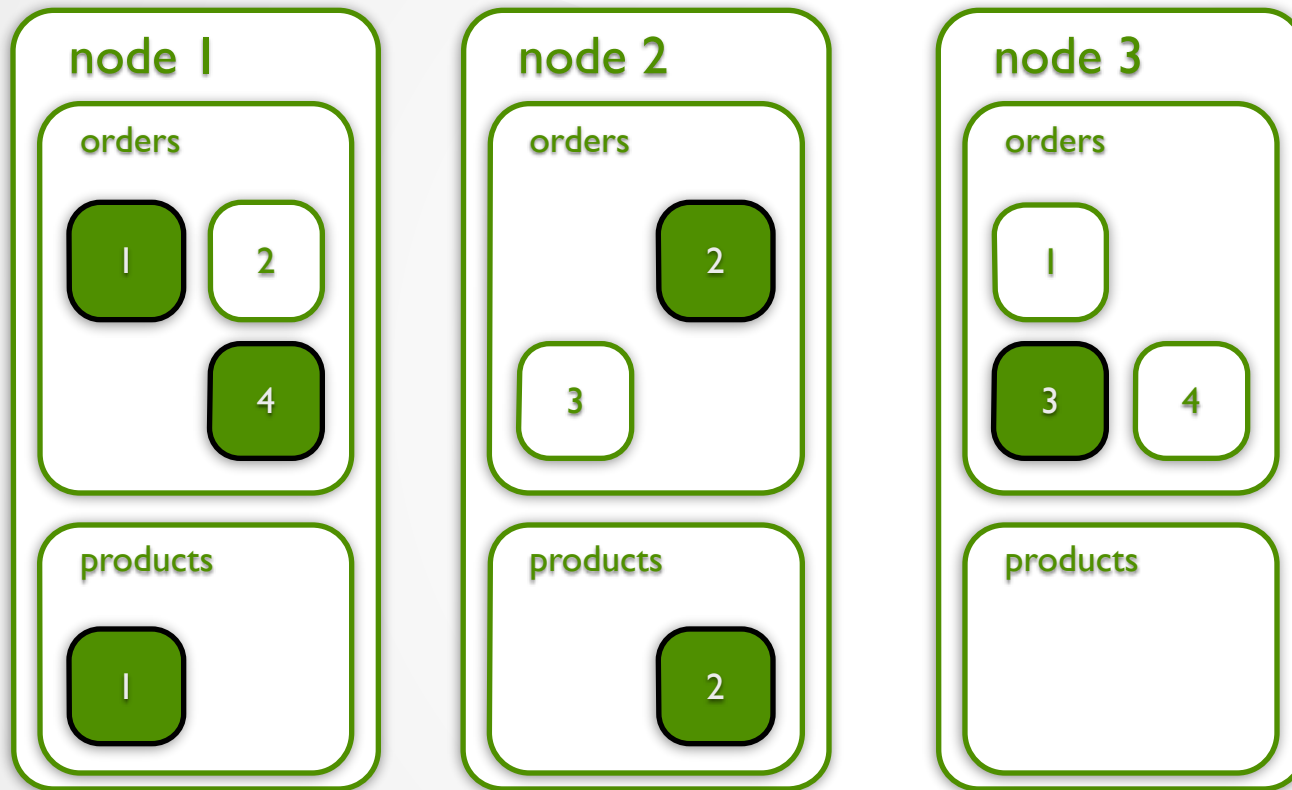


```
$ ./elasticsearch-1.0.0/bin/elasticsearch
[INFO ][node                ][Karnak] {1.0.0}[5645]: initializing
[INFO ][cluster.service][Karnak] detected_master [Ghost Maker]
```

Distributed indices



Distributed indices



ELASTICSEARCH SUR AZURE

Discovery ?



Deploying on Azure (unicast)

Cloud service: your-es.cloudapp.net

VM
node 1
private IP1

VM
node 2
private IP2

```
discovery.zen.ping.multicast.enabled: false  
discovery.zen.ping.unicast.hosts: ["ip1", "ip2"]
```

Deploying on Azure (unicast)

Cloud service: your-es.cloudapp.net

VM
node 1
private IP1

VM
node 2
private IP2

VM
node 3
private IP3

```
discovery.zen.ping.multicast.enabled: false  
discovery.zen.ping.unicast.hosts: ["ip1", "ip2", "ip3"]
```


Deploying on Azure (cloud plugin)

Cloud service: your-es.cloudapp.net

VM
node 1
private IP1

VM
node 2
private IP2

VM
node 3
private IP3

Azure
REST
API



Deploying on Azure (cloud plugin)

Cloud service: your-es.cloudapp.net

VM
node 1
private IP1

VM
node 2
private IP2

VM
node 3
private IP3

Azure
REST
API



```
cloud:
  azure:
    keystore: /path/to/keystore
    password: your_password_for_keystore
    subscription_id: your_azure_subscription_id
    service_name: your-es
  discovery:
    type: azure
```



<https://github.com/elasticsearch/elasticsearch-cloud-azure>

démo

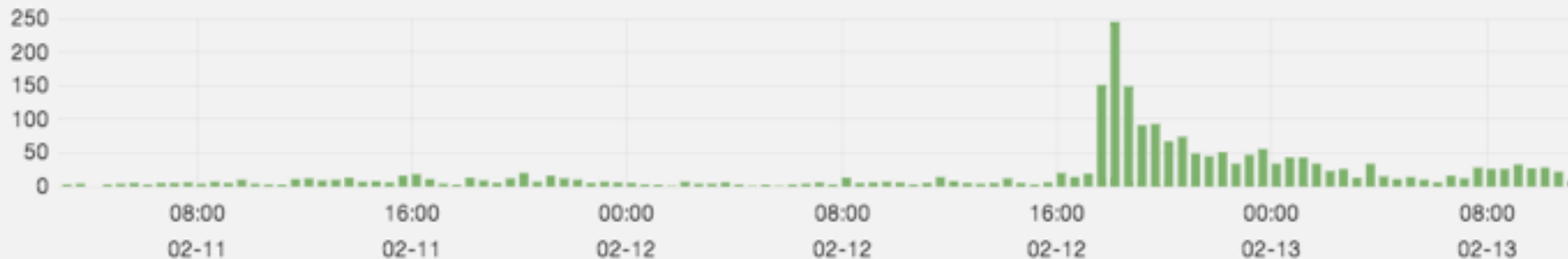
ELASTICSEARCH ON AZURE

Scale out!

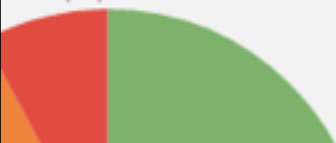
DATE



View | Zoom Out | All (2222) count per 30m | (2222 hits)



logstash (42) springdata (26)
cene (11)



MENTIONS (-ELASTICSEARCH)



kimchy (172) newsycombinator (49)
dadoonet (48) s1m0nw (35) uboness (17)
olivergierke (15) foundsays (15)
stevenschuurman (11) parisjug (10)
fideloper (7)

TRENDS (30 DAYS)



630.92% (All)



Microsoft

Microsoft
tech·days
2014

Digital is
business

QUESTIONS ?

@dadoonet / @tomconte