



David Pilato
Developer | Evangelist
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Ingest Node

(re)indexing and enriching documents within Elasticsearch

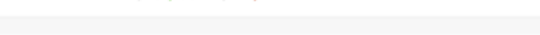
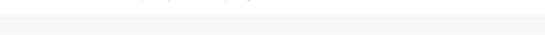
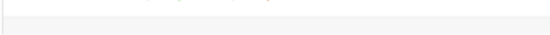
is powered by



[Code](#) [Issues 1,044](#) [Pull requests 89](#) [Pulse](#) **Graphs** [Settings](#)[Contributors](#) [Traffic](#) [Commits](#) [Code frequency](#) [Punch card](#) [Network](#) [Members](#)

Feb 7, 2010 – Sep 5, 2016

Contributions to master, excluding merge commits

Contributions: **Commits** **kimchy** #1
4,737 commits / 1,401,534 ++ / 1,064,899 -- **s1monw** #2
2,216 commits / 1,219,296 ++ / 1,217,559 -- **dadoonet** #3
1,171 commits / 128,081 ++ / 84,741 -- **javanna** #4
1,101 commits / 142,713 ++ / 119,744 -- **martijnvg** #5
1,093 commits / 212,940 ++ / 142,674 -- **clintongormley** #6
854 commits / 232,442 ++ / 30,976 -- **rmuir** #7
833 commits / 161,166 ++ / 147,023 -- **jasontedor** #8
772 commits / 62,452 ++ / 37,875 -- **jpountz** #9
737 commits / 173,140 ++ / 204,220 --

Elastic Stack

User Interface



Kibana

Store, Index,
& Analyze



Elasticsearch



X-Pack

Ingest



Logstash



Beats

Security

Alerting

Monitoring

Reporting

Graph



Elastic Cloud

The only Elasticsearch as a Service offering powered by the creators of the Elastic Stack

- Always runs on the latest software
- One-click to scale/upgrade with no downtime
- Free Kibana and backups every 30 minutes
- Dedicated, SLA-based support
- Easily add X-Pack features: security (Shield), alerting (Watcher), and monitoring (Marvel)
- Pricing starts at \$45 a month

Cluster Size

Choose a cluster size. Cluster size can be changed later without downtime.

● Memory ● Storage (SSD)



1 GB 2 GB 4 GB 8 GB 16 GB 32 GB 64 GB 128 GB 256 GB 512 GB 1 TB 2 TB 3 TB 4 TB

Region

Choose a data center near you.

[US West \(N. California\)](#)
[US East \(N. Virginia\)](#)
[Europe \(Ireland\)](#)
[Asia Pacific \(Singapore\)](#)
[Asia Pacific \(Tokyo\)](#)
[South America East](#)

[Asia Pacific \(Sydney\)](#)



High Availability (HA)

Protect your cluster with replication and automatic failover.



1 data center.
Great for testing and development.



2 data centers.
For production use.



3 data centers.
For mission critical environments.



Some data

```
CREATE TABLE user
(
  name VARCHAR(100),
  comments VARCHAR(1000)
);
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at french customs service');
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

Search on term

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');  
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at  
french customs service');  
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');  
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

```
SELECT * FROM user WHERE name="David";  
Empty set (0,00 sec)
```

Search like

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at french customs service');
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

```
SELECT * FROM user WHERE name LIKE "%David%";
```

name	comments
David Pilato	Developer at elastic
David Gageot	Engineer at Docker
David David	Who is that guy?

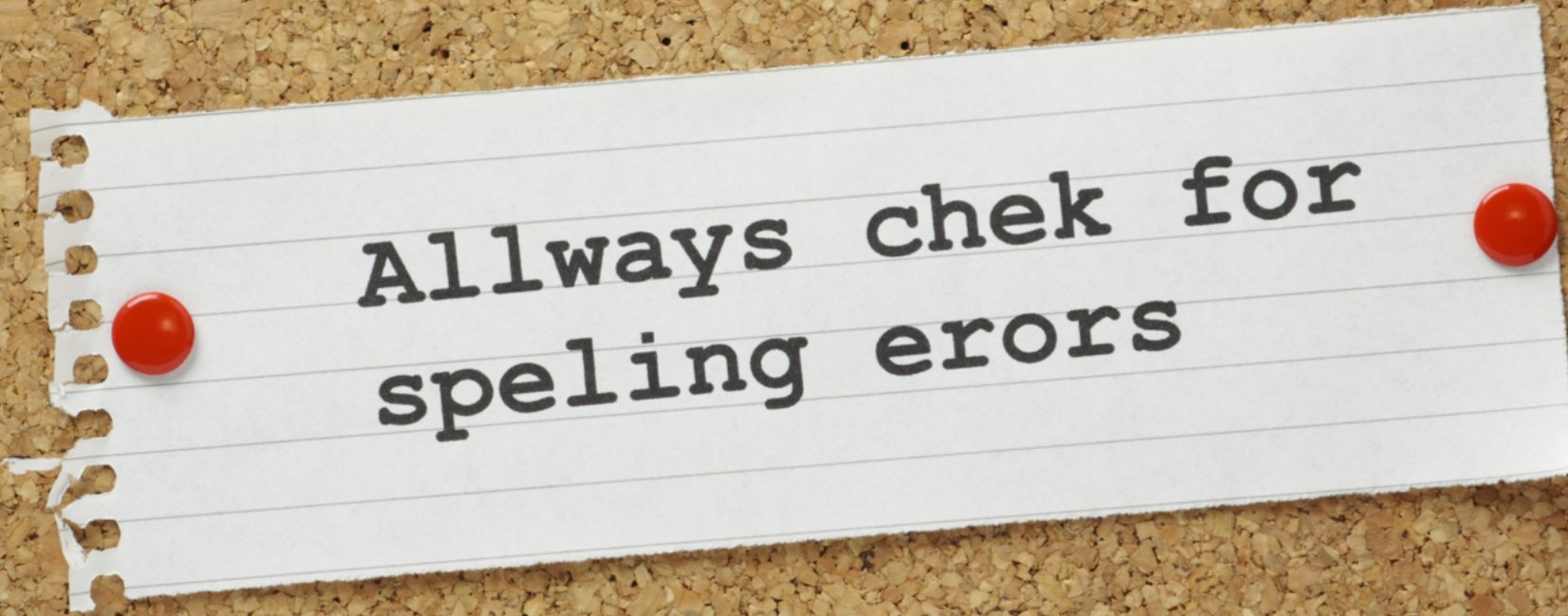
Search in two fields

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at french customs service');
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

```
SELECT * FROM user WHERE name LIKE "%David%" OR
                           comments LIKE "%David%";
```

name	comments
David Pilato	Developer at elastic
Malloum Laya	Worked with David at french customs service
David Gageot	Engineer at Docker
David David	Who is that guy?





Allways chek for
speling erors

Search with typos

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');  
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at  
french customs service');  
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');  
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

```
SELECT * FROM user WHERE name LIKE "%Dadid%";  
Empty set (0,00 sec)
```


Search with typos

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at french customs service');
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

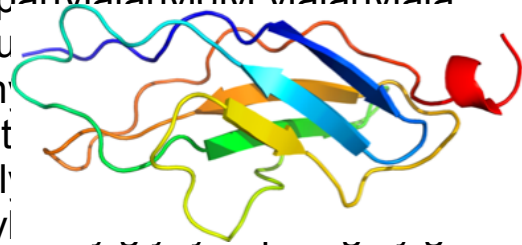
```
SELECT * FROM user WHERE name LIKE "%_adid%" OR
                           name LIKE "%D_did%" OR
                           name LIKE "%Da_id%" OR
                           name LIKE "%Dad_d%" OR
                           name LIKE "%Dadi_%";
```

David Pilato	Developer at elastic
David Gageot	Engineer at Docker
David David	Who is that guy?



Pneumonoultramicroscopicsilicovolcanokoniosis
(45 Letters)

Methionylthreonylthreonylglutaminylarginyltyrosylglutamylserylleucylphenylalanylalanylglutaminylleucyllysylglutamylarginyllysylglutamylglycylalanylphenylalanylvalylprolylphenylalanylvalylthreonylleucylglycylaspartylprolylglucylisoleucylglutamylglutaminylserylleucyllysylisoleucylaspartylthreonylleucylisoleucylglutamylalanylglucylalanylasparylalanylleucylglutamylleucylglycylisoleucylprolylphenylalanylserylasparylprolylleucylalanylasparylglucylprolylthreonylisoleucylglutaminylasparaginyalanylthreonylleucylarginylalanylphenylalanylalanylalanylglycylvalylthreonylprolylalanylglutaminylcysteinylphenylalanylglytamylmethionylleucylalanylleucylisoleucylarginylglutaminyllysylhistidylprolylthreonylisoleucylprolylisoleucylglycylleucylleucylmethionyltyrosylalanylasparginylleucylvalylphenylalanylasparginyllysylglycylisoleucylaspartylglutamylphenylalanyltyrosylalanylglutaminylcysteinylglutamyllysylvalylglycylvalylaspartylserylvalylleucylvalylalanylasparylvalylprolylvalylglutaminylglutamylserylalanylprolylphenylalanylarginylglutaminylalanylalanylleucylarginylhistidylasparginylvalylalanylprolylisoleucylphenylalanylisoleucylcysteinylprolylprolylasparylalanylasparylasparylasparylleucylleucylarginylglutaminylisoleucylalanylseryltyrosylglycylarginylglycyltyrosylthreonyltyrosylleucylleucylserylarginylalanylglycylvalylthreonylglucylalanylglutamylasparginylarginylalanylalanylleucylprolylleucylasparginylhistidylleucylvalylalanyllsylleucyllysylglutamyltyrosylasparginylalanylalanylprolylprolylleucylglutaminylglycylphenylalanylglycylisoleucylserylalanylprolylasparylglutaminylvalyllsyalalanylalanylisoleucylasparylalanylglycylalanylisoleucylserylglucylserylalanylisoleucylvalyllsylisoleucylisoleucylidylasparginylisoleucylglutamylprolylglutamyllysylmethionylleucylalanylalanylvalylglutaminylprolylmethionyllsyalalanylalanylthreonylarginylacetylseryltyrosylserylprolylserylglutaminylphenylalanylvalylphenylalanylleucylserylserylvalylprolylisoleucylglutamylleucylleucylasparginylvalylcysteinylthreonylserylserylglutaminylphenylalanylglutaminylthreonylglutaminylglutaminylalanylarginylthreonylthreonylglutaminylvalylglutaminylglutaminylphenylalanylserylglutaminylvalyltryptophyllsylprolylphenylalanylprolylglutaminylserylthreonylvalylarginylphenylalanylprolylglucylasparylvalyltyrosyllsylvalyltyrosylarginyltyrosylasparginyl





Search for terms

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at french customs service');
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

```
SELECT * FROM user WHERE name LIKE "%David Pilato%";
```

name	comments
David Pilato	Developer at elastic

Search with inverted terms

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');  
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at  
french customs service');  
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');  
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

```
SELECT * FROM user WHERE name LIKE "%Pilato David%";  
Empty set (0,00 sec)  
SELECT * FROM user WHERE name LIKE "%Pilato%David%";  
Empty set (0,00 sec)
```

Search for terms

```
INSERT INTO user VALUES ('David Pilato', 'Developer at elastic');
INSERT INTO user VALUES ('Malloum Laya', 'Worked with David at french customs service');
INSERT INTO user VALUES ('David Gageot', 'Engineer at Docker');
INSERT INTO user VALUES ('David David', 'Who is that guy?');
```

```
SELECT * FROM user WHERE name LIKE "%David%" AND
                                name LIKE "%Pilato%";
```

name	comments
David Pilato	Developer at elastic

Search like within 1 000 000 000 records...

```
SELECT * FROM user WHERE name LIKE "%David%";
```





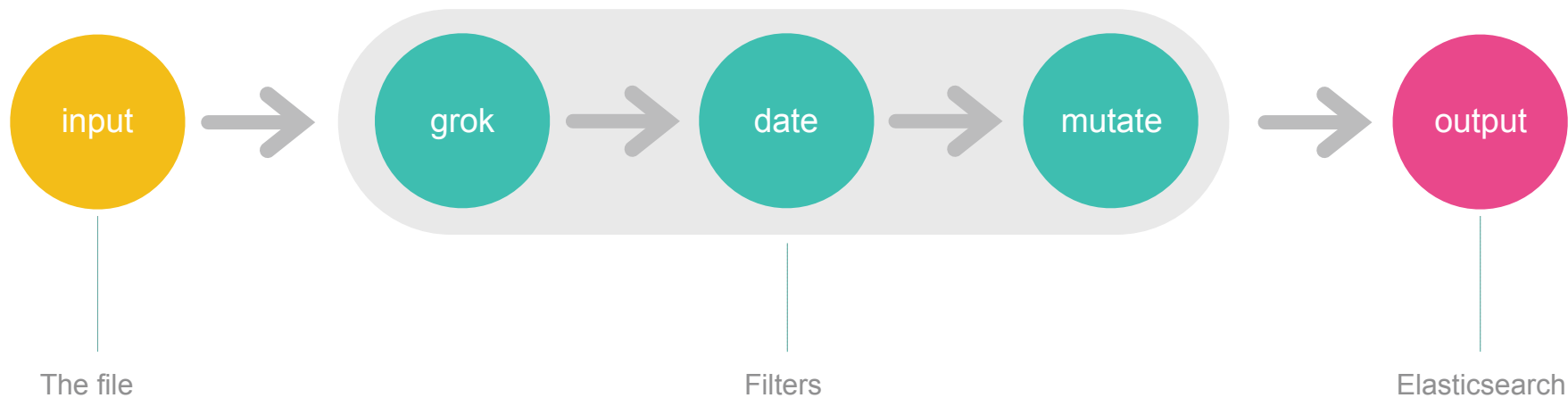


Why ingest node?

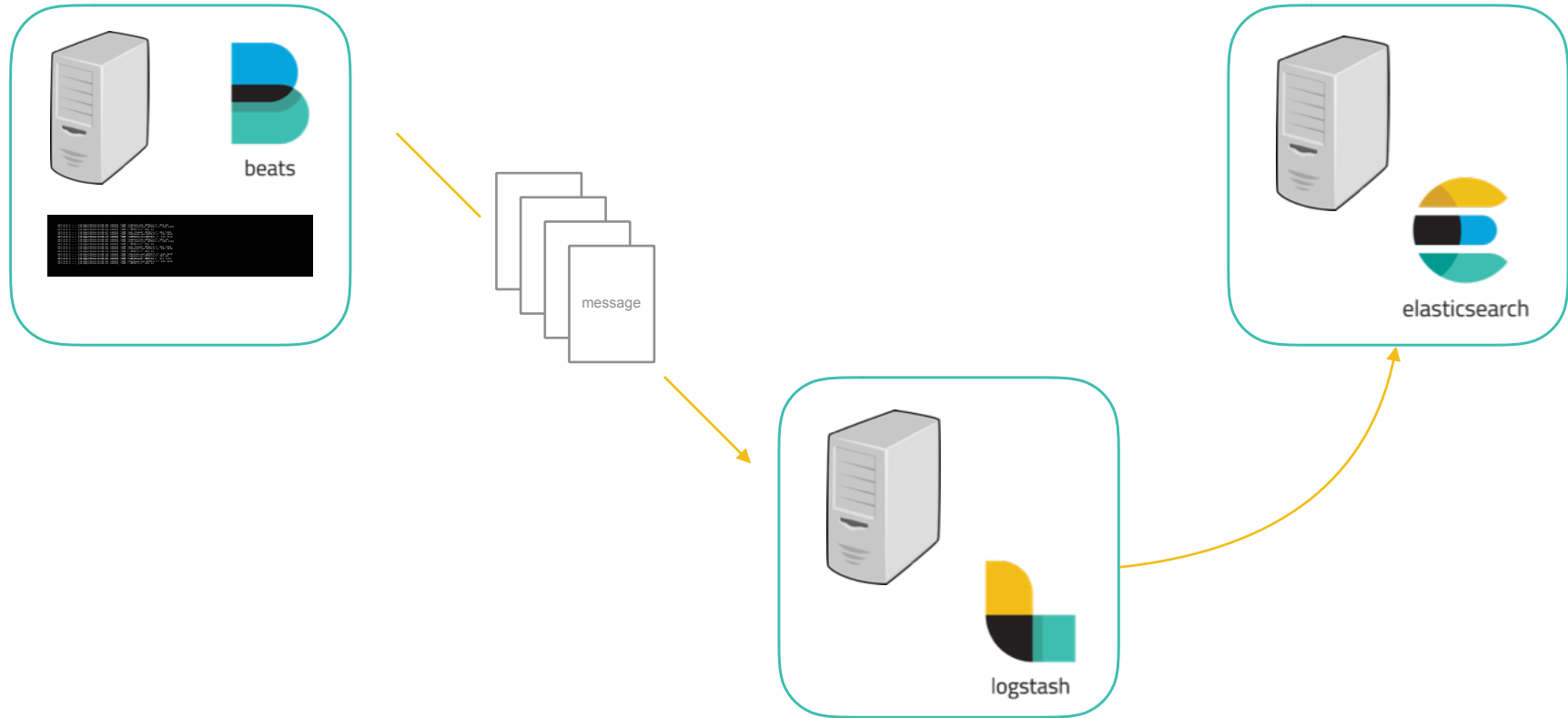


I just want to tail a file.

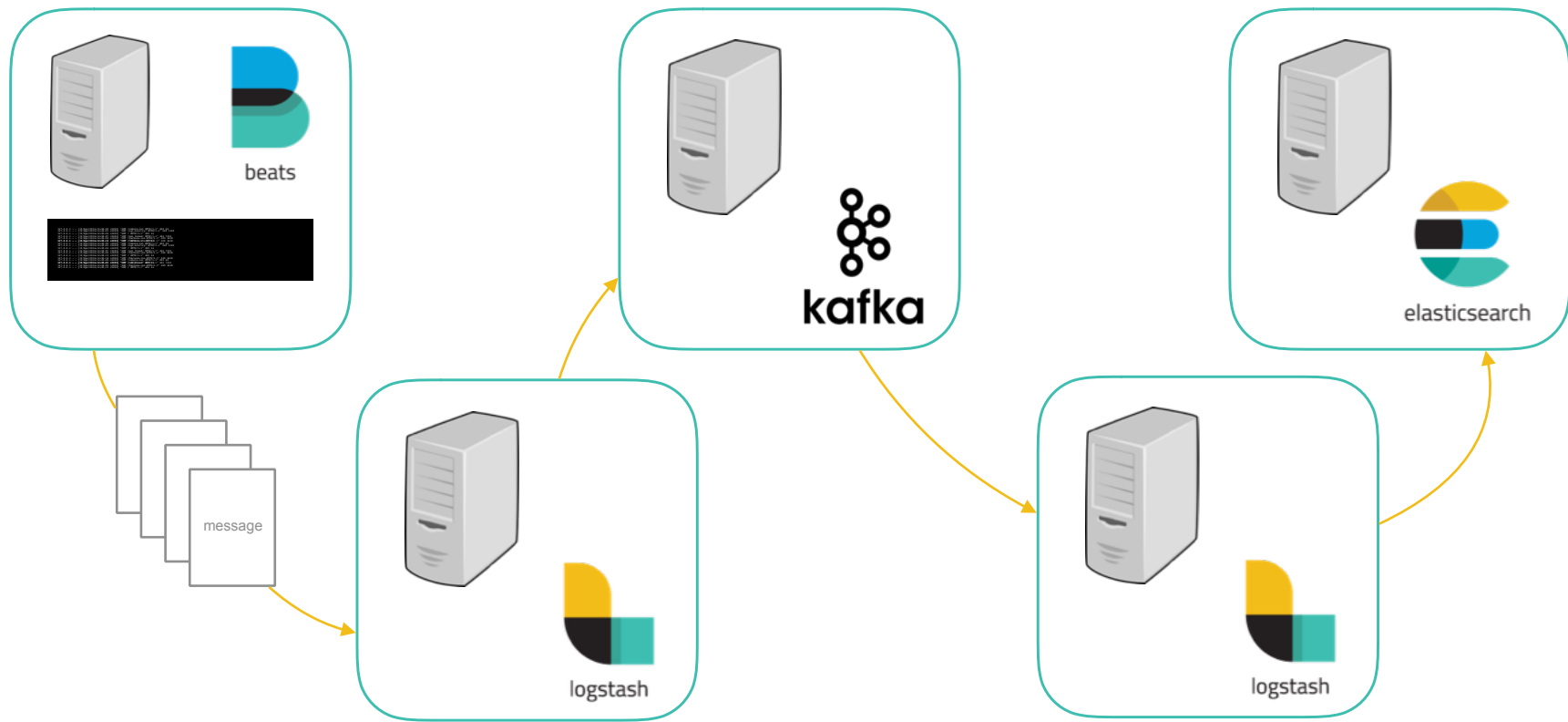
Logstash: collect, enrich & transport



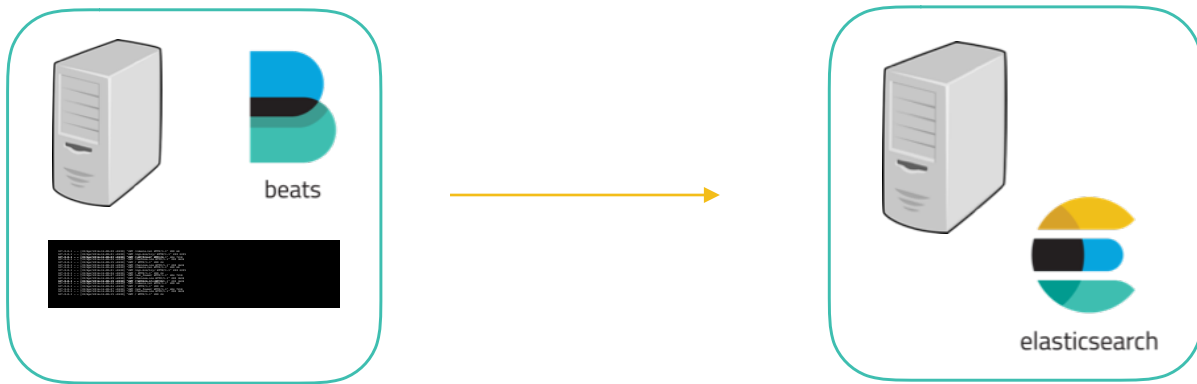
Logstash common setup



Or ...



Ingest node setup



Filebeat: collect and ship

```
127.0.0.1 - - [19/Apr/2016:12:00:04 +0200] "GET / HTTP/1.1" 200 24
127.0.0.1 - - [19/Apr/2016:12:00:07 +0200] "GET /not_found/ HTTP/1.1" 404 7218
127.0.0.1 - - [19/Apr/2016:12:00:09 +0200] "GET /favicon.ico HTTP/1.1" 200 3638
```



beats

```
{
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:04 +0200] \"GET / HTTP/1.1\" 200 24"
}
```

```
{
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:07 +0200] \"GET /not_found/ HTTP/1.1\" 404 7218"
}
```

```
{
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:09 +0200] \"GET /favicon.ico HTTP/1.1\" 200 3638"
}
```



elasticsearch

Elasticsearch: enrich and index

```
{  
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:04 +0200] \"GET / HTTP/1.1\" 200 24"  
}
```

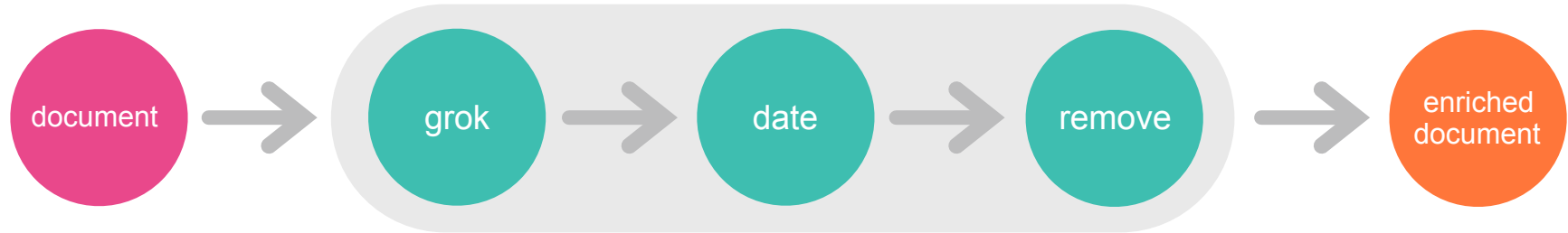


```
{  
  "request" : "/",  
  "auth" : "-",  
  "ident" : "-",  
  "verb" : "GET",  
  "@timestamp" : "2016-04-19T10:00:04.000Z",  
  "response" : "200",  
  "bytes" : "24",  
  "clientip" : "127.0.0.1",  
  "httpversion" : "1.1",  
  "rawrequest" : null,  
  "timestamp" : "19/Apr/2016:12:00:04 +0200"  
}
```



How does ingest node work?

Ingest pipeline



Pipeline: a set of processors

grok uppercase split rename set
attachment geoip
append remove gsub lowercase
fail foreach join date
trim convert

Grok processor

Extracts structured fields out of a single text field

```
{  
  "grok": {  
    "field": "message",  
    "patterns": [ "%{DATE:date}" ]  
  }  
}
```

Mutate processors

set, remove, rename, convert,
gsub, split, join, lowercase,
uppercase, trim, append

```
{  
  "remove": {  
    "field": "message"  
  }  
}
```

Date processor

Parses a date from a string

```
{  
  "date": {  
    "field": "timestamp",  
    "formats": ["YYYY"]  
  }  
}
```

Geoip processor

Adds information about the geographical location of IP addresses

```
{  
  "geoip": {  
    "field": "ip"  
  }  
}
```

Foreach processor

Do something for every element of an array

```
{
  "foreach": {
    "field" : "values",
    "processor" : {
      "uppercase" : {
        "field" : "_ingest._value"
      }
    }
  }
}
```

Plugins

Introducing new processors is as easy as writing a plugin

```
{  
  "your_plugin": {  
    ...  
  }  
}
```

Define a pipeline

```
PUT /_ingest/pipeline/apache-log
{
  "processors" : [
    {
      "grok" : {
        "field": "message",
        "patterns": [ "%{COMMONAPACHELOG}" ]
      }
    },
    {
      "date" : {
        "field" : "timestamp",
        "formats" : [ "dd/MMM/YYYY:HH:mm:ss Z" ]
      }
    },
    {
      "remove" : {
        "field" : "message"
      }
    }
  ]
}
```


Pipeline management

Create, Read, Update & Delete

```
PUT /_ingest/pipeline/apache-log
{
  ...
}
```

```
GET /_ingest/pipeline/apache-log
```

```
GET /_ingest/pipeline/*
```

```
DELETE /_ingest/pipeline/apache-log
```



**Where can ingest
pipelines be used?**

Index api

```
PUT /logs/apache/1?pipeline=apache-log
{
  "message" : "..."
```

Bulk api

```
PUT /logs/_bulk
{ "index": { "_type": "apache", "_id":
"1", "pipeline": "apache-log" } } \n
{ "message" : "..."} \n
{ "index": { "_type": "mysql", "_id":
"1", "pipeline": "mysql-log" } } \n
{ "message" : "..."} \n
```

Reindex api

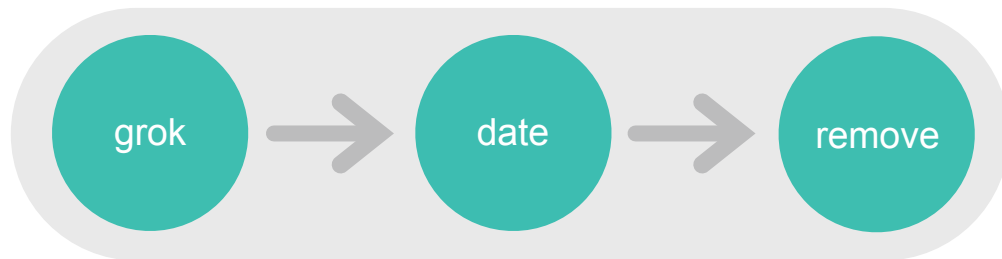
Scroll & bulk indexing
made easy

```
POST /_reindex
{
  "source": {
    "index": "logs",
    "type": "apache"
  },
  "dest": {
    "index": "apache-logs",
    "pipeline" : "apache-log"
  }
}
```

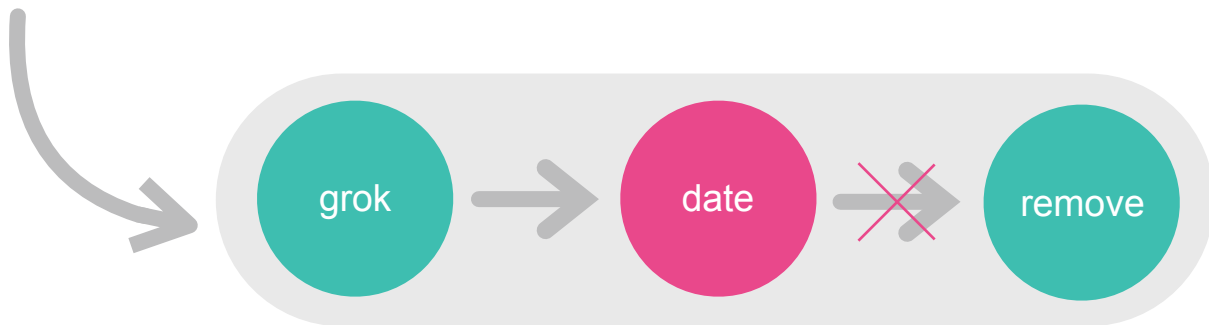


Error handling

```
{  
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:00 +040] \\"GET / HTTP/1.1\\" 200 24"  
}
```



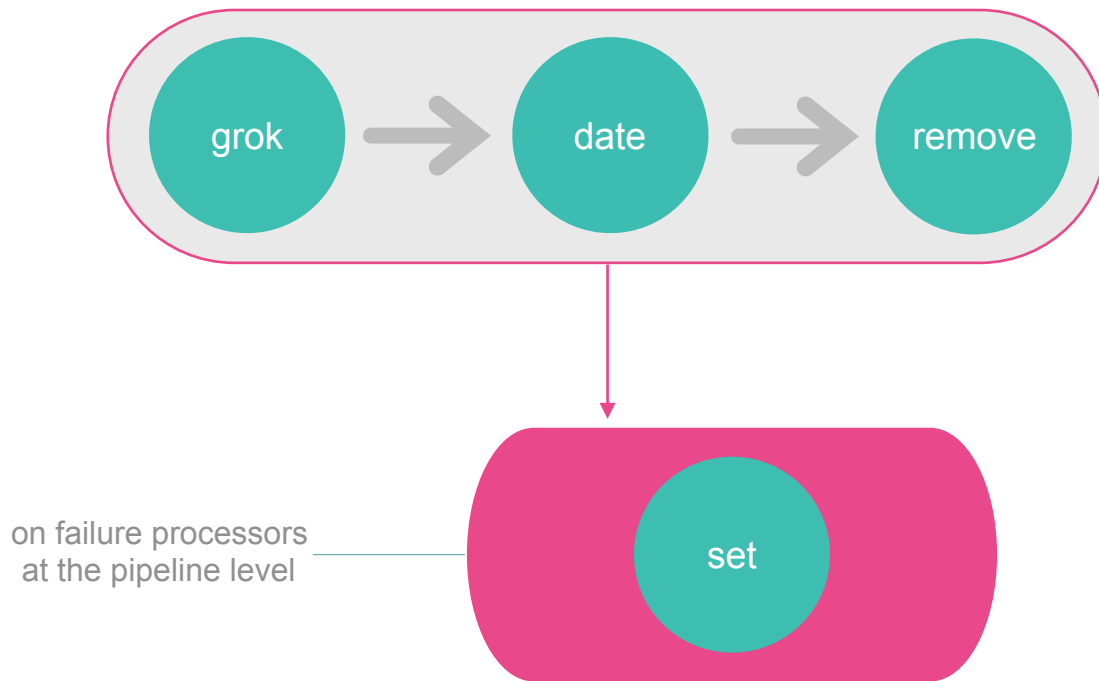
```
{  
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:00 +040] \"GET / HTTP/1.1\" 200 24"  
}
```



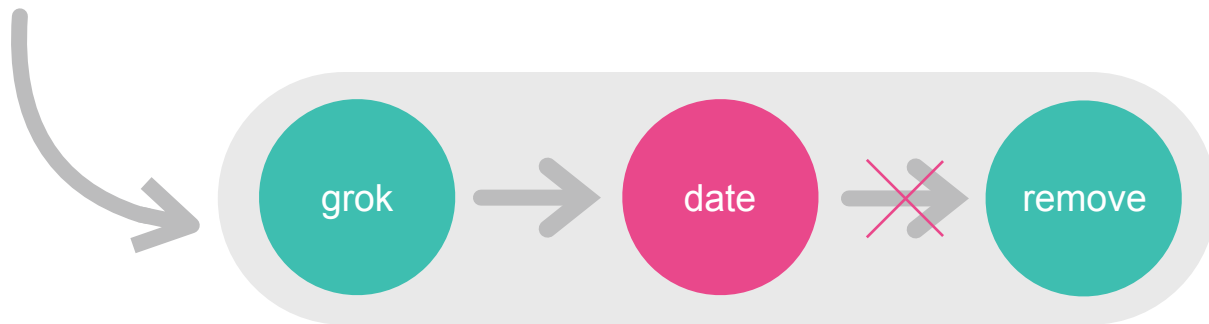
400 Bad Request

unable to parse date [19/Apr/2016:12:00:00 +040]


```
{  
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:00 +040] \\"GET / HTTP/1.1\\" 200 24"  
}
```



```
{  
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:00 +0400] \\"GET / HTTP/1.1\\" 200 24"  
}
```

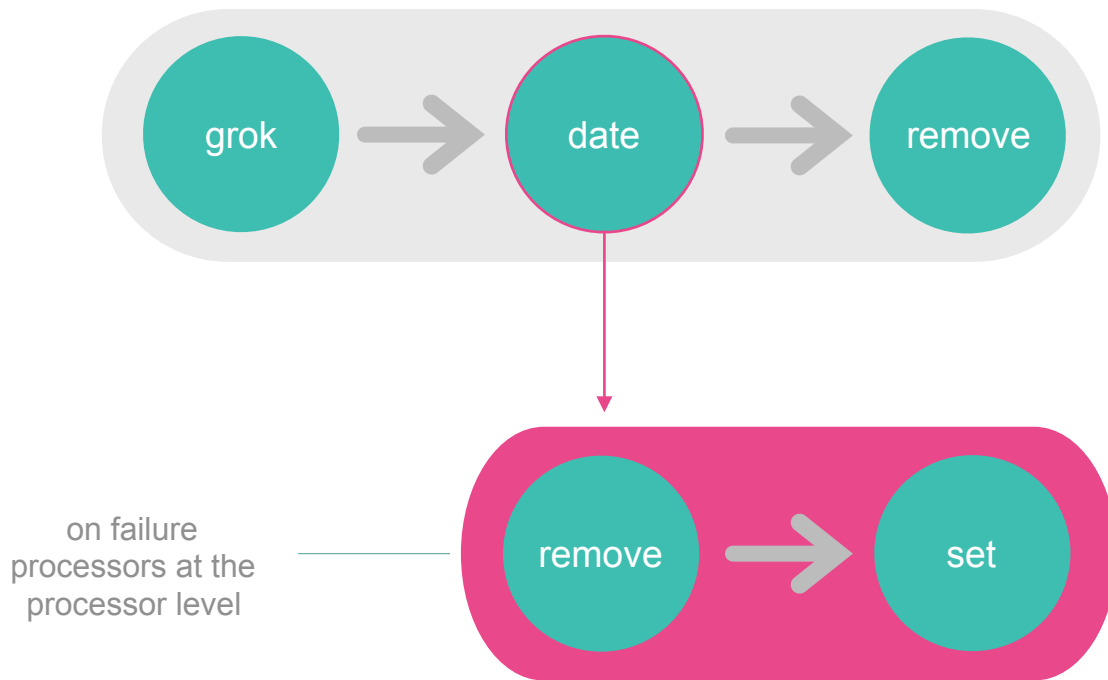


on failure processors
at the pipeline level

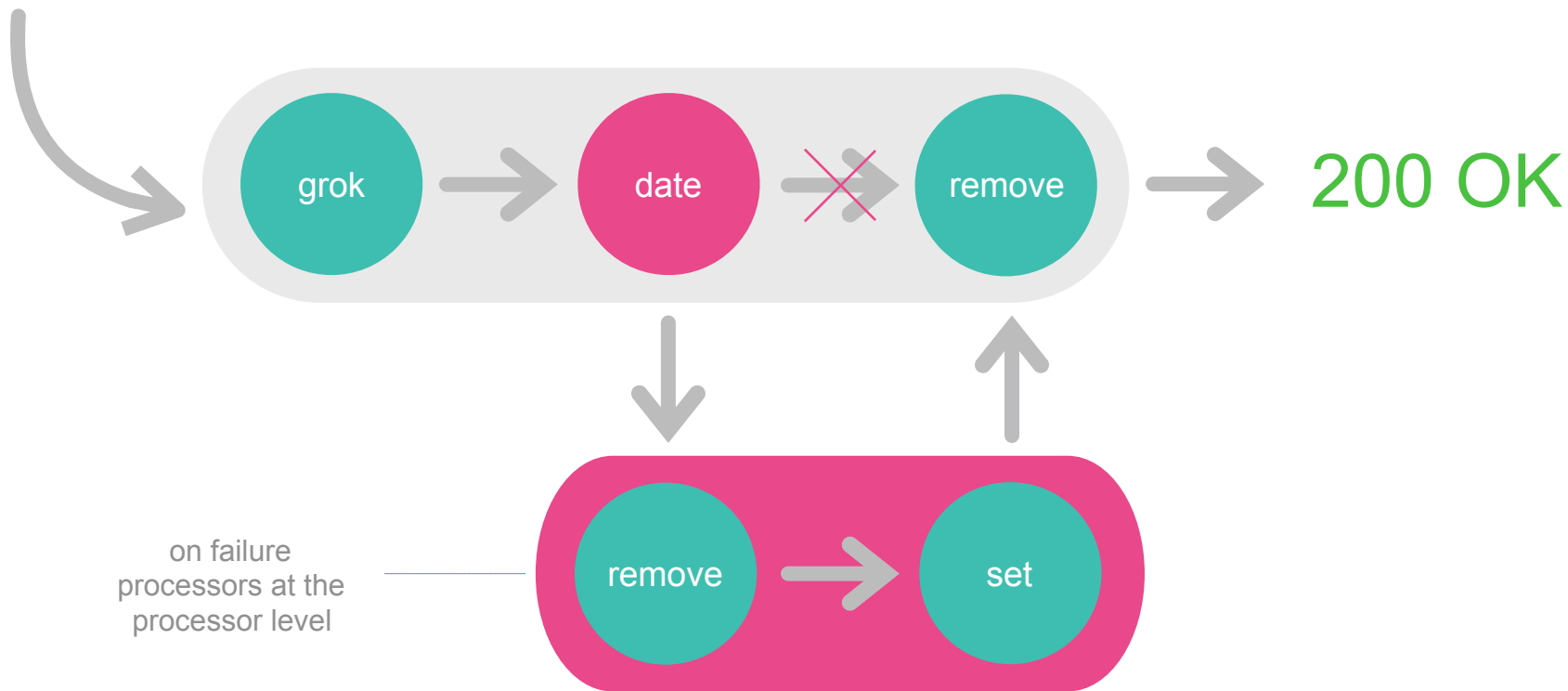


200 OK

```
{  
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:00 +040] \"GET / HTTP/1.1\" 200 24"  
}
```



```
{  
  "message" : "127.0.0.1 - - [19/Apr/2016:12:00:00 +040] \"GET / HTTP/1.1\" 200 24"  
}
```



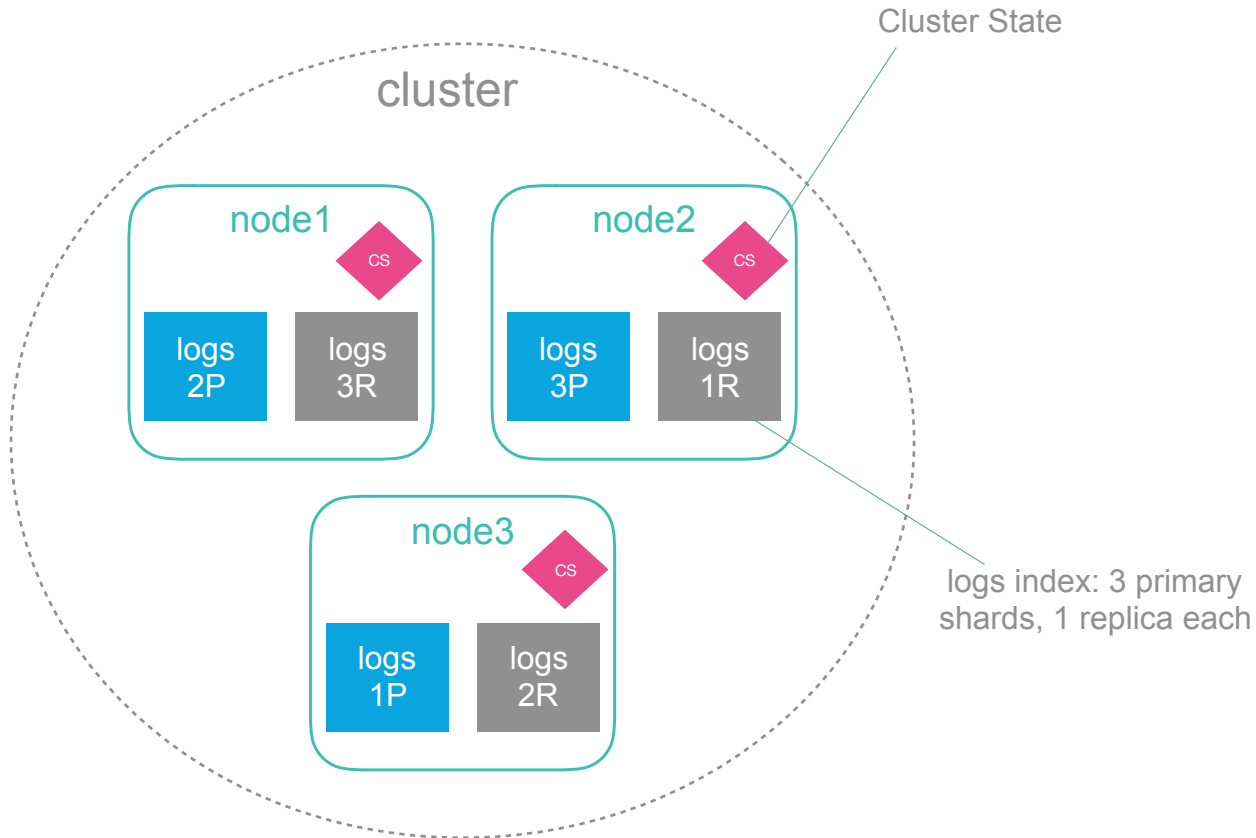


Ingest node internals

Default scenario

All nodes are equal:

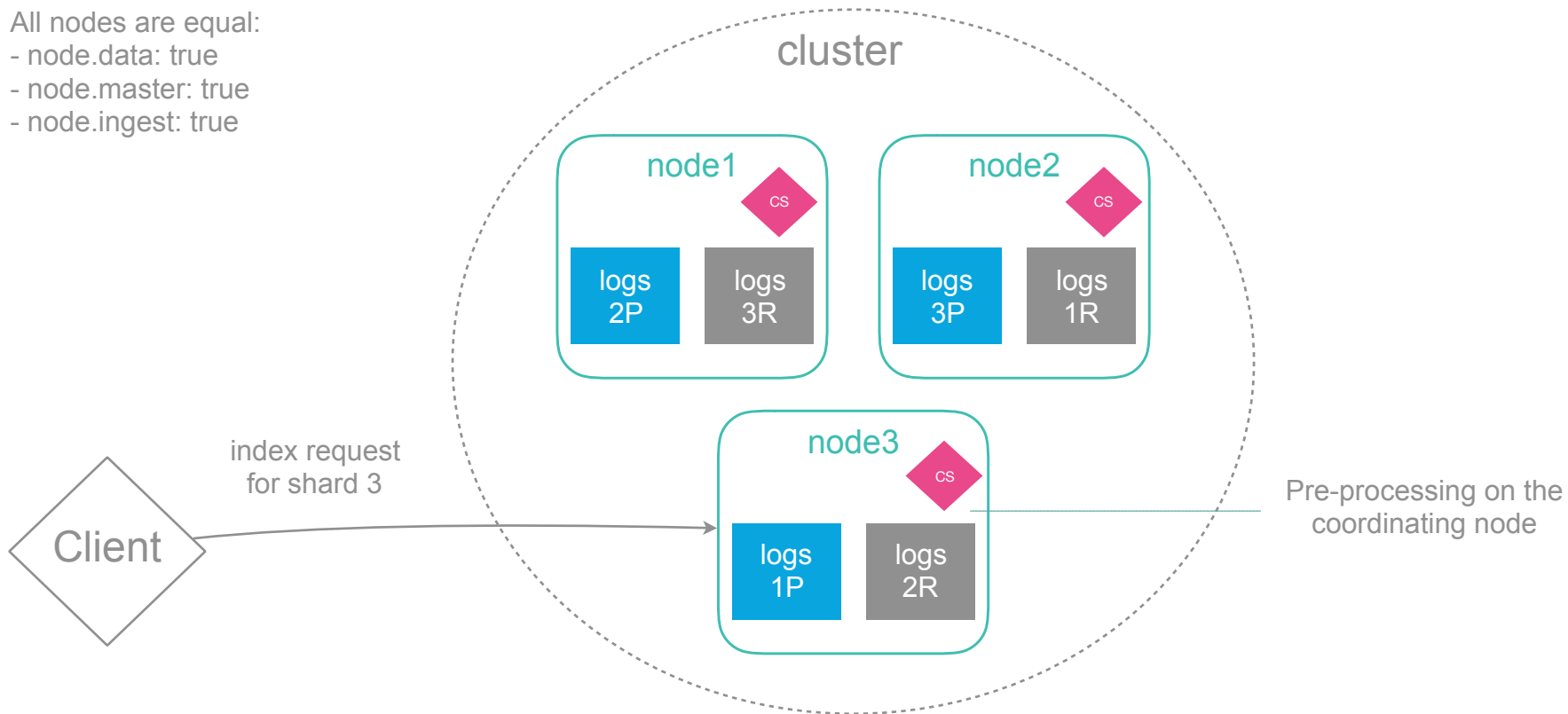
- node.data: true
- node.master: true
- node.ingest: true



Default scenario

All nodes are equal:

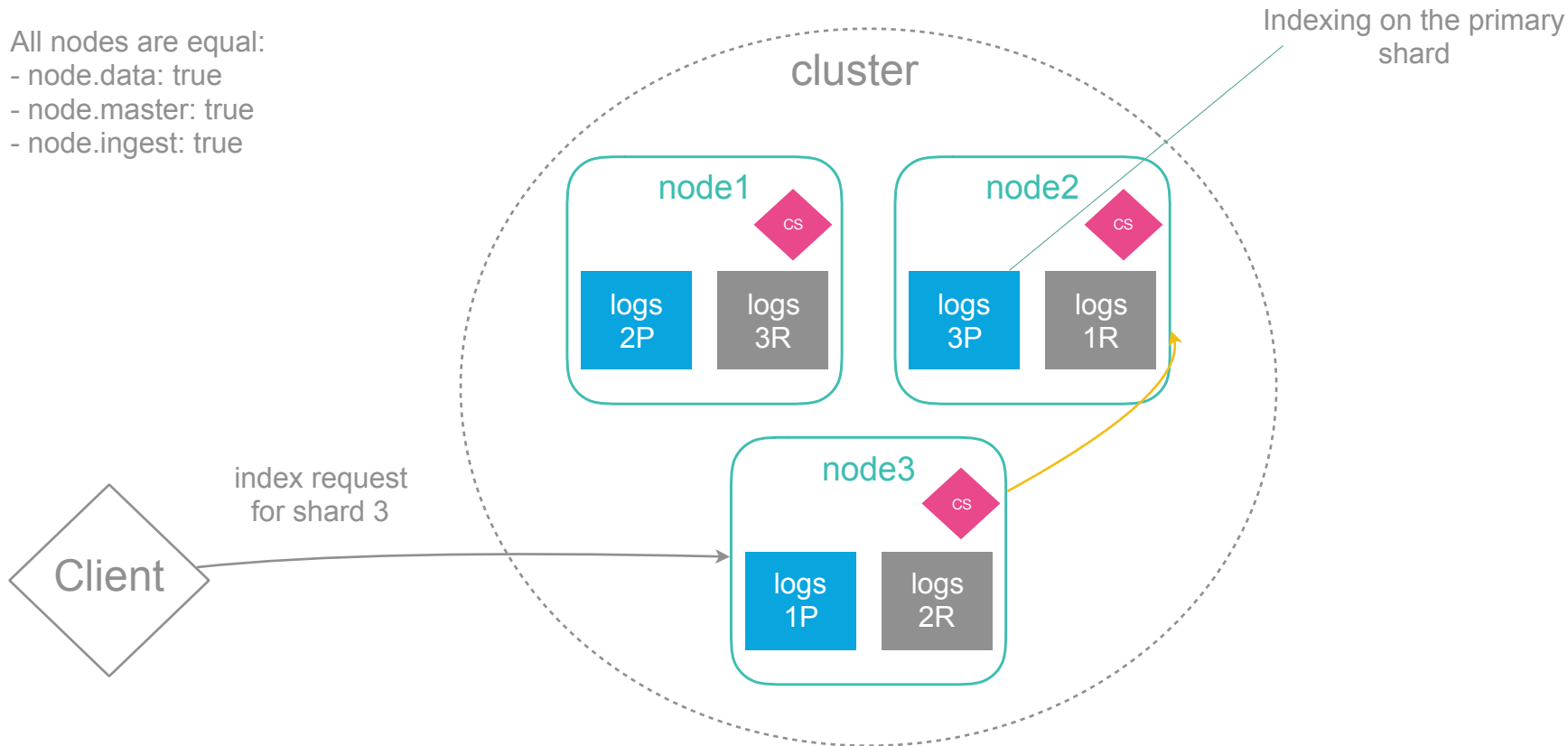
- node.data: true
- node.master: true
- node.ingest: true



Default scenario

All nodes are equal:

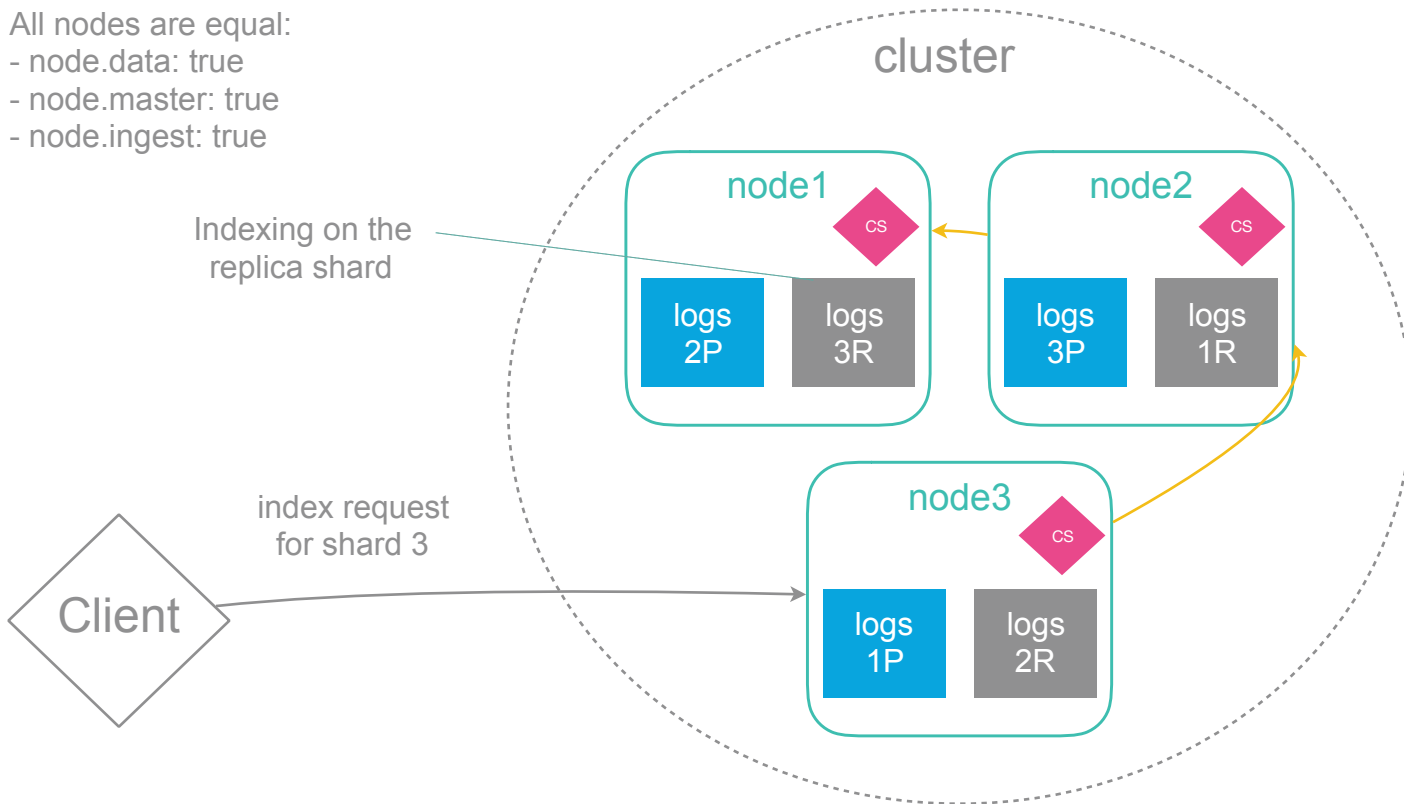
- node.data: true
- node.master: true
- node.ingest: true



Default scenario

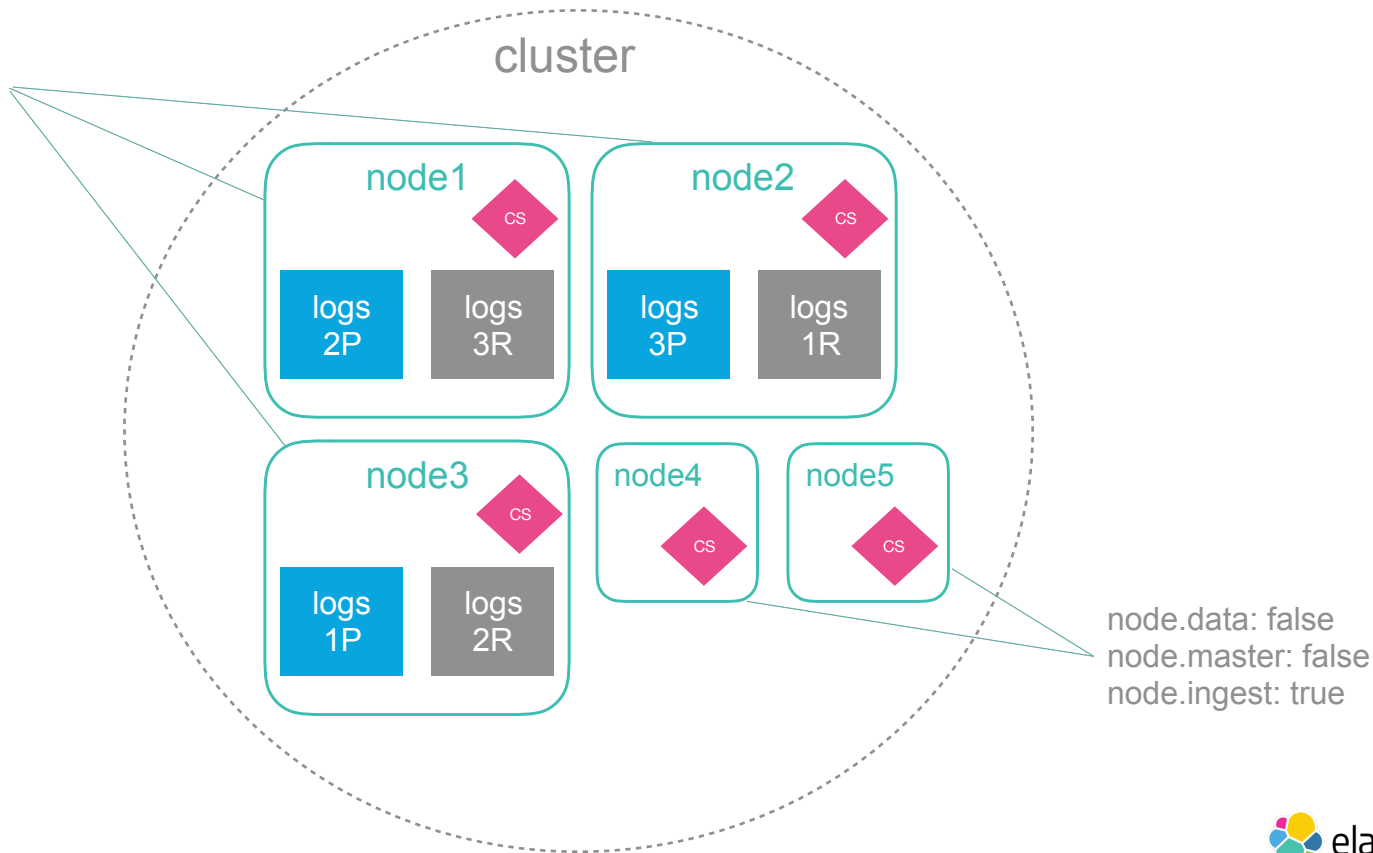
All nodes are equal:

- node.data: true
- node.master: true
- node.ingest: true

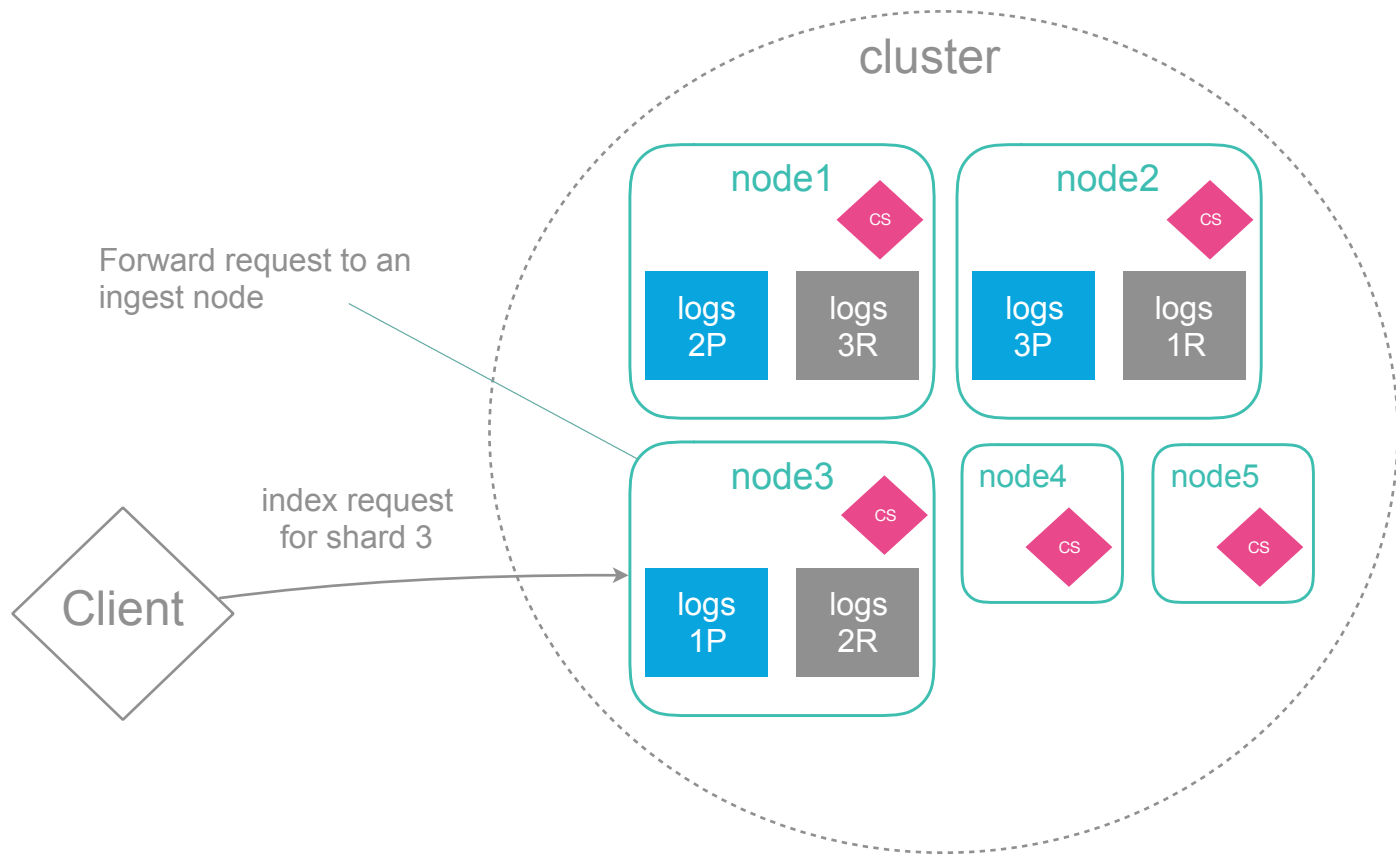


Ingest dedicated nodes

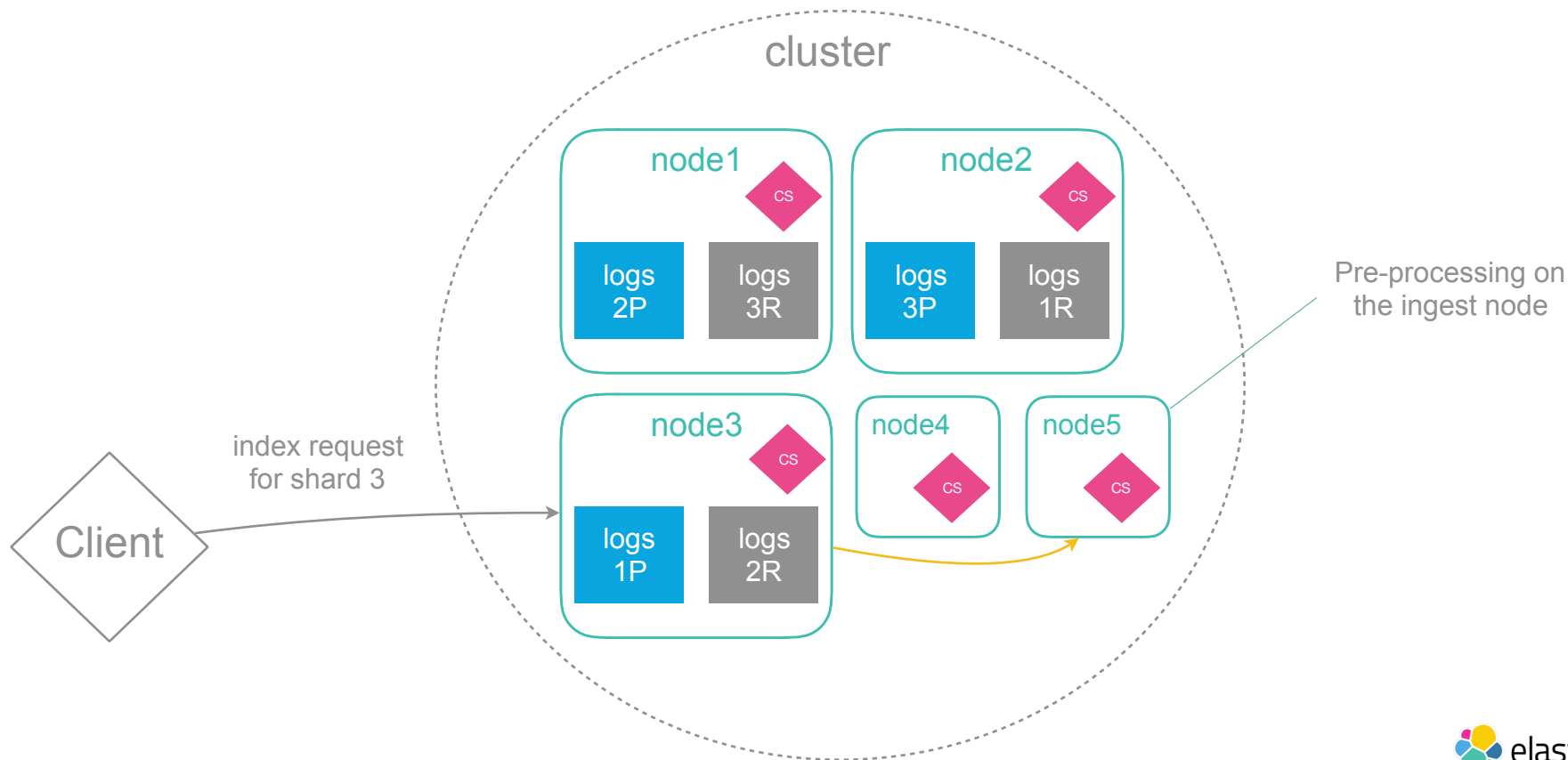
node.data: true
node.master: true
node.ingest: false



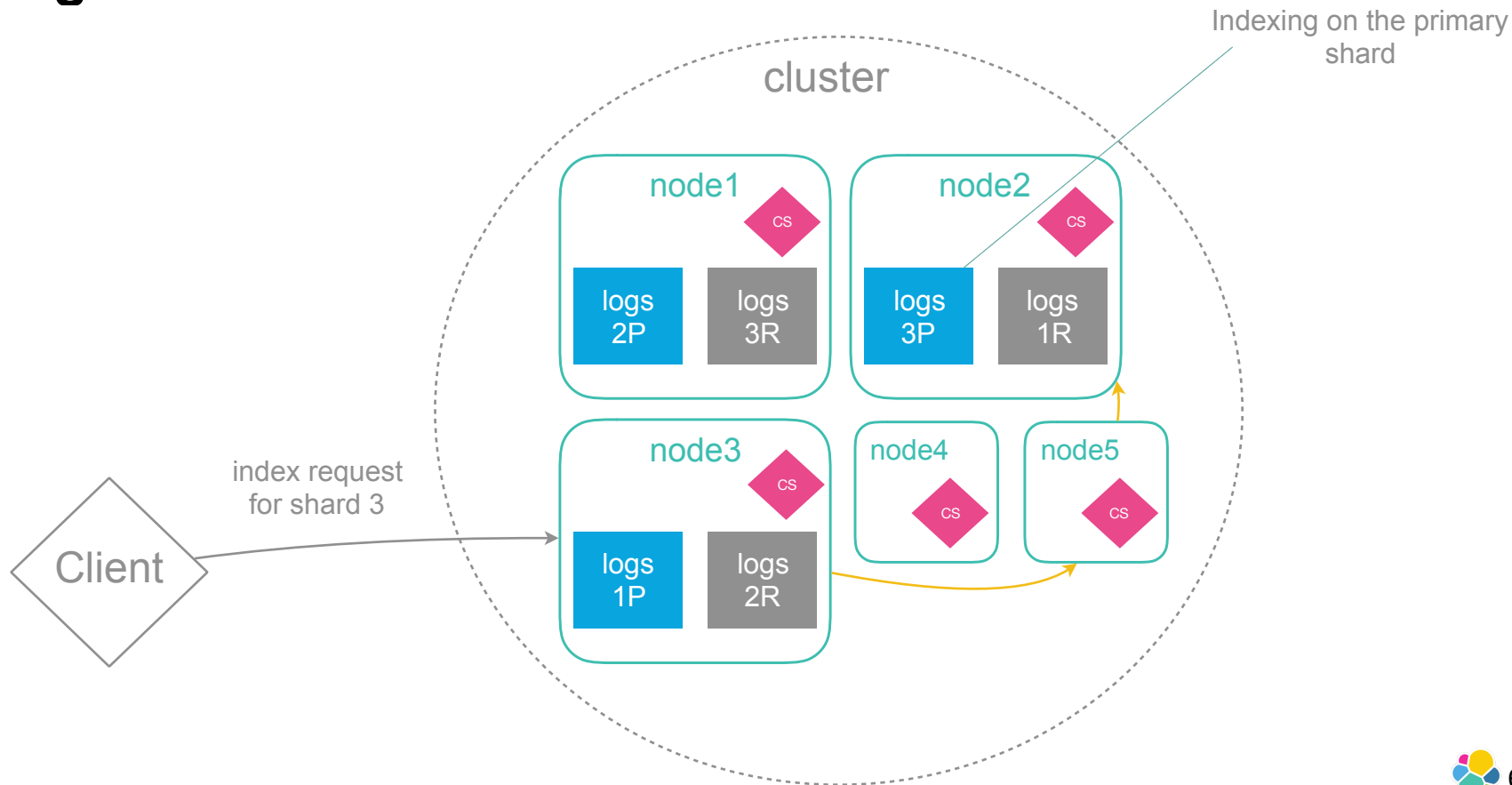
Ingest dedicated nodes



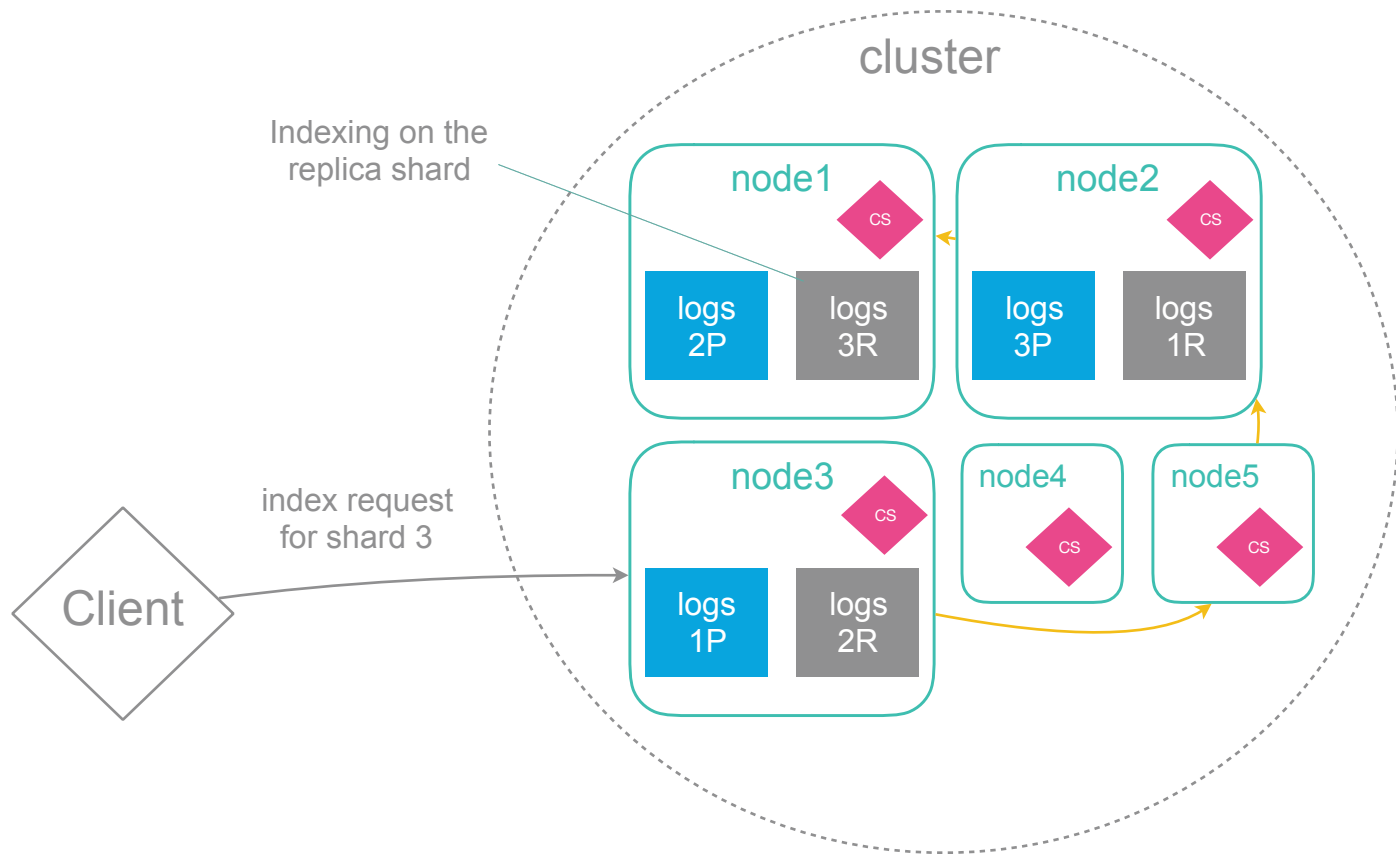
Ingest dedicated nodes



Ingest dedicated nodes



Ingest dedicated nodes





bano-ingest plugin

From postal address to geo_point
From geo_point to postal address

What is BANO?

- French Open Data base for postal addresses
- <http://openstreetmap.fr/bano>
- <http://bano.openstreetmap.fr/data/>

per department

all addresses

 bano-95-shp.zip	23-May-2016 06:48	8.6M
 bano-95.csv	23-May-2016 06:47	16M
 bano-95.json.gz	23-May-2016 07:31	2.3M
 bano-95.ttl.gz	23-May-2016 06:47	7.1M
 bano-971-shp.zip	23-May-2016 06:46	1.9M
 bano-971.csv	23-May-2016 06:46	3.7M
 bano-971.json.gz	23-May-2016 07:29	525K
 bano-971.ttl.gz	23-May-2016 06:46	1.6M
 bano-972-shp.zip	23-May-2016 06:46	1.6M
 bano-972.csv	23-May-2016 06:46	3.3M
 bano-972.json.gz	23-May-2016 07:30	473K
 bano-972.ttl.gz	23-May-2016 06:46	1.4M
 bano-973-shp.zip	23-May-2016 06:46	630K
 bano-973.csv	23-May-2016 06:46	1.1M
 bano-973.json.gz	23-May-2016 07:29	189K
 bano-973.ttl.gz	23-May-2016 06:46	521K
 bano-974-shp.zip	23-May-2016 06:49	8.7M
 bano-974.csv	23-May-2016 06:48	17M
 bano-974.json.gz	23-May-2016 07:31	2.2M
 bano-974.ttl.gz	23-May-2016 06:49	7.3M
 bano-976-shp.zip	23-May-2016 06:46	241K
 bano-976.csv	23-May-2016 06:46	441K
 bano-976.json.gz	23-May-2016 07:29	78K
 bano-976.ttl.gz	23-May-2016 06:46	202K
 code_cadastre.csv	23-May-2016 00:05	1.3M
 full.csv.gz	23-May-2016 06:50	198M
 full.sjson.gz	23-May-2016 07:34	249M

BANO Format

- bano-976.csv sample (full.csv.gz has same format)

```
976030950H-26,26,RUE DISMA,97660,Bandréle,CAD,-12.891701,45.202652
976030950H-28,28,RUE DISMA,97660,Bandréle,CAD,-12.891900,45.202700
976030950H-30,30,RUE DISMA,97660,Bandréle,CAD,-12.891781,45.202535
976030950H-32,32,RUE DISMA,97660,Bandréle,CAD,-12.892005,45.202564
976030950H-3,3,RUE DISMA,97660,Bandréle,CAD,-12.892444,45.202135
976030950H-34,34,RUE DISMA,97660,Bandréle,CAD,-12.892068,45.202450
976030950H-4,4,RUE DISMA,97660,Bandréle,CAD,-12.892446,45.202367
976030950H-5,5,RUE DISMA,97660,Bandréle,CAD,-12.892461,45.202248
976030950H-6,6,RUE DISMA,97660,Bandréle,CAD,-12.892383,45.202456
976030950H-8,8,RUE DISMA,97660,Bandréle,CAD,-12.892300,45.202555
976030950H-9,9,RUE DISMA,97660,Bandréle,CAD,-12.892355,45.202387
976030951J-103,103,RTE NATIONALE 3,97660,Bandréle,CAD,-12.893639,45.201696
  \_ ID                \_ Street Name      \_ Source \_ Geo point
          |                |                |
          \_ Street Number \_ Zipcode      \_ City Name
```

Features

- Download, transform and index BANO datasource

```
curl -XPUT 127.0.0.1:9200/_bano/17
curl -XPUT 127.0.0.1:9200/_bano/17,95,29
curl -XPUT 127.0.0.1:9200/_bano/_full
```

- Create a new ingest processor

```
curl -XPUT "localhost:9200/_ingest/pipeline/bano-test?pretty" -d '{
  "description": "my_pipeline",
  "processors": [ {
    "bano": {}
  } ]
}'
```

From structured address (french format)...

```
curl -XPOST "localhost:9200/_ingest/pipeline/bano-test/_simulate?pretty" -d '{
  "docs": [ {
    "_index": "index",
    "_type": "type",
    "_id": "id",
    "_source": {
      "address": {
        "number": "25",
        "street_name": "georges",
        "zipcode": "17440",
        "city": "Aytré"
      }
    }
  } ]
}'
```

From a geo point...

```
curl -XPOST "localhost:9200/_ingest/pipeline/bano-test/_simulate?pretty" -d '{
  "docs": [ {
    "_index": "index",
    "_type": "type",
    "_id": "id",
    "_source": {
      "location": {
        "lat": 46.135283,
        "lon": -1.113750
      }
    }
  } ]
}'
```

Combine with other ingest processors

```
curl -XPUT "localhost:9200/_ingest/pipeline/bano-test-4?pretty" -d '{
  "description": "debug",
  "processors": [ {
    "geoip" : {
      "field" : "ip"
    }
  }, {
    "bano": {
      "location_lat_field": "geoip.location.lat",
      "location_lon_field": "geoip.location.lon"
    }
  } ]
}'
```

From an IP address...

```
curl -XPOST "localhost:9200/_ingest/pipeline/bano-test-4/_simulate?pretty&verbose" -d '{
  "docs": [ {
    "_index": "index",
    "_type": "type",
    "_id": "id",
    "_source": {
      "ip" : "82.229.80.187"
    }
  } ]
}'
```



Demo time!



Writing an ingest plugin

Writing the processor

```
public final class BanoProcessor extends AbstractProcessor {
    private final String cityField;
    public BanoProcessor(String cityField) { this.cityField = cityField; }

    @Override
    public void execute(IngestDocument ingestDocument) {

        // Implement your logic code here
        if (ingestDocument.hasField(cityField)) {
            String city = ingestDocument.getFieldValue(cityField, String.class)

            // Like searching in elasticsearch with a city field
            Location location = banoEsClient.searchByCity(city);

            // Then modify the document as you wish
            Map<String, Object> locationObject = new HashMap<>();
            locationObject.put("lat", location.getLat());
            locationObject.put("lon", location.getLon());
            ingestDocument.setFieldValue("location", locationObject);
        }
    }
}
```

Searching closest point

```
public String banoSearch(double lat, double lon) throws IOException {
    XContentBuilder query = jsonBuilder().startObject();
    query.startArray("sort");
    query.startObject();
    query.startObject("_geo_distance");
    query.startObject("location");
    query.field("lat", lat);
    query.field("lon", lon);
    query.endObject();
    query.field("mode", "avg");
    query.endObject();
    query.endObject();
    query.endArray();
    query.endObject();

    return getClient().search(banoIndexName, banoTypeName, query.string());
}
```

Writing the processor factory

```
public static final class Factory implements Processor.Factory {
    @Override
    public Processor create(Map<String, Processor.Factory> map, String processorTag,
                           Map<String, Object> config) throws Exception {
        // Read the bano processor config
        String cityField = readStringProperty("bano", processorTag, config,
            "city_field", // We read here the value of "city_field" in config
            "address.city"); // If not set we will read from "address.city" by default

        // Do the same for other fields

        // Create the processor instance
        return new BanoProcessor(cityField, otherFields...);
    }
}
```

Writing an ingest plugin

```
public class IngestBanoPlugin extends Plugin implements IngestPlugin {  
    @Override  
    public Map<String, Processor.Factory> getProcessors(Processor.Parameters parameters) {  
        return Collections.singletonMap("bano", new BanoProcessor.Factory());  
    }  
}
```



Go get Elasticsearch 5.1.1!

<https://www.elastic.co/downloads/elasticsearch>

-Xmx128gb -Xms128gb

adding more memory to my brain!

Blog Archives

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Creating an Ingest Plugin for Elasticsearch (Updated for GA)

NOTE: This article is an updated version of [Creating an Ingest plugin for elasticsearch](#)

This blog post is part of a series which will teach you:

- [How to write a plugin for elasticsearch 5.0 using Maven.](#)
- How to write an ingest plugin for elasticsearch 5.0 (what you are reading now).
- How I wrote the `ingest-bano` plugin which will be hopefully released soonish.

Today, we will focus on writing an Ingest plugin for elasticsearch.

Hey! Wait! You wrote `Ingest` ? What is that?

Ingest is a new feature coming in elasticsearch 5.0. It helps you to transform your data on the fly while injecting it into elasticsearch. Read more in [elastic blog post](#).

If you know me and my work before I joined elastic, I have always been in love with data crawling and transformation as I wrote myself some plugins called [rivers](#).

About Me

Developer | Evangelist at [elastic](#) and creator of the Elastic French Speakers [User Group](#). Frequent speaker about all things Elastic, in conferences, for User Groups and in companies with [BBL talks](#). In my free time, I enjoy coding and DJ four times per year, just for fun. Living with my family in Cergy, France.

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David Pilato
Developer | Evangelist
@dadoonet

Bano ingest plugin

Watch this space: <https://github.com/dadoonet>
And follow me on Twitter!

