

# Elastic Search + Drupal

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# What is Elasticsearch?

- Open source search server project
- Scalable
- Distributed nature
- Real-time abilities
- Speaks JSON
- REST
- Perfect document database

# What can you do with it?

- Full text search
- Searching thousands of millions records for a specific phrase
- Got millions of results? Break them down with facets or aggregations
- Need auto-completing while searching? Use facets or aggregations
- Analytical queries in addition to text searching
- And, many many more features...

Of course, with a great performance

Search  for documents where:

Search Output Results:  Number of Results:  ☐ Show query source

Searched 5 of 5 shards. 1896031 hits. 0.026 seconds

# Installing

<http://www.elasticsearch.org/overview/elkdownloads/>

1



**Download and unzip the latest Elasticsearch distribution**

2



**Run *bin/elasticsearch* on Unix,  
or *bin/elasticsearch.bat* on Windows**  
**bin/elasticsearch -f**

3



**Run *curl -X GET http://localhost:9200/***



Sense (Beta) 0.9.0

A JSON aware developer console to Elasticsearch.

Server

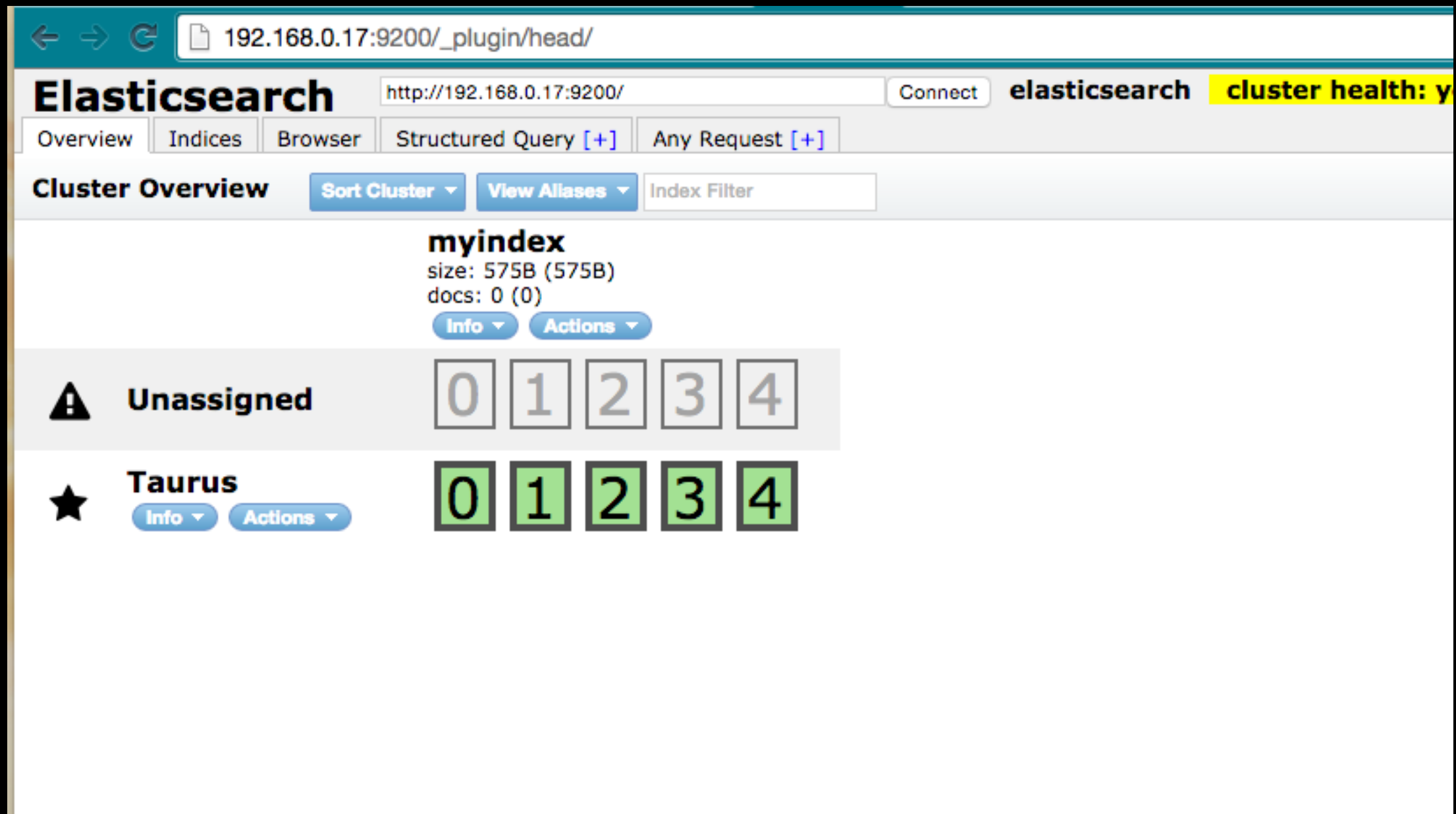
http://192.168.0.17:9200/

```
1 GET _search
2 {
3   "query": {
4     "match_all": {}
5   }
6 }
```

```
1 {
2   "took": 1,
3   "timed_out": false,
4   "_shards": {
5     "total": 0,
6     "successful": 0,
7     "failed": 0
8   },
9   "hits": {
10    "total": 0,
11    "max_score": 0,
12    "hits": []
13  }
14 }
```

Need a UI?

**\$ ./plugin -install mobz/elasticsearch-head**



Beware: Elasticsearch does not provide any kind of access control by itself.

# Drupal side

## Elasticsearch Connector

[View](#)[Version control](#)

Posted by [skek](#) on *December 18, 2013 at 12:27pm*

Elasticsearch Connector is a set of modules designed to build a full Elasticsearch eco system in Drupal.

It is using the official [Elasticsearch PHP library](#). You can also view the [github repo](#).

One of the biggest companies are using Elasticsearch for big data – [check this out](#).

The ambitions of this module is to help Drupal handle big data at any kind and make it scalable.

You can find more about Elasticsearch here – <http://www.elasticsearch.org>



▼ ELASTICSEARCH

ENABLED	NAME	VERSION	DESCRIPTION
<input checked="" type="checkbox"/>	Elasticsearch Connector	7.x-1.0-alpha2	<p>Abstraction of making connection to the elasticsearch server. This module is API for a whole bunch of functionality connected with this module.</p> <p>Requires: Chaos tools (<a href="#">enabled</a>)</p> <p>Required by: Elasticsearch Connector Devel (<a href="#">disabled</a>), Elasticsearch Connector Search API (<a href="#">disabled</a>), Elasticsearch Connector Sequence (<a href="#">disabled</a>), Elasticsearch Connector Statistics (<a href="#">disabled</a>), Elasticsearch Connector Views (NOT STABLE) (<a href="#">disabled</a>), Elasticsearch Watchdog (<a href="#">disabled</a>)</p>
<input type="checkbox"/>	Elasticsearch Connector Devel	7.x-1.0-alpha2	<p>The module provide debugging information for the developers.</p> <p>Requires: Elasticsearch Connector (<a href="#">enabled</a>), Chaos tools (<a href="#">enabled</a>), Devel (<a href="#">disabled</a>)</p>
<input type="checkbox"/>	Elasticsearch Connector Easy Install	7.x-1.0-alpha2	<p>If you are not familiar with composer and don't know how to install libraries but you just want to click and install everything required the module is just for you. It contains all required by elasticsearch connector module libraries.</p>
<input type="checkbox"/>	Elasticsearch Connector Search API	7.x-1.0-alpha2	<p>The module will integrate Elasticsearch Connector module with Search API.</p> <p>Requires: Elasticsearch Connector (<a href="#">enabled</a>), Chaos tools (<a href="#">enabled</a>), Search API (<a href="#">enabled</a>), Entity API (<a href="#">enabled</a>)</p>
<input type="checkbox"/>	Elasticsearch Connector Sequence	7.x-1.0-alpha2	<p>Use Elasticsearch to generate sequences. Similar to MySQL auto increment functionality.</p> <p>Requires: Elasticsearch Connector (<a href="#">enabled</a>), Chaos tools (<a href="#">enabled</a>)</p>
<input type="checkbox"/>	Elasticsearch Connector Views (NOT STABLE)	7.x-1.0-alpha2	<p>Not Stable yet. Use only for development purposes or if you know what you are doing! The module will integrate Elasticsearch Connector module with Views. This modules will allow you to select any index and any document type from selected cluster.</p> <p>Requires: Elasticsearch Connector (<a href="#">enabled</a>), Chaos tools (<a href="#">enabled</a>), Views (<a href="#">enabled</a>)</p>
<input type="checkbox"/>	Elasticsearch Watchdog	7.x-1.0-alpha2	<p>Use Elasticsearch to store the Drupal logs.</p> <p>Requires: Elasticsearch Connector (<a href="#">enabled</a>), Chaos tools (<a href="#">enabled</a>)</p>



# What we are doing

**taxnotes**

Powered by



# Elasticsearch Key Points

- Figure out what to index
- Mapping
- When to index
- You should have an alias

**Elastica**

A PHP client for elasticsearch.

```
,
    "taxtype": {
        "type": "string",
        "store": true
    },
    "title": {
        "type": "string"
    },
    "tollfreenumber": {
        "type": "string",
        "store": true
    },
    },
```

# Drupal Key Points

- Elasticsearch Connector
- Not using views
  - Complex custom rules of visualization
  - Avoiding a layer of complexity and write effective queries
- Do I need a backup plan?
  - Mysql + ES

# A simple example

Overview

Indices

Browser

Structured Query [+]

Any Request [+]

History

Query

\_search

POST

```
{
  "query": {
    "bool": {
      "must": [
        {
          "term": {
            "nodeindex.title": "tax"
          }
        }
      ],
      "must_not": [],
      "should": []
    }
  },
  "from": 0,
  "size": 10,
  "sort": [],
  "facets": {}
}
```

Validate JSON

☒ Pretty

Request

Result Transformer

Repeat Request

Display Options

```
{
  took: 6,
  timed_out: false,
  _shards: {
    total: 10,
    successful: 10,
    failed: 0
  },
  hits: {
    total: 56525,
    max_score: 3.1914146,
    hits: [
      {
        _index: "tt",
        _type: "tta",
        _id: "6222496",
        _score: 3.1914146,
        _source: {
          drupalnodetitle: "TAX FOUNDATION",
          created: "1419813602",
          fulltext: "===== protectionist tax legislation and t ===== VOL. 34 UPSWING With federal deficits h are often targeted because they a have a life of its own and always heavy tax burden and provide a l CORPORATE TAX HISTORY In 19 (ERTA). If it had been allowed to 1980s. Instead, there were major and the Deficit Reduction Act (DE 1981 was purely and simply to in relief of 1981 and effectively piled in corporate income taxes have
```

## Edit cluster

### Cluster name \*

Machine name: es\_cluster

Example: ElasticaCluster

### Server URL \*

Enter the URL of a node in the cluster. All nodes will be automatically discover. Example: http://localhost:9200

CLUSTER NAME	STATUS	NUMBER OF NODES
elasticsearch	green	4

☒ Make this cluster default connection

If no specific cluster connection specified the API will use the default connection.

☒ Use multiple nodes connection

It will automatically discover all nodes and use them in the connection to the cluster. The Elasticsearch client can then randomise the query execution between nodes.

### Status \*

☒ Active

☐ Inactive

Save

```

<?php
function query_example_conector(){
    $json = '{
        "query": {
            "bool": {
                "must": [
                    {
                        "term": {
                            "nodeindex.title": "tax"
                        }
                    }
                ],
                "must_not": [],
                "should": []
            }
        },
        "from": 0,
        "size": 10,
        "sort": [],
        "facets": {}
    }';
    try {
        $parm = array();
        $parm['hosts'] = array('http://192.168.0.17:9200');
        $client = new Elasticsearch\Client($parm);
        $params['type'] = 'nodeindex';
        $params['index'] = 'myindex';
        $params['body'] = $json;
        $result = $client->search($params);
        dsm($result);
    } catch (Exception $e) {
        watchdog("ES ", $e);
        return;
    }
}

```

...

(Array, 4 elements)

**took**

(Integer) 5

**timed\_out**

(Boolean) FALSE

**\_shards**

(Array, 3 elements)

**hits**

(Array, 3 elements)

**total**

(Integer) 56525

**max\_score**

(Float) 3.1914146

**hits**

(Array, 10 elements)

**0**

(Array, 5 elements)

**\_index**

(String, 13 characters ) myindex

**\_type**

(String, 9 characters ) nodeindex

**\_id**

(String, 7 characters ) 6222496

**\_score**

(Float) 3.1914146

**\_source**

(Array, 35 elements)

**drupalnodetitle**

(String, 74 characters ) TAX FOUNDATION WARNS AGAINST PROTECTIONISM AND ...

Kevin Brown and Daniel Barron([da.bherr@gmail.com](mailto:da.bherr@gmail.com))  
are the lead developers of the main Taxnotes search

Next step: To create a sandbox project which  
implements this kind of search and its features.



Questions?