Setting up ElasticSearch with MongoDB

Created by **Gary Beason**, last modified by **Michele Marques** on **Jul 30, 2015**

Elasticsearch is a flexible and powerful open source, distributed, real-time search and analytics engine. If you do not install Elasticsearch, BMC MyIT uses the built-in search of MongoDB.

Important
For information about setting up a secure MongoDB installation, see Configuring MongoDB for BMC MyIT and Smart IT.

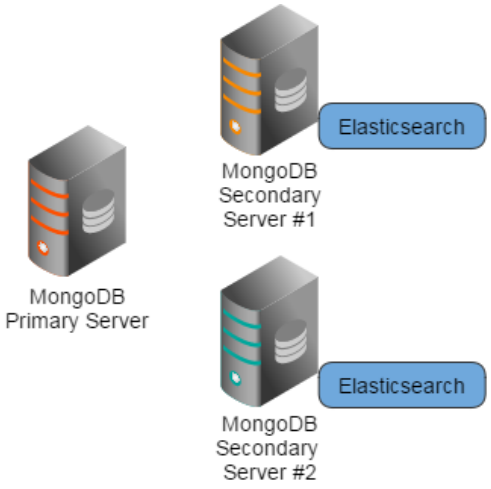
Use the following procedures to install and configure MongoDB as a datasource to store data in Elasticsearch.

Note
The MongoDB installed with BMC MyIT does not support Elasticsearch. You must download and install MongoDB before installing BMC MyIT. For supported versions, see System requirements.

- Elasticsearch installation in high availability environments
- Before you begin
- To set up ElasticSearch (2.1.00 or later)
- To install ElasticSearch on a standalone server (2.0.01 and earlier)
- Where to go from here
- Related topics

Elasticsearch installation in high availability environments

For high availability, the Elasticsearch plugin is installed on the secondary servers.



Before you begin

Before starting this procedure, complete the following tasks:

- Verify that the JAVA_HOME environment variable is set.
- Install MongoDB.
- For high availability, configure replica sets.

To set up ElasticSearch (2.1.00 or later)

1. Install Elasticsearch on the MongoDB server. For a replica set, install on the first secondary MongoDB server.
   a. Download and unzip Elasticsearch version 0.90.10 from http://www.elasticsearch.org/download/ or http://www.elasticsearch.org/downloads/0-90-10/.

   > ⚠ BMC has tested and verified this version of Elasticsearch. Later versions are not verified.

   b. Install the service with the following command: `bin/elasticsearch` on Unix or `bin/elasticsearch.bat` on Windows.
   c. Install the MongoDB River Plugin for ElasticSearch with the following command:
   `bin\plugin --install com.github.richardwilly98.elasticsearch/elasticsearch-river-mongodb/2.0.0`
   d. Start the Elasticsearch service with the `net start Elasticsearch` command.
2. For high availability, configure the master server.
   a. Edit the **elasticsearch\config\elasticsearch.yml** file.
   b. In the Node section, add or update the following parameters:
   cluster.name: "MyITSocial"

   node.name: "nodeA"
   node.master: true
   node.data: true
   discovery.zen.ping.multicast.enabled: false
   discovery.zen.ping.unicast.hosts: ["*SecondaryMongodbTwoIPaddress*"]

   Example of node parameters on the first server

   ```
   ##################################### Node #####################################
   # Node names are generated dynamically on startup, so you're relieved
   # from configuring them manually. You can tie this node to a specific name:
   #
   # node.name: "Franz Kafka"

   cluster.name: "MyITSocial"
   node.name: "nodeA"
   node.master: true
   node.data: true
   discovery.zen.ping.multicast.enabled: false
   discovery.zen.ping.unicast.hosts: ["128.72.145.212"]
   ```

   c. In the Network And HTTP section, add or update the following parameters with the IP address of the secondary MongoDB server:
   network.bind_host: "*SecondaryMongodbOneIPaddress*"
   network.publish_host: "*SecondaryMongodbOneIPaddress*"
   network.host: "*SecondaryMongodbOneIPaddress*"

   Example of Network and HTTP parameters on the first server

   ```
   ################################## Network And HTTP ##################################
   # ElasticSearch, by default, binds itself to the 0.0.0.0 address, and listens
   # on port [9200-9300] for HTTP traffic and on port [9300-9400] for node-to-node
   # communication. (the range means that if the port is busy, it will automatically
   # try the next port).
   network.bind_host: 128.72.145.211
   network.publish_host: 128.72.145.211
   network.host: 128.72.145.211
   ```

   d. Save the changes.
3. For high availability, configure the second secondary Elasticsearch server.
   a. Copy elasticsearch folder from the first MongoDB secondary server to the second one.
   b. Install the service with the following command:
   `elasticsearch\bin\service.bat install Elasticsearch`
   c. Edit the **elasticsearch\config\elasticsearch.yml** file.
   d. In the Node section, add or update the following parameters:
   cluster.name: "MyITSocial"

   node.name: "nodeB"
   node.master: false
   node.data: true
   discovery.zen.ping.multicast.enabled: false
   discovery.zen.ping.unicast.hosts: ["*SecondaryMongodbTwoIPaddress*"]

Example of node parameters on the second server

```
################################### Node #####################################
# Node names are generated dynamically on startup, so you're relieved
# from configuring them manually. You can tie this node to a specific name:
#
# node.name: "Franz Kafka"

cluster.name: "MyITSocial"
node.name: "nodeB"
node.master: false
node.data: true
discovery.zen.ping.multicast.enabled: false
discovery.zen.ping.unicast.hosts: ["128.72.145.212"]
```

e. In the Network And HTTP section, add or update the following parameters with the IP address of the secondary MongoDB server:
network.bind_host: "*SecondaryMongodbTwoIPaddress*"
network.publish_host: "*SecondaryMongodbTwoIPaddress*"
network.host: "*SecondaryMongodbTwoIPaddress*"

Example of Network and HTTP parameters on the second server

```
################################## Network And HTTP ##########################
# ElasticSearch, by default, binds itself to the 0.0.0.0 address, and listens
# on port [9200-9300] for HTTP traffic and on port [9300-9400] for node-to-node
# communication. (the range means that if the port is busy, it will automatically
# try the next port).
network.bind_host: 128.72.145.212
network.publish_host: 128.72.145.212
network.host: 128.72.145.212
```

f. In the Discovery section, add or update the following parameters.
discovery.zen.minimum_master_nodes: 1
discovery.zen.ping.unicast.hosts: ["*SecondaryMongodbOneIPaddress*"]

Example of Discovery parameters on the second server

```
################################### Discovery ################################
# Discovery infrastructure ensures nodes can be found within a cluster
# and master node is elected. Multicast discovery is the default.
# Set to ensure a node sees N other master eligible nodes to be considered
# operational within the cluster. Its recommended to set it to a higher value
# than 1 when running more than 2 nodes in the cluster.
#
# discovery.zen.minimum_master_nodes: 1

discovery.zen.minimum_master_nodes: 1
discovery.zen.ping.unicast.hosts: ["128.72.145.211"]
```

g. Save the changes.

4. Start the Elasticsearch service on both secondary servers with the `net start Elasticsearch` command.
5. After installing BMC MyIT, on the MyIT server, edit the **config.js** file in ***InstallationDirectory*\Smart_IT_MyIT\Smart_IT_MyIT\social**.
6. Add the following three lines, and save.
   search_type:1
   search_hosts:["*elasticSearchServerIPaddress*"]
   search_host_port:"*elasticsearchPort*"

   For high availability environments, the search_hosts parameter should include all the Elasticsearch servers:
   search_hosts:["*elasticSearchServerOneIPaddress*", "*elasticSearchServerTwoIPaddress*"]

   The Elasticsearch port is typically 9200.
7. Restart the social service.
   Windows: MyITSocialService
   Linux: socialserviced

To install ElasticSearch on a standalone server (2.0.01 and earlier)

1. Install Elasticsearch on the MongoDB server. For a replica set, install on a secondary MongoDB server.
   a. Download and unzip Elasticsearch version 0.90.10 from http://www.elasticsearch.org/download/.

> ⚠ BMC has tested and verified this version of Elasticsearch. Later versions are not verified.

b. Run `bin/elasticsearch` on Unix or `bin/elasticsearch.bat` on Windows.

c. Run `curl -X GET http://localhost:9200/`
For Windows, you can use GitBash for `curl` support. For example, see http://msysgit.github.io/.

2. Install the MongoDB River Plugin for ElasticSearch with the following command:
`bin\plugin --install com.github.richardwilly98.elasticsearch/elasticsearch-river-mongodb/2.0.0`
3. Configure MongoDB replication set.
   - For more information, see Setting up a MongoDB cluster with replica set.
   - To convert a MongoDB standalone to replication which the River plugin requires, see the Convert a Standalone to a Replica Set tutorial in the MongoDB documentation.
4. To configure the River plugin, use the `curl` command to add the three indexes for activities, users, and resources.

```
curl -XPUT "http://172.19.76.229:9200/_river/social/_meta" -d '
{
    "type": "mongodb",
    "mongodb": {
        "servers": [
            { "host": "172.19.77.28", "port": 27017 },
            { "host": "172.19.77.30", "port": 27017 },
            { "host": "172.19.76.228", "port": 27017 }
        ],
    "options": { "secondary_read_preference": true },
    "db": "social",
    "collection": "activities"
    },
    "index": {
        "name": "social",
        "type": "activities"
    }
}'


curl -XPUT "http://172.19.76.229:9200/_river/usersearch/_meta" -d '
{
    "type": "mongodb",
    "mongodb": {
        "servers": [
            { "host": "172.19.77.28", "port": 27017 },
            { "host": "172.19.77.30", "port": 27017 },
            { "host": "172.19.76.228", "port": 27017 }
        ],
    "options": { "secondary_read_preference": true },
    "db": "social",
    "collection": "users"
    },
    "index": {
        "name": "usersearch",
        "type": "users"
    }
}'

curl -XPUT "http://172.19.76.229:9200/_river/resourcesearch/_meta" -d '
{
    "type": "mongodb",
    "mongodb": {
        "servers": [
            { "host": "172.19.77.28", "port": 27017 },
            { "host": "172.19.77.30", "port": 27017 },
            { "host": "172.19.76.228", "port": 27017 }
        ],
    "options": { "secondary_read_preference": true },
    "db": "social",
    "collection": "resources"
    },
    "index": {
```

```
        "name": "resourcesearch",
        "type": "resources"
    }
}'
```

Where to go from here

Information about what tasks to perform next. If the current task is part of a larger process, this section *must* provide navigation to the next possible task or tasks, or it must state that this is the last task in the process.

Related topics

Setting up a MongoDB cluster with replica set

Setting up ElasticSearch with MongoDB (at coderwall.com)

MongoDB River Plugin for ElasticSearch (at github.com)

Doug Bagley (BMC Employee)

Elasticsearch is version 1.2.0 can we use that or does it have to be 1.0.1?

Doug Bagley (BMC Employee)

In fact I don't see a place on there web page to download older versions

Doug Bagley (BMC Employee)

Setting up elastic search on windows there is a /bin/service.bat that will create the service for ES, run "service.bat install".

Doug Bagley (BMC Employee)

What is the purpose of step 1.c? Will you add that the service or process must be running before trying curl command?

Sirjad Acharath parakkat (BMC Employee)

`curl -XPUT "http://172.19.76.229:9200/_river/userssearch/_meta" -d '`
The name is usersearch and not userssearch. Please update the above url

Gary Beason (BMC Employee)

This is fixed.

Luciano Muller nicoletti

Is ElasticSearch required or optional for uising all the MyIT features ?

What's the benefits to have ElasticSearch installed instead of the MongoDB installed from the MyIT installer ?

Thanks

Elasticsearch is a flexible and powerful open source, distributed, real-time search and analytics engine. If you do not install Elasticsearch, BMC MyIT uses the built-in search of MongoDB.

Use the following process to install and configure MongoDB as a datasource to store data in Elasticsearch.

Note

The MongoDB installed with BMC MyIT does not support Elasticsearch. You must download and install MongoDB before installing BMC MyIT. For supported versions, see System requirements for version 2.0.

Michele Marques (BMC Employee)

ElasticSearch is optional and is in addition to MongoDB. Installing and configuring ElasticSearch improves performance. If you do not install and configure ElasticSearch, the MongoDB search is used instead.