



Configuring the Liferay Elasticsearch Connector

For detailed Elasticsearch configuration information, refer to the [Elasticsearch documentation](#).

The name of your Elasticsearch cluster is important. When you're running Elasticsearch in remote mode, the cluster name is used by Liferay DXP to recognize the Elasticsearch cluster. To learn about setting the Elasticsearch cluster name on the Liferay DXP side, refer below to the section called Configuring the Liferay Elasticsearch Connector.

Note: The `http.enabled` setting in Elasticsearch corresponds to the `httpEnabled` setting in the Liferay Connector to Elasticsearch 6 application. As this setting was [deprecated in Elasticsearch 6.3](#), the connector's corresponding setting is now also deprecated. This setting was only used for configuring the embedded Elasticsearch server, so its deprecation should have minimal impact to production deployments.

Elasticsearch's configuration files are written in [YAML](#) and kept in the `[Elasticsearch Home]/config` folder. The main configuration file is `elasticsearch.yml`, used for configuring Elasticsearch modules.

To set the name of the Elasticsearch cluster, open `[Elasticsearch Home]/config/elasticsearch.yml` and specify

```
cluster.name: LiferayElasticsearchCluster
```

Since `LiferayElasticsearchCluster` is the default name given to the cluster, this would work just fine. Of course, you can name your cluster whatever you want (we humbly submit the recommendation `clustery_mcclusterface`).¹ You can configure your node name using the same syntax (setting the `node.name` property).

If you'd rather work from the command line than in the configuration file, navigate to Elasticsearch Home and enter

```
./bin/elasticsearch --cluster.name clustery_mcclusterface --node.name nody_mcnodface
```

Feel free to change the node name or the cluster name. Once you configure Elasticsearch to your liking, start it up.

Starting Elasticsearch

Start Elasticsearch by navigating to Elasticsearch Home and typing

```
./bin/elasticsearch
```

if you run Linux, or

```
\bin\elasticsearch.bat
```

if you run Windows.

To run as a daemon in the background, add the `-d` switch to either command:

```
./bin/elasticsearch -d
```

Once both Elasticsearch and Liferay DXP are installed and running, introduce them to each other.

Configuring the Liferay Elasticsearch Connector

The Elasticsearch connector provides integration between Elasticsearch and the portal. Before you configure the connector, make sure Elasticsearch is running.

There are two ways to configure the adapter:


1. [Use the System Settings application in the Control Panel.](#)
2. [Manually create an OSGi configuration file.](#)

It's convenient to configure the Elasticsearch adapter from System Settings, but this is often only possible during development and testing. If you're not familiar with System Settings, you can read about it [here](#). Remember that you can generate configuration files for deployment to other systems by configuring System Settings, and then exporting the `.config` file with your configuration.

CONFIGURING THE ADAPTER IN THE CONTROL PANEL

To configure the Elasticsearch adapter from the System Settings application,

1. Start Liferay DXP.
2. Navigate to *Control Panel* → *Configuration* → *System Settings* → *Foundation*.

3. Find the *Elasticsearch* entry (scroll down and browse to it or use the search box) and click the Actions icon (), then *Edit*.



elasticsearch			
1 Results for elasticsearch			Clear
Name	Category	Scope	
Elasticsearch 6	Platform > Search	System	

Figure 1: Use the System Settings application in Liferay DXP's Control Panel to configure the Elasticsearch adapter.

4. Make any edits to the configuration and click *Save*.

Elasticsearch 6



Cluster Name

LiferayElasticsearchCluster

The name of the cluster to join. The name should match the remote cluster when Operation Mode is set to remote.

Operation Mode

REMOTE

Choose an Option

EMBEDDED

REMOTE

liferay-

The prefix for the search index name. This value should not be changed under normal conditions. If you change this value, you must also reindex the portal and then manually delete the old index using the Elasticsearch administration console.

Number of Index Replicas

Figure 2: Set configurations for the Elasticsearch connector, like settings the Operation Mode to *Remote*.

Note: If you switch operation modes (`EMBEDDED` → `REMOTE`), you must trigger a re-index. Navigate to *Control Panel* → *Configuration* → *Search*, and click *Execute* next to *Reindex all search indexes*.

CONFIGURING THE ADAPTER WITH AN OSGI `.CONFIG` FILE

When preparing a system for production deployment, you want to use a repeatable deployment process. Therefore, it's best to use the OSGi configuration file, where your configuration is maintained in a controlled source.

Follow these steps to configure the Elasticsearch adapter using a configuration file:

1. Create the following file:

```
[Liferay_Home]/osgi/configs/com.liferay.portal.search.elasticsearch6.configuration.Ela
```

2. Add configurations to the file, in the format `propertyName="Value"`. For example,

```
operationMode="REMOTE"
# If running Elasticsearch from a different computer:
#transportAddresses="ip.of.elasticsearch.node:9300"
# Highly recommended for all non-prodcution usage (e.g., practice, tests, diagnostics)
#logExceptionsOnly="false"
```

3. Start Liferay DXP or re-index if already running.

As you can see from the System Settings entry for Elasticsearch, there are a lot more configuration options available that help you tune your system for optimal performance.

What follows here are some known good configurations for clustering Elasticsearch. These, however, can't replace the manual process of tuning, testing under load, and tuning again, so we encourage you to examine the

[Elasticsearch documentation](#) and go through that process once you have a working configuration.

Configuring a Remote Elasticsearch Host

In production systems Elasticsearch and Liferay DXP are installed on different servers. To make Liferay DXP aware of the Elasticsearch cluster, set

```
transportAddresses=[IP address of Elasticsearch Node]:9300
```

Here's an example that sets the IP address of two nodes in the Elasticsearch cluster:

```
transportAddresses=["192.168.1.1:9300","192.168.1.2:9300"]
```

Set this in the Elasticsearch connector's OSGi configuration file. List as many or as few Elasticsearch nodes in this property as you want. This tells Liferay DXP the IP address or host name where search requests should be sent. If using System Settings, set the value in the *Transport Addresses* property.

Note: In an Elasticsearch cluster you can list the transport addresses for multiple Elasticsearch nodes as a comma-separated list in the `transportAddresses` property. If you set only one transport address, Liferay DXP loses contact with Elasticsearch if that node goes down.

On the Elasticsearch side, set the `network.host` property in your `elasticsearch.yml` file. This property simultaneously sets both the *bind host* (the host where Elasticsearch listens for requests) and the *publish host* (the host name or IP address Elasticsearch uses to communicate with other nodes). See [here](#) for more information.

Clustering Elasticsearch in Remote Operation Mode

Clustering Elasticsearch is easy. First, set `node.max_local_storage_nodes` to be something greater than `1`. When you run the Elasticsearch start script, a new local storage node is added to the cluster. If you want four nodes running locally, for example, run `./bin/elasticsearch` four times. See [here](#) for more information.

Configure the number of shards and replicas in the Elasticsearch 6 adapter, using the `indexNumberOfShards` and `indexNumberOfReplicas` properties to specify the number of primary shards and number of replica shards, respectively. Elasticsearch's default configuration works for a cluster of up to ten nodes, since the default number of shards is `5` and the default number of replica shards is `1`.

Note: Elasticsearch uses the [Zen Discovery Module](#) by default, which provides unicast discovery. Additionally, nodes in the cluster communicate using the [Transport Module](#), through TCP. See the Elasticsearch documentation for the available properties (to be set in the `elasticsearch.yml` file), and the Liferay DXP Elasticsearch Adapter's settings for the adapter's available settings.

At a minimum, provide the list of hosts (as `host:port`) to act as gossip routers during unicast discovery in the `elasticsearch.yml`:

```
discovery.zen.ping.unicast.hosts: ["node1.ip.address", "node2.ip.address"]
```

For example,

```
discovery.zen.ping.unicast.hosts: ["10.10.10.5", "10.10.10.5:9305"]
```

For more information on configuring an Elasticsearch cluster, see the documentation on [Elasticsearch Index Settings](#).

Elasticsearch Connector System Settings, By Operation Mode

Some of the settings available for the Elasticsearch connector are applicable for only one operation mode (REMOTE or EMBEDDED). Refer to the table below:

Adapter Setting/Operation Mode	EMBEDDED	REMOTE
clusterName	X	X
operationMode	X	X
indexNamePrefix	X	X
indexNumberOfReplicas*	X	X
indexNumberOfShards*	X	X
bootstrapMlockAll	X	-
logExceptionsOnly	X	X
retryOnConflict	X	X
discoveryZenPingUnicastHostsPort	X	-
networkHost	X	-
networkBindHost	X	-
networkPublishHost	X	-
transportTcpPort	X	-
transportAddresses	-	X
clientTransportSniff	-	X
clientTransportIgnoreClusterName	-	X

Adapter Setting/Operation Mode	EMBEDDED	REMOTE
clientTransportPingTimeout*	-	X
clientTransportNodesSamplerInterval	-	X
httpEnabled	X	-
httpCORSEnabled	X	-
httpCORSAllowOrigin	X	-
httpCORSConfigurations	X	-
additionalConfigurations	X	X
additionalIndexConfigurations	X	X
additionalTypeMappings	X	X
overrideTypeMappings	X	X
syncSearch	X	-

* **Note:** Available in the Connector to Elasticsearch 6 only.

1 This is, of course, a nod to all those fans of [Boaty Mcboatface](#).

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