Install Elasticsearch with RPM

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The RPM for Elasticsearch can be downloaded from our website or from our RPM repository. It can be used to install Elasticsearch on any RPM-based system such as OpenSuSE, SLES, Centos, Red Hat, and Oracle Enterprise.

NOTE RPM install is not supported on distributions with old versions of RPM, such as SLES 11 and CentOS 5. Please see Install Elasticsearch from archive on Linux or MacOS instead.

This package is free to use under the Elastic license. It contains open source and free commercial features and access to paid commercial features. Start a 30-day trial to try out all of the paid commercial features. See the Subscriptions page for information about Elastic license levels.

The latest stable version of Elasticsearch can be found on the Download Elasticsearch page. Other versions can be found on the Past Releases page.

NOTE Elasticsearch includes a bundled version of OpenJDK from the JDK maintainers (GPLv2+CE). To use your own version of Java, see the JVM version requirements

Import the Elasticsearch PGP Key

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We sign all of our packages with the Elasticsearch Signing Key (PGP key D88E42B4, available from https://pgp.mit.edu) with fingerprint:

```
4609 5ACC 8548 582C 1A26 99A9 D27D 666C D88E 42B4
```

Download and install the public signing key:

```
rpm --import https://artifacts.elastic.co/GPG-KEY-elasticsearch
```

Installing from the RPM repository

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Create a file called `elasticsearch.repo` in the `/etc/yum.repos.d/` directory for RedHat based distributions, or in the `/etc/zypp/repos.d/` directory for OpenSuSE based distributions, containing:

```
[elasticsearch]
name=Elasticsearch repository for 7.x packages
baseurl=https://artifacts.elastic.co/packages/7.x/yum
gpgcheck=1
gpgkey=https://artifacts.elastic.co/GPG-KEY-elasticsearch
enabled=0
autorefresh=1
type=rpm-md
```

And your repository is ready for use. You can now install Elasticsearch with one of the following commands:

```
sudo yum install --enablerepo=elasticsearch elasticsearch  1
sudo dnf install --enablerepo=elasticsearch elasticsearch  2
sudo zypper modifyrepo --enable elasticsearch && \
  sudo zypper install elasticsearch; \
  sudo zypper modifyrepo --disable elasticsearch  3
```

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1 Use `yum` on CentOS and older Red Hat based distributions.

2 Use `dnf` on Fedora and other newer Red Hat distributions.

3 Use `zypper` on OpenSUSE based distributions

NOTE The configured repository is disabled by default. This eliminates the possibility of accidentally upgrading `elasticsearch` when upgrading the rest

of the system. Each install or upgrade command must explicitly enable the repository as indicated in the sample commands above.

NOTE An alternative package which contains only features that are available under the Apache 2.0 license is also available. To install it, use the following `baseurl` in your `elasticsearch.repo` file:

```
baseurl=https://artifacts.elastic.co/packages/oss-7.x/yum
```

Download and install the RPM manually

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The RPM for Elasticsearch v7.10.0 can be downloaded from the website and installed as follows:

```
wget https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-7.10
wget https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-7.10
shasum -a 512 -c elasticsearch-7.10.0-x86_64.rpm.sha512  1
sudo rpm --install elasticsearch-7.10.0-x86_64.rpm
```

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1 Compares the SHA of the downloaded RPM and the published checksum, which should output `elasticsearch-{version}-x86_64.rpm: OK`.

Alternatively, you can download the following package, which contains only features that are available under the Apache 2.0 license: https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-oss-7.10.0-x86_64.rpm

NOTE On systemd-based distributions, the installation scripts will attempt to set kernel parameters (e.g., `vm.max_map_count`); you can skip this by masking the systemd-sysctl.service unit.

Enable automatic creation of system indices

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Some commercial features automatically create indices within Elasticsearch. By default, Elasticsearch is configured to allow automatic index creation, and no additional steps are required. However, if you have disabled automatic index creation in Elasticsearch, you must configure `action.auto_create_index` in `elasticsearch.yml` to allow the commercial features to create the following indices:

```
action.auto_create_index: .monitoring*,.watches,.triggered_watches,.watcher-
```

IMPORTANT If you are using Logstash or Beats then you will most likely require additional index names in your `action.auto_create_index` setting, and the exact value will depend on your local configuration. If you are unsure of the correct value for your environment, you may consider setting the value to `*` which will allow automatic creation of all indices.

SysV `init` vs `systemd`

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Elasticsearch is not started automatically after installation. How to start and stop Elasticsearch depends on whether your system uses SysV `init` or `systemd` (used by newer distributions). You can tell which is being used by running this command:

```
ps -p 1
```

Running Elasticsearch with SysV `init`

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Use the `chkconfig` command to configure Elasticsearch to start automatically when the system boots up:

```
sudo chkconfig --add elasticsearch
```

Elasticsearch can be started and stopped using the `service` command:

```
sudo -i service elasticsearch start
sudo -i service elasticsearch stop
```

If Elasticsearch fails to start for any reason, it will print the reason for failure to STDOUT. Log files can be found in `/var/log/elasticsearch/`.

Running Elasticsearch with `systemd`

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To configure Elasticsearch to start automatically when the system boots up, run the following commands:

```
sudo /bin/systemctl daemon-reload
sudo /bin/systemctl enable elasticsearch.service
```

Elasticsearch can be started and stopped as follows:

```
sudo systemctl start elasticsearch.service
sudo systemctl stop elasticsearch.service
```

These commands provide no feedback as to whether Elasticsearch was started successfully or not. Instead, this information will be written in the log files located in `/var/log/elasticsearch/`.

If you have password-protected your Elasticsearch keystore, you will need to provide `systemd` with the keystore password using a local file and systemd environment variables. This local file should be protected while it exists and may be safely deleted once Elasticsearch is up and running.

```
echo "keystore_password" > /path/to/my_pwd_file.tmp
chmod 600 /path/to/my_pwd_file.tmp
sudo systemctl set-environment ES_KEYSTORE_PASSPHRASE_FILE=/path/to/my_pwd_f
sudo systemctl start elasticsearch.service
```

By default the Elasticsearch service doesn't log information in the `systemd` journal. To enable `journalctl` logging, the `--quiet` option must be removed from the `ExecStart` command line in the `elasticsearch.service` file.

When `systemd` logging is enabled, the logging information are available using the `journalctl` commands:

To tail the journal:

```
sudo journalctl -f
```

To list journal entries for the elasticsearch service:

```
sudo journalctl --unit elasticsearch
```

To list journal entries for the elasticsearch service starting from a given time:

```
sudo journalctl --unit elasticsearch --since  "2016-10-30 18:17:16"
```

Check `man journalctl` or https://www.freedesktop.org/software/systemd/man/journalctl.html for more command line options.

Checking that Elasticsearch is running

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You can test that your Elasticsearch node is running by sending an HTTP request to port `9200` on `localhost`:

```
GET /
```

Copy as cURL View in Console

which should give you a response something like this:

```
{
  "name" : "Cp8oag6",
  "cluster_name" : "elasticsearch",
  "cluster_uuid" : "AT69_T_DTp-1qgIJlatQqA",
  "version" : {
    "number" : "7.10.0",
    "build_flavor" : "default",
    "build_type" : "tar",
    "build_hash" : "f27399d",
    "build_date" : "2016-03-30T09:51:41.449Z",
    "build_snapshot" : false,
    "lucene_version" : "8.7.0",
    "minimum_wire_compatibility_version" : "1.2.3",
    "minimum_index_compatibility_version" : "1.2.3"
  },
  "tagline" : "You Know, for Search"
}
```


Configuring Elasticsearch

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The `/etc/elasticsearch` directory contains the default runtime configuration for Elasticsearch. The ownership of this directory and all contained files are set to `root:elasticsearch` on package installations.

The `setgid` flag applies group permissions on the `/etc/elasticsearch` directory to ensure that Elasticsearch can read any contained files and subdirectories. All files and subdirectories inherit the `root:elasticsearch` ownership. Running commands from this directory or any subdirectories, such as the elasticsearch-keystore tool, requires `root:elasticsearch` permissions.

Elasticsearch loads its configuration from the `/etc/elasticsearch/elasticsearch.yml` file by default. The format of this config file is explained in *Configuring Elasticsearch*.

The RPM also has a system configuration file (`/etc/sysconfig/elasticsearch`), which allows you to set the following parameters:

`JAVA_HOME`	Set a custom Java path to be used.

`MAX_OPEN_FILES`	Maximum number of open files, defaults to `65535`.
`MAX_LOCKED_MEMORY`	Maximum locked memory size. Set to `unlimited` if you use the `bootstrap.memory_lock` option in elasticsearch.yml.
`MAX_MAP_COUNT`	Maximum number of memory map areas a process may have. If you use `mmapfs` as index store type, make sure this is set to a high value. For more information, check the linux kernel documentation about `max_map_count`. This is set via `sysctl` before starting Elasticsearch. Defaults to `262144`.
`ES_PATH_CONF`	Configuration file directory (which needs to include `elasticsearch.yml`, `jvm.options`, and `log4j2.properties` files); defaults to `/etc/elasticsearch`.
`ES_JAVA_OPTS`	Any additional JVM system properties you may want to apply.
`RESTART_ON_UPGRADE`	Configure restart on package upgrade, defaults to `false`. This means you will have to restart your Elasticsearch instance after installing a package manually. The reason for this is to ensure, that upgrades in a cluster do not result in a continuous shard reallocation resulting in high network traffic and reducing the response times of your cluster.

NOTE Distributions that use `systemd` require that system resource limits be configured via `systemd` rather than via the `/etc/sysconfig/elasticsearch` file. See Systemd configuration for more information.

Directory layout of RPM

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The RPM places config files, logs, and the data directory in the appropriate locations for an RPM-based system:

Type	Description	Default Location	Setting
home	Elasticsearch home directory or `$ES_HOME`	`/usr/share/elasticsearch`	
bin	Binary scripts including `elasticsearch` to start a node and `elasticsearch-plugin` to install plugins	`/usr/share/elasticsearch/bin`	
conf	Configuration files including `elasticsearch.yml`	`/etc/elasticsearch`	ES_PATH_CONF
conf	Environment variables including heap size, file descriptors.	`/etc/sysconfig/elasticsearch`	
data	The location of the data files of each index / shard allocated on the node. Can hold multiple locations.	`/var/lib/elasticsearch`	`path.data`
jdk	The bundled Java Development Kit used to run Elasticsearch. Can be overridden by setting the `JAVA_HOME` environment variable in `/etc/sysconfig/elasticsearch`.	`/usr/share/elasticsearch/jdk`	
logs	Log files location.	`/var/log/elasticsearch`	`path.logs`

Type	Description	Default Location	Setting
plugins	Plugin files location. Each plugin will be contained in a subdirectory.	`/usr/share/elasticsearch/plugins`	
repo	Shared file system repository locations. Can hold multiple locations. A file system repository can be placed in to any subdirectory of any directory specified here.	Not configured	`path.repo`

Next steps

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You now have a test Elasticsearch environment set up. Before you start serious development or go into production with Elasticsearch, you must do some additional setup:

- Learn how to configure Elasticsearch.
- Configure important Elasticsearch settings.
- Configure important system settings.

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