LifeRay Docs :-

Prerequisite :
- 3 separate Linux machines (Centos)
- OpenJDK [Liferay is compatible Java 8 or Java 11]

Install OpenJDK

 # sudo yum install -y java-1.8.0-openjdk java-1.8.0-openjdk-devel

Checking java variable: $JAVA_HOME

 # echo $JAVA_HOME

Output:

```
[root@liferay ~]# echo $JAVA_HOME
[root@liferay ~]#
```

The variable is empty, lets export:

 # export JAVA_HOME=/usr/lib/jvm/java

 # export JRE_HOME=$JAVA_HOME/jre

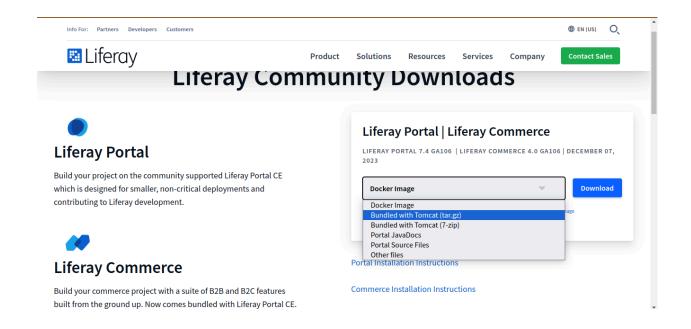**# export PATH=$PATH:$JAVA_HOME/bin:$JRE_HOME/bin**

Checking:

 # echo $JAVA_HOME

```
[root@liferay ~]# export JAVA_HOME=/usr/lib/jvm/java
[root@liferay ~]# export JRE_HOME=$JAVA_HOME/jre
[root@liferay ~]# export PATH=$PATH:$JAVA_HOME/bin:$JRE_HOME/bin
[root@liferay ~]# echo $JAVA_HOME
/usr/lib/jvm/java
```

Install Liferay on Node1

Go to this website: https://www.liferay.com/downloads-community

Choose Bundled with Tomcat(tar.gz)

Node0 which Contain Liferay

```
# sudo yum -y install wget
```

```
# wget liferay-ce-portal-tomcat-7.4.3.106-ga106-20231207073813307.tar.gz
```

```
# ll
```


```
-rw-r--r--.  1 root root 972971235 Dec  7 21:27 liferay-ce-portal-tomcat-7.4.3.106-ga106-20231207073813307.tar.gz
```

Extract the file:

 # sudo tar xvf liferay-ce-portal-tomcat-7.4.3.106-ga106-20231207073813307.tar.gz

 # ll


```
[root@liferay liferay]# ll
total 950172
drwxr-xr-x. 12 root root      4096 Dec  7 16:31 liferay-ce-portal-7.4.3.106-ga106
-rw-r--r--.  1 root root 972971235 Dec  7 21:27 liferay-ce-portal-tomcat-7.4.3.106-ga106-20231207073813307.tar.gz
[root@liferay liferay]#
```

Node1 (install and Configure External DB)

Install MYSQL DB

 # curl -sSLO https://dev.mysql.com/get/mysql80-community-release-el7-5.noarch.rpm

 # md5sum mysql80-community-release-el7-5.noarch.rpm

 # sudo rpm -ivh mysql57-community-release-el7-9.noarch.rpm

 # sudo yum install mysql-server

 # sudo systemctl start mysqld

 # sudo systemctl status mysqld

```
[root@node1 ~]# systemctl status mysqld.service
● mysqld.service - MySQL 8.0 database server
   Loaded: loaded (/usr/lib/systemd/system/mysqld.service; enabled; vendor preset: disabled
   Active: active (running) since Wed 2024-01-24 20:47:44 UTC; 3min 0s ago
  Process: 1655 ExecStartPost=/usr/libexec/mysql-check-upgrade (code=exited, status=0/SUCCE
 Main PID: 1001 (mysqld)
   Status: "Server is operational"
    Tasks: 37 (limit: 49483)
   Memory: 497.2M
   CGroup: /system.slice/mysqld.service
           └─1001 /usr/libexec/mysqld --basedir=/usr

Jan 24 20:47:28 node1 systemd[1]: Starting MySQL 8.0 database server...
Jan 24 20:47:44 node1 systemd[1]: Started MySQL 8.0 database server.
[root@node1 ~]#
```

Finishing with setting the password and configure some features:

 # sudo mysql_secure_installation

```
root user without the proper authorisation.

Set root password? [Y/n] y
New password:
Re-enter new password:
Password updated successfully!
Reloading privilege tables..
 ... Success!


By default, a MariaDB installation has an anonymous user, allowing anyone
to log into MariaDB without having to have a user account created for
them.  This is intended only for testing, and to make the installation
go a bit smoother.  You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n] y
 ... Success!

Normally, root should only be allowed to connect from 'localhost'.  This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y
 ... Success!

By default, MariaDB comes with a database named 'test' that anyone can
access.  This is also intended only for testing, and should be removed
before moving into a production environment.

Remove test database and access to it? [Y/n] y
 - Dropping test database...
 ... Success!
 - Removing privileges on test database...
 ... Success!

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] y
 ... Success!

Cleaning up...
```

Now we finish configuring our database server we have to create a database named **"lportal"** and the user with full access:

 # mysql -u root -p

 # create database lportal character set utf8mb4 collate utf8mb4_unicode_ci;


```
mysql> create database lportal character set utf8mb4 collate utf8mb4_unicode_ci;
```


 # create user 'lportalusr'@'localhost' identified by 'PASSWORD';

 # grant all privileges on lportal.* to 'lportalusr'@'localhost' with grant option;

```
mysql> grant all privileges on lportal.* to 'lportalusr'@'localhost' with grant option;
```

Checking the database:

show databases;

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| liferaydb          |
| lportal            |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
6 rows in set (0.01 sec)

mysql>
```

Checking the Users:

```
mysql> select host,user from mysql.user;
+-----------+------------------+
| host      | user             |
+-----------+------------------+
| %         | liferayuser      |
| %         | lportalusr       |
| localhost | mysql.infoschema |
| localhost | mysql.session    |
| localhost | mysql.sys        |
| localhost | root             |
+-----------+------------------+
6 rows in set (0.00 sec)
Show Applications
mysql>
```

Node2 (Install and configure elasticsearch)

Installing Elasticsearch

import the repository's GPG using the <u>rpm</u> command:

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

Open your text editor and create the repository file the /etc/yum.repos.d directory:

 # sudo vim /etc/yum.repos.d/elasticsearch.repo
[elasticsearch-7.x]
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=1
autorefresh=1
type=rpm-md

Now that the repository is enabled, install the Elasticsearch package by typing:

 # sudo yum install elasticsearch

Once the installation process is complete, start, and enable the service:

 # sudo systemctl enable elasticsearch.service --now
 # sudo systemctl status elasticsearch.service

```
[root@node2 ~]# systemctl status elasticsearch.service
● elasticsearch.service - Elasticsearch
   Loaded: loaded (/usr/lib/systemd/system/elasticsearch.service; enabled; vendor preset: disabled)
   Active: active (running) since Wed 2024-01-24 20:48:57 UTC; 6min ago
     Docs: https://www.elastic.co
 Main PID: 1171 (java)
    Tasks: 63 (limit: 49483)
   Memory: 4.4G
   CGroup: /system.slice/elasticsearch.service
           ├─1171 /usr/share/elasticsearch/jdk/bin/java -Xshare:auto -Des.networkaddress.cache.ttl=60 -Des.networkaddress.cache.negative.ttl=10>
           └─2653 /usr/share/elasticsearch/modules/x-pack-ml/platform/linux-x86_64/bin/controller

Jan 24 20:47:44 node2 systemd[1]: Starting Elasticsearch...
Jan 24 20:48:05 node2 systemd-entrypoint[1171]: Jan 24, 2024 8:48:04 PM sun.util.locale.provider.LocaleProviderAdapter <clinit>
Jan 24 20:48:05 node2 systemd-entrypoint[1171]: WARNING: COMPAT locale provider will be removed in a future release
Jan 24 20:48:57 node2 systemd[1]: Started Elasticsearch.
[root@node2 ~]#
```

To allow Network from external

 # sudo vim /etc/elasticsearch/elasticsearch.yml

network.host: 0.0.0.0

 # sudo systemctl restart elasticsearch

Back TO Node0 (Liferay) :

Creating the configuration file named "**portal-ext.properties**" for liferay Database in
/liferay/liferay-ce-portal-7.4.3.106-ga106//tomcat-9.0.17/webapps/ROOT/WEB-INF/classes/

Vim
liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/webapps/ROOT/WEB-INF/classes/portal-ext.propert
ies

```
virtual.hosts.valid.hosts=Public_ip,localhost,127.0.0.1
jdbc.default.driverClassName=com.mysql.jdbc.Driver
jdbc.default.url=jdbc:mysql://privateIP:3306/lportal?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false
jdbc.default.username=lportalusr
jdbc.default.password=Your_Password


~
~
~
```

Configure Elasticsearch:

cd /root/liferay/liferay-ce-portal-7.4.3.106-ga106/osgi/configs

Create file with this name
Vim
com.liferay.portal.search.elasticsearch7.configuration.ElasticsearchConfiguration.config

```
# In CE/DXP 7.3+, productionModeEnabled replaces operationMode (deprecated):
productionModeEnabled=B"true"
networkHostAddresses=["http://10.0.0.6:9200"]
authenticationEnabled=B"true"
username="elastic_username"
password="your_pass"
~
```

Running Configuration check
/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.17/bin/configtest.sh

sudo chmod +x *.sh

sudo ./configtest.sh

```
Using CATALINA_TMPDIR: /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/temp
Using JRE_HOME:        /
Using CLASSPATH:       /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/bin/bootstrap.jar:/root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/bin/tomcat-juli.jar
Using CATALINA_OPTS:   -Dfile.encoding=UTF-8 -Djava.locale.providers=JRE,COMPAT,CLDR -Djava.net.preferIPv4Stack=true -Duser.timezone=GMT -Xms2560m -Xmx2560m -XX:MaxNewSize=1536m -XX:MaxMetaspaceSize=768m -XX:Metaspa
ceSize=768m -XX:NewSize=1536m -XX:SurvivorRatio=7
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Server version name:        Apache Tomcat/9.0.82
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Server built:               Oct 11 2023 13:15:00 UTC
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Server version number: 9.0.82.0
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: OS Name:                    Linux
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: OS Version:                 4.18.0-348.7.1.el8_5.x86_64
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Architecture:               amd64
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Java Home:                  /usr/lib/jvm/java-1.8.0-openjdk-1.8.0.312.b07-2.el8_5.x86_64/jre
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: JVM Version:                1.8.0_312-b07
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: JVM Vendor:                 Red Hat, Inc.
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: CATALINA_BASE:              /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: CATALINA_HOME:              /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Djdk.tls.ephemeralDHKeySize=2048
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Djava.protocol.handler.pkgs=org.apache.catalina.webresources
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Dorg.apache.catalina.security.SecurityListener.UMASK=0027
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Dignore.endorsed.dirs=
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Dcatalina.base=/root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Dcatalina.home=/root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82
Jan 28, 2024 3:41:10 PM org.apache.catalina.startup.VersionLoggerListener log
INFO: Command line argument: -Djava.io.tmpdir=/root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/temp
Jan 28, 2024 3:41:10 PM org.apache.catalina.core.AprLifecycleListener lifecycleEvent
INFO: The Apache Tomcat Native library which allows using OpenSSL was not found on the java.library.path: [/usr/java/packages/lib/amd64:/usr/lib64:/lib64:/lib:/usr/lib]
Jan 28, 2024 3:41:11 PM org.apache.coyote.AbstractProtocol init
INFO: Initializing ProtocolHandler ["http-nio-8080"]
Jan 28, 2024 3:41:11 PM org.apache.catalina.startup.Catalina load
INFO: Server initialization in [1298] milliseconds
[root@liferay bin]#
```

No errors.

Now the first startup, on /liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.17/bin/

 # sudo chmod +x *.sh

 # sudo ./startup.sh

```
[root@liferay bin]# ./startup.sh
Using CATALINA_BASE:   /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82
Using CATALINA_HOME:   /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82
Using CATALINA_TMPDIR: /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/temp
Using JRE_HOME:        /
Using CLASSPATH:       /root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/bin/bootstrap.jar:/root/liferay/liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.82/bin/tomcat-juli.jar
Using CATALINA_OPTS:   -Dfile.encoding=UTF-8 -Djava.locale.providers=JRE,COMPAT,CLDR -Djava.net.preferIPv4Stack=true -Duser.timezone=GMT -Xms2560m -Xmx2560m -XX:MaxNewSize=1536m -XX:MaxMetaspaceSize=768m -XX:Metaspa
ceSize=768m -XX:NewSize=1536m -XX:SurvivorRatio=7
Tomcat started.
[root@liferay bin]#
```

To monitor the startup server and almost everything on your liferay server messages:

 # sudo tail -f /liferay//liferay-ce-portal-7.4.3.106-ga106/tomcat-9.0.17/log/catalina.out

collation_keyword]]"],[299 Elasticsearch-7.17.16-2b23fa076334f8d4651aeebe458a955a2ae23218 "dynamic template [template_ja] has invalid content [{
\"match\":\"\\\\w+_ja\\\\b|\\\\w+_ja_[A-Z]{2}\\\\b\",\"match_mapping_type\":\"string\",\"match_pattern\":\"regex\",\"mapping\":{\"analyzer\":\"k
uromoji\",\"store\":true,\"term_vector\":\"with_positions_offsets\",\"type\":\"text\"}}], attempted to validate it with the following match_mapp
ing_type: [string], caused by [analyzer [kuromoji] has not been configured in mappings]"],[299 Elasticsearch-7.17.16-2b23fa076334f8d4651aeebe458
a955a2ae23218 "dynamic template [template_pl] has invalid content [{\"match\":\"\\\\w+_pl\\\\b|\\\\w+_pl_[A-Z]{2}\\\\b\",\"match_mapping_type\":
\"string\",\"match_pattern\":\"regex\",\"mapping\":{\"analyzer\":\"polish\",\"store\":true,\"term_vector\":\"with_positions_offsets\",\"type\":\
"text\"}}], attempted to validate it with the following match_mapping_type: [string], caused by [analyzer [polish] has not been configured in ma
ppings]"],[299 Elasticsearch-7.17.16-2b23fa076334f8d4651aeebe458a955a2ae23218 "dynamic template [template_zh] has invalid content [{\"match\":\"
\\\\w+_zh\\\\b|\\\\w+_zh_[A-Z]{2}\\\\b\",\"match_mapping_type\":\"string\",\"match_pattern\":\"regex\",\"mapping\":{\"analyzer\":\"smartcn\",\"s
tore\":true,\"term_vector\":\"with_positions_offsets\",\"type\":\"text\"}}], attempted to validate it with the following match_mapping_type: [st
ring], caused by [analyzer [smartcn] has not been configured in mappings]"]

     __ / __/ __ / _/ _/ __ / _/ __ \ / /
    / /   / / / ___/ __/ __ / __ / / \ \/ /
   / /___/ // / ___/ __ / , _/ __ \/ /
  /____/_/ /____/_/ |_/_/ |_/

Starting Liferay Community Edition Portal 7.4.3.106 CE GA106 (December 8, 2023)

2024-01-24 21:14:25.049 INFO [main][StartupHelperUtil:96] There are no patches installed
2024-01-24 21:14:25.312 INFO [main][LoggingTimer:74] Starting com.liferay.portal.events.StartupHelperUtil#initResourceActions
2024-01-24 21:14:25.371 INFO [main][LoggingTimer:35] Completed com.liferay.portal.events.StartupHelperUtil#initResourceActions in 60 ms
2024-01-24 21:14:26.074 INFO [main][AutoDeployDir:152] Auto deploy scanner started for /root/liferay/liferay-ce-portal-7.4.3.106-ga106/deploy
21:14:26,693 WARN [RestClient:72] request [PUT http://10.0.0.6:9200/liferay-5815797406307658202/_mapping?master_timeout=30s&timeout=30s] return
ed 49 warnings: [299 Elasticsearch-7.17.16-2b23fa076334f8d4651aeebe458a955a2ae23218 "dynamic template [template_string_sortable_ar] has invalid
content [{\"match\":\"\\\\w+_ar_[A-Z]{2}_sortable\\\\b|\\\\w+_ar_[A-Z]{2}_\\\\w+_sortable\\\\b\",\"match_mapping_type\":\"string\",\"match_patte
rn\":\"regex\",\"mapping\":{\"fields\":{\"keyword_lowercase\":{\"normalizer\":\"lowercase\",\"type\":\"keyword\"}},\"language\":\"ar\",\"store\"
:true,\"type\":\"icu_collation_keyword\"}}], attempted to validate it with the following match_mapping_type: [string], caused by [No mapper foun
d for type [icu_collation_keyword]]"],[299 Elasticsearch-7.17.16-2b23fa076334f8d4651aeebe458a955a2ae23218 "dynamic template [template_string_sor

The server is up and running .

this is the first time running Liferay on http://IPSERVER:8080.