BPM 5.x Installation - Quick guide

> **Note:** This document does not replace the official documentation available on Tibco documentation.

This guide is made with BPME 5.2.1 but the installation processes are the same for all 5.x versions (tested up to 5.3).

TIBCO BPM Enterprise can be installed in two configurations - one intended for development use, one for production. You can download the TIBCO BPM Enterprise software package from edelivery.tibco.com.

BPM Developer Server

Once the package has been downloaded and extracted, you can run the installation file via the command:

```
$ ./TIBCOUniversalInstaller-lnx-x86-64.bin -console
```

The steps to follow during the installation phase are:

1. Set up the **TIBCO_HOME**;
2. Choose the configuration you want to install, Developer Server or Kubernetes;
3. JDBC driver packages can also be added to the installation;
4. What type of database you want to use;
5. Set up the **CONFIG_HOME**.

Below are the important configuration steps during installation:

```
Choose one or more installation profiles. Installation Profiles
preselect the installation features for you. You will have the
option to customize your selections after making your profile choices.


   1. [x] BPM Developer Server
   2. [ ] BPM for Kubernetes
```

```
Do you want to customize the install feature selections? [Yes]

TIBCO ® BPM Enterprise 5.2.1 - Feature Selection
------------------------------------------------

Choose the features to install.
```

```
   1. [X] BPM Core Runtime
   2. [ ] Package JDBC Driver
   3. [X] Build Docker Images

To select an item, enter its number. Enter '0' when you are finished. 2

   1. [X] BPM Core Runtime
   2. [X] Package JDBC Driver
   3. [X] Build Docker Images

To select an item, enter its number. Enter '0' when you are finished.
```

```
TIBCO Universal Installer - Database Type
-----------------------------------------

Choose the Database Type


   1. PostgreSQL
   2. Oracle
   3. SQL Server

Select an option by entering its number from the list above. [1]
```

The installer completes the following tasks:

- processes and copies the required TIBCO BPM Enterprise files to TIBCO_HOME
- configures the TIBCO BPM Enterprise software, copying the required files to CONFIG_HOME
- builds Docker images of the PostgreSQL, ApacheDS LDAP server, and TIBCO BPM Enterprise application
- starts the TIBCO BPM Enterprise Developer Server (using docker-compose up), which exposes the PostgreSQL, ApacheDS LDAP server, and TIBCO BPM Enterprise application as services.

Once the installation is complete, there will be four images: the BPM runtime, Database, LDAP and an image called utility that is used to configure the database and LDAP. Using **docker images** command you should have something like this:

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
tibco/bpm/utility	5.2.1	94ca01a3c515	23 minutes ago	248MB
tibco/bpm/runtime	5.2.1	515c527fc129	23 minutes ago	614MB
tibco/bpm/apacheds	1.5.6	50e7aaab090b	23 minutes ago	300MB
tibco/bpm/postgresql	11.8	308e7a2072de	23 minutes ago	156MB

You can log into TIBCO BPM Enterprise UI on the following URL:

```
http://localhost/apps/login/index.html
```

with the following credentials:

- username: tibco-admin
- password: secret

In case you need to start the containers manually, you can use the dockerfiles present in the Config Home:

```
$ cd CONFIG_HOME/tibco/cfgmgmt/bpm/samples/bpm-compose
$ docker-compose up -d
```

BPM for Kubernetes

Once the package has been downloaded and extracted, you can run the installation file via the command:

```
$ ./TIBCOUniversalInstaller-lnx-x86-64.bin -console
```

The steps to follow during the installation phase are:

1. Set up the **TIBCO_HOME**;
2. Choose the configuration you want to install, Developer Server or Kubernetes;
3. JDBC driver packages can also be added to the installation;
4. What type of database you want to use. If you select the Oracle database, click Browse to navigate to the location of the Oracle Database 19c JDBC Driver ojdbc8.jar file;
5. Set up the **CONFIG_HOME**.

Below are the important configuration steps during installation:

```
Choose one or more installation profiles. Installation Profiles
preselect the installation features for you. You will have the
option to customize your selections after making your profile choices.


   1. [ ] BPM Developer Server
   2. [ ] BPM for Kubernetes

To select an item, enter its number. Enter '0' when you are finished. 2

   1. [ ] BPM Developer Server
   2. [X] BPM for Kubernetes

To select an item, enter its number. Enter '0' when you are finished. 0

Do you want to customize the install feature selections? [Yes]
```

```
TIBCO ® BPM Enterprise 5.2.1 - Feature Selection
-----------------------------------------------

Choose the features to install.


   1. [X] BPM Core Runtime
   2. [X] Package JDBC Driver
   3. [X] Build Docker Images

To select an item, enter its number. Enter '0' when you are finished.
```

```
Choose a folder to be used as the TIBCO configuration destination for this
installation environment. The configuration directory is used to store product
configuration information. The folder must not already exist as a configuration
destination for another TIBCO installation environment. Subdirectories
tibco/cfgmgmt will be appended to this directory.

TIBCO Configuration Directory: [/home/tibco/TIBCO_HOME2]
/opt/tibco/BPM/5.2.1/tibcoCfgHome

Enter '1' to continue, '2' to go back to the previous panel, or '3' cancel: [1]

TIBCO Universal Installer - Database Type
-----------------------------------------

Choose the Database Type


   1. PostgreSQL
   2. Oracle
   3. SQL Server
```

The installer completes the following tasks:

- processes and copies the required TIBCO BPM Enterprise files to TIBCO_HOME;
- configures the TIBCO BPM Enterprise software, copying the required files to CONFIG_HOME;
- builds the Docker image of the TIBCO BPM Enterprise application, which you can then add to Kubernetes.

Once the installation is complete, there will be two images: the BPM runtime and an image called utility that is used to configure the database and LDAP.

Database configuration

During the installation you will be asked to choose which database to use. Let's take PostgreSQL as an example.

Create a new database with a suitable name. For example: bpmdb. In the *CONFIG_HOME/tibco/cfgmgmt/bpm/database* folder there are folders for all types of databases. Enter the PostgreSQL database folder and run the script **createuser.sql**:

```
DO
$do$
BEGIN
    IF NOT EXISTS (SELECT 1 FROM pg_roles WHERE rolname='bpmuser')
    THEN
        CREATE ROLE bpmuser LOGIN PASSWORD 'bpmuser' NOINHERIT VALID UNTIL
'infinity';
        GRANT bpmuser TO postgres;
        CREATE SCHEMA bpm AUTHORIZATION bpmuser;
        ALTER USER bpmuser SET search_path TO bpm,public;
    END IF;
END
$do$
```

To create a database schema run the -setupDatabase option with the execute argument:

```
docker run -it --rm tibco/bpm/utility:5.2.1 utility -setupDatabase execute -
dbConfig url=jdbc:postgresql://<host>:<port>/bpmdb username=bpmuser
password=bpmuser
```

Alternatively, to create a database schema running the utility as a Kubernetes job, use:

```
cat <<EOF | kubectl apply -f -
apiVersion: batch/v1
kind: Job
metadata:
  name: utility
  namespace: bpme
spec:
  template:
    spec:
      hostPID: true
      containers:
      - name: utility
        image: tibco/bpm/utility:5.2.1
        command: ["utility","-dbConfig","url=jdbc:postgresql://<postgres-service>:
<port>/bpmdb  username=xxx password=xxx","-setupDatabase execute"]
      restartPolicy: Never
 EOF
```

LDAP configuration

Use the provided "utility" Docker image to configure the tibco-admin LDAP user:

```
docker run -it --rm tibco/bpm/utility:5.2.1 utility -dbConfig
url=jdbc:postgresql://<host>:<port>/bpmdb username=bpmuser password=bpmuser -
setupAdminUser ldapAlias=system ldapDn='uid=admin,ou=system'
displayName=Administrator
```

Kubernetes yaml file

A sample deployment file is included in the TIBCO BPM Enterprise installation in the *CONFIG_HOME/tibco/cfgmgmt/bpm/samples/kubernetes* folder. This section will show the main files:

- bpm-deployment.yaml
- bpm-ingress.yaml
- bpm-namespace.yaml
- bpm-secrets-db.yaml
- bpm-secrets-ldap.yaml
- bpm-service.yaml

Note: In order to encrypt passwords in base64 for database and LDAP yaml files you can use the following command:

$ echo -n **password** | base64

For the LDAP_SYSTEM_PRINCIPAL you have to use the same value used in the docker run command during the LDAP configuration. Pay attention to include quotes during the encryption.
To verify the correct value use the following command:

$ echo -n **encrypted_password** | base64