NETPortal Installation Guide

Release 9.0

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REVISION HISTORY

RELEASE	DESCRIPTION	DATE
1.0	Initial draft for 9.0 FCS release	August 2012
2.0	Document for 9.0 G.A. release	September 2012

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Table of Contents

1. About This Guide

1.1. Purpose and Scope

The purpose of this guide is to explain the steps for installing and configuring NETPortal.

1.2. Assumptions

Users should be familiar with UNIX operating system commands and basic XML.

1.3. Related Information

This guide is designed as a stand-alone document for installing and configuring NETPortal parameters and custom application extensions.

1.4. Technical Assistance / Support Services

TierOne OSS Technologies Inc.

Toll-free: 1-888-677-4228

1.5. Using This Guide

The ***NETPortal Installation Guide*** begins with an explanation of the directories and files delivered with the installation CD. The following sections describe the process for installing NETPortal for the first time, as well as creating the database and configuring the administrative web server, WebLogic. The steps for performing an upgrade are described in the final section. If you have any questions about product installation or configuration, please contact our Support Services, section 1.4.

1.6. Conventions

This guide uses certain conventions and symbols as described in the following tables:

TYPOGRAPHICAL CONVENTIONS	
DESCRIPTION	**EXAMPLE**
User interface actions appear in this **typeface.**	On the Status bar, click **Start**.
Buttons or switches that you press on a unit appear in this **TYPEFACE**.	Press the **ON** switch.
Code and output messages appear in this `typeface`.	`All results okay`
Text you must type exactly as shown appears in this **`typeface.`**	Type: **`a:/set.exe`** in the dialog box
Variables appear in this **`<typeface>.`**	Type the new **`<hostname>`**.
A '**#**' indicates Unix shell command prompt for the **root** user.	# cat /etc/system

A '**$**' indicates the Unix shell command prompt for a **non-root** user.	$ ./startWebLogic.sh
Book references appear in this ***typeface***.	Refer to ***Newton's Telecom Dictionary***
A vertical bar that looks like '|' means "or." When shown with several options in a command, only one option should be used.	platform [a|b|e]
Square brackets '[','] ' indicate an optional argument.	**login [platform name]**
Slanted brackets '{, '} ' group required arguments.	**{password}**

Table 1 Typographical conventions

KEYBOARD & MENU CONVENTIONS	
DESCRIPTION	**EXAMPLE**
A plus sign + indicates simultaneous keystrokes.	Press **Ctrl+s**
A comma indicates sequential keystrokes.	Press **Alt+f,s**
An angled bracket or right arrow indicates choosing a submenu from a higher-level menu item.	On the menu bar, click **Start → Program Files**.

Table 2 Keyboard and menu conventions

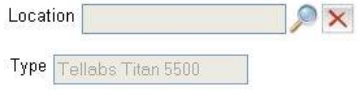
CONVENTIONS FOR DESCRIBING OBJECT FIELDS	
DESCRIPTION	**EXAMPLE**
Bolded text in tables indicates a mandatory object field.	**Location Code**
Drop-down menu options. The default option is shown bolded.	**Disabled**, Enabled
Read-only fields populated from a lookup table. These fields appear shaded in the display and cannot be edited.	

Table 3 Conventions for describing object fields

NOTE: This highlighted line represents a note indicating related information or a tip.

2. NETPortal Installation

The following instructions go through the steps to install NETPortal. It is assumed that a supported web server (example: WebLogic 10.3.4 or RedHat JBoss 5.1) is already installed and a supported database product (e.g. Oracle 11g or Postgres 9.1) is also installed.

2.1. Distribution

The top-level folder on the CD or zipped install file is in the following format:

```
<Dir>    tnp-<version#>-<build#>
<Dir>    ProductDocumentation
```

`tnp-<version#>-<build#>` directory has the following subdirectories:

```
<Dir>    adapters
<Dir>    api
<Dir>    bin
<Dir>    BUILD_ID
<Dir>    connectors
<Dir>    database_scripts
<Dir>    distrib
<Dir>    docs
<Dir>    eventhandling
<Dir>    lib
<Dir>    prov-configuration
<Dir>    reports
<Dir>    samples
<Dir>    svg
<Dir>    utils
```

2.2. Install NETPortal Files

1. Create a Unix account called **netportal** on the application server; with group permissions set for readability by the installed web server user (see section 2.4).

> **NOTE:** <netportal_homeDir> will represent **netportal**'s home directory.

```
useradd -c <comment> -d <netportal_homeDir> -g <group> -m -s <shell>
<username>
```

For example:

```
useradd -c "NETPortal owner" -d /home/netportal -g staff -m -s /bin/csh
netportal
```

2. Log into Unix-based server as **netportal** user account and execute the following commands:

```
$ cd
$ mkdir app
$ cd app
```

3. Use a file-transfer or copy command to transfer the distribution file to the app directory created in step 2.

   If the release is in a compressed format, use appropriate tools to uncompress and un-archive the release files. For a release in a Unix 'tar' format, that has been compressed with GNU tools, unzip and un-tar the file in the current directory. The following commands can be run (using an example release name):

```
$ gunzip tnp-9.0.0-1500.tar.gz
$ tar xvf tnp-9.0.0-1500.tar

$ ls
```

   The resulting directory has the following syntax:

   tnp-**<version#>-<build#>**

4. Log out and log in as the web server user (e.g. **weblogic** or **jboss**). NETPortal will be configured into the web server's home directory.

> **NOTE:** <TNP_ServerPort> will represent the Managed Server. Suggested name is TNP_8011.

```
$ cd
$ mkdir tnp-config
$ cd tnp-config
```

```
$ mkdir <TNP_ServerPort>
$ cd <TNP_ServerPort>
$ ln -s <netportal_homeDir>/app/tnp-<version#>-<build#> release
```

5. Create links to the release directory:

```
$ ln  -s  release/*  ./
```

6. The web server user needs read-write permission to the `adapters` directory. Copy all adapter files from `release` directory:

```
$ rm adapters
$ mkdir adapters
$ cp -rp release/adapters ./
```

7. The web server user needs read-write permission to the `reports` directory. Copy all report files from `release` directory :

```
$ rm reports
$ mkdir reports
$ cp -rp release/reports ./
```

8. To utilize the event handling scripts (for customized name generation, for example), the web server user needs read-write permission to the `eventhandling` directory. Copy all event handlers from release directory:

```
$ rm eventhandling
$ mkdir eventhandling
$ cp -rp release/eventhandling ./
```

Then manually copy over any custom event handlers, if provided.

9. Create `license` directory for received license file `<tnplicense>` (see NOTE below).

> **NOTE:** `<webserver_homeDir>` will represent the home directory of the web server user, e.g. **weblogic** or **jboss**.

```
$ mkdir <webserver_homeDir>/tnp-config/<TNP_ServerPort>/license
```

NOTE: <tnplicense> will represent the received license file.

NOTE: For security reasons, the license file <tnplicense> is sent as a separate password-protected file and is not included in the distribution CD. Please contact our Support Services if you have not received a license file. A valid license is required to run NETPortal.

Copy the received license file <tnplicense> to the license directory.

2.3. Create NETPortal Database

2.3.1. Oracle Database

A shell script is provided as part of the distribution to manage creation of the new database tablespace schema as well as updates to the existing schema.

1. Install Oracle 11g. Refer to Oracle 11g installation Guide.

2. Log into database and create a NETPortal database user account with the following parameters:

   NOTE: For ease of use, it is suggested to use the <TNP_ServerPort> value for <dbusername> and 'TNP' for <dbtablespace>.

   ```
   Username = <dbusername>
   Password = <dbpassword>
   User Privileges = CONNECT, EXP_FULL_DATABASE, DBA,
   IMP_FULL_DATABASE
   Table space name = <dbtablespace>
   ```

3. Execute the NETPortal database update script to add required tables to the created database table:

   ```
   $ cd <webserver_homeDir>/tnp-config/<TNP_ServerPort>/database_scripts
   $ ./databaseUpdate.sh
   ```

   You will be prompted to enter database parameters. The following is the console output of the script:

```
Do you want to continue? (y/n)
y
Please enter the database type for this installation (oracle,
postgres):
oracle
Please enter database user name:
<dbusername>
Please enter database user password:
<dbpassword>
Please enter the database server host name or ip:
<localhost/IPaddr>
Please enter the database server port(1521):
1521
Please enter the Oracle database SID:
<SID>
Please enter the tablespace name for data:
<dbtablespace>
Please enter the tablespace name for indexes:
<dbtablespace>
Please enter the LDAP authentication scheme for this installation
(openldap, activedirectory): openldap
Database context: openldap_tierone,no_provisioner,tierone
classpath: ../lib/liquibase-1.9.5.1.jar:../lib/ojdbc6-
11.0.jar:../lib/orai18n-11.0.jar
Clear All Checksums For Update...
Starting database update to jdbc:oracle:thin:@localhost:1521:orcl
...
Updating Change Set Checksums ...
Migration successful
Updating Application Schema ...
Migration successful
Updating Application Privileges ...
Migration successful
```

NOTE: Since all required NETPortal database tables are being created by these scripts, the total running time might be close to 2-4 minutes. Confirm that *three* "Migration successful" messages are returned from the update script as it runs. If any one step is unsuccessful, the others will not run – contact TIERONE Support for assistance with any error messages on installation/configuration.

2.3.2. PostgreSQL Database

2.3.2.1. PostgreSQL Installation

NETPortal supported version of PostgreSQL is 9.1.2.

Confirm that /etc/hosts file contains a full IP address and hostname, as per this example:

```
127.0.0.1   localhost.localdomain localhost
192.168.221.24    fiji.tieroneoss.com fiji loghost
```

1. Download PostgreSQL install package (RPM version) for Red Hat 64-bit Linux from http://www.openscg.org/se/postgresql/packages.jsp. Copy it to /tmp on appropriate host.

2. As root user, confirm that the Linux settings for user/group definitions are in line with corporate security requirements (see /etc/login.defs), and/or specify appropriate settings on the command line for creating the Linux group and user for PostgreSQL. For example:

```
groupadd -g 1000 postgres
useradd -c "PostgreSQL Admin" -m -g postgres -u 1000 -s /bin/bash
postgres
```

3. For PostgreSQL installation/configuration/initialization, follow instructions from http://wiki.openscg.com/index.php/Postgres_9.1_RPM

> **NOTE:** The RPM install script prompts for "Specify *superuser* password [*password*]:"
> This is NOT the password for superuser ROOT -- it is what you want to set as the password for PostgreSQL DATABASE superuser. This password will be required to connect to the PostgreSQL server. Provide preferred password or accept the default: "*password*".

4. As described on the above website, the main two commands for installation and configuration are:

```
rpm -ihv ./postgres-9.1.1-1.x86_64.openscg.rpm
/etc/init.d/postgres-9.1-openscg start
```

5. Most of the /opt/postgres subdirectories (e.g. libraries, binaries, etc.) remain under *root* ownership, to protect against accidental change/deletion, but the data subdirectories are owned by *postgres* user.

6. Use the environment definitions in /opt/postgres/9.1/pg91-openscg.env to customize the postgres user's startup files (e.g. add env settings to ~postgres/.bash_profile).

7. Auto startup script is added to /etc/init.d/postgres-9.1-openscg and all /etc/rc*.d directories. If preferred, rename the startup script and links to simply "postgres". For example:

```
ln -s /opt/postgres/9.1/bin/postgres-9.1-openscg
/etc/init.d/postgres
ln -s /etc/init.d/postgres /etc/rc0.d/K15postgres
ln -s /etc/init.d/postgres /etc/rc1.d/K15postgres
ln -s /etc/init.d/postgres /etc/rc2.d/S85postgres
ln -s /etc/init.d/postgres /etc/rc3.d/S85postgres
ln -s /etc/init.d/postgres /etc/rc4.d/S85postgres
ln -s /etc/init.d/postgres /etc/rc5.d/S85postgres
ln -s /etc/init.d/postgres /etc/rc6.d/K15postgres
```

8. Confirm that the hba (host based access) config file, /opt/postgres/9.1/data/pg_hba.conf, has picked the correct host and local IP addresses, and IP Mask chosen for maximum protection. For example:

```
# IPv4 local connections:
host  all   all   192.168.223.0/24 md5
host  all   all   192.168.221.0/24   md5
```

2.3.2.2. Create PostgreSQL Table for NETPortal

For database administration, DbVisualizer, Squirrel or pgAdmin3 (rev 14.1) can be used. pgAdmin3 can be found at http://www.pgadmin.org/download/

1. Connect to the server, using pgAdmin3, and "Add a new connection to a server". Fill in Name field, Unix host address (e.g. *postgresqldb.tieroneoss.com)*, Port defaults to *5432*, Maintenance DB as *postgres* , Username as *postgres*, and Password as added during installation. Click "OK". In the "Object browser" to the left, right-click the server and select "Connect" to connect to the server.

2. Create a new login role or user. Note that: A unique login role is not required for each database or tablespace. One login role can have multiple databases and tablespaces.

   Right-click "Login Roles" under the server, and select "New Login Role...". In "Properties" tab, fill in appropriate information for Role name (e.g. tnp). Select "Definition" tab and enter Password twice. Under the "Role privileges" tab, select appropriate options:

> **NOTE:** To run database "Changelog" scripts, you need to select at least "Superuser" (Postgres superuser) and "Can create database objects". After running the database creation scripts (see section 2.3.2 below), the Superuser privilege may be removed, but needs to be re-configured whenever a new NETPortal release is installed.

When finished click "OK".

3. To create a new tablespace, use PuTTY, or other XTerm program to connect to the server running PostgreSQL. Use user *postgres* and password as configured on installation. Create directory /home/postgres/tablespaces, if not already created. Create new folder with the name of the tablespace.

   `$ mkdir <dbtablespace>` (replace `<dbtablespace>` with appropriate value).

   When finished exit the xterm window. Through pgAdmin3, right-click on "Tablespaces" under the connected server, and select "New Tablespace...". In "Properties" tab, fill in Name, and select appropriate value for Owner.

   NOTE: The tablespace Name should **not** have upper-case letters (e.g. instead of "TNP_8180", use "tnp_8180"). A unique tablespace is not required for each database or login role. One tablespace can be used by multiple databases and login roles.

   Set Location, under "Definition" tab, as `/home/postgres/tablespaces/<dbtablespace>` (replace `<dbtablespace>` with appropriate value). When finished, click "OK".

4. To create a new database, right-click "Databases", and select "New Database...". In "Properties" tab, fill in Name, and select appropriate values in Owner:
   Under "Definition" tab, choose to use:

   - "Encoding" **UTF8**,
   - "Template" **template0** and
   - Select preferred "Tablespace", created during last step, from drop-down list.

   When finished, click "OK".

   Multiple connections to the same server can be made and saved, as long as the server connection name is unique (the top blank when creating a new server connection). This may be helpful if you want to connect to the server with different login roles having different privileges.

5. Execute the NETPortal database update script to add required tables to the created database table:

```
$ cd <webserver_homeDir>/tnp-config/<TNP_ServerPort>/database_scripts
$ ./databaseUpdate.sh
```

You will be prompted to enter database parameters. The following is the console output of the script:

```
Do you want to continue? (y/n)
y
Please enter the database type for this installation (oracle,
postgres):
postgres
Please enter database user name:
<dbusername>
Please enter database user password:
<dbpassword>
Please enter the database server host name or ip:
<localhost/IPaddr>
Please enter the database server port(5432):
5432
Please enter the tablespace name for data:
<dbtablespace>
Please enter the tablespace name for indexes:
<dbtablespace>
Please enter the LDAP authentication scheme for this installation
(openldap, activedirectory): openldap
Database context: openldap_tierone,no_provisioner,tierone
classpath: /home/jboss/tnp-config/TNP_8011/lib/liquibase-
1.9.5.1.jar:/home/jboss/tnp-config/TNP_8011/lib/postgresql-9. 1-
901.jdbc4.jar

Starting database update to
jdbc:postgresql://<IPAddr>:5432:tnp_8011 ...
Updating Change Set Checksums ...
Migration successful
Updating Application Schema ...
Migration successful
Updating Application Privileges ...
Migration successful
```

> **NOTE:** Since all required NETPortal database tables are being created by these scripts, the total running time might be close to 2-4 minutes. Confirm that *three* "Migration successful" messages are returned from the update script as it runs. If any one step is unsuccessful, the others will not run – contact TIERONE Support for assistance with any error messages on installation/configuration.

2.3.3. NETPortal Application Configuration

To integrate the application configuration directory with the new database, the NETPortal configuration table can be manually updated before NETPortal is started up, using database access with the following steps (directory values shown in <> below should be replaced with actual values):

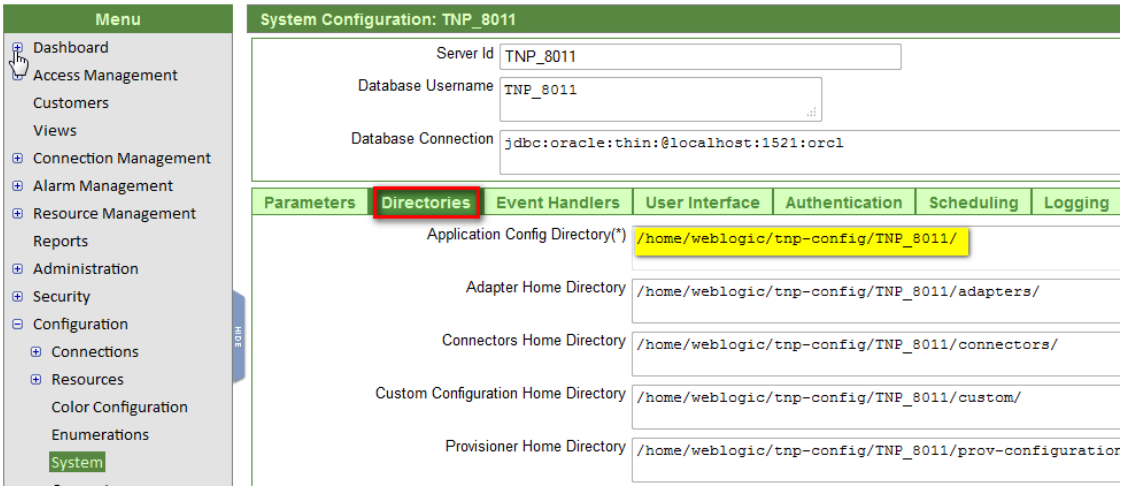
```
update <dbName>.ensemble_config
set value = '<webserver_homeDir>/tnp-config/<TNP_ServerPort>'
where name like '%ApplicationConfigDirectory%' ;

commit;
```

Or, after NETPortal has been started up (use WebLogic or JBoss to start and stop NETPortal), this configuration can be made by a 'NETPortal Administrator' user via the NETPortal GUI:

Configuration → System → Directories tab

- 'Application Config Directory' field



Save the new value by clicking on the **Save** button and then click on the **Refresh** button in the top right corner of the screen to update the remaining pre-configured fields. A server restart will be required for the changes to take effect.

2.4. Configuring NETPortal on a Web Server

2.4.1. WebLogic Configuration and Startup

The WebLogic configuration script will create the new domain, admin server and NETPortal managed server, install NETPortal web apps and create default NETPortal admin user account.

2.4.1.1. Prerequisites

- WebLogic user is created and WebLogic 10.3.4 is installed.
- Node Manager is running.

1. Log on as **weblogic** user on Unix-based server.

2. Set WebLogic Environment Variables to run the WebLogic script:

   ```
   $ cd $WL_HOME/server/bin
   ```
   Note: Assuming that WL_HOME is already set.

   ```
   $ . ./setWLSEnv.sh
   ```
   Note: There are 2 dots in this command, separated by a space.

3. Execute the 'Configure WebLogic' script:

   ```
   $ cd <weblogic_homeDir>/tnp-config/<TNP_ServerPort>/bin
   $ java weblogic.WLST configureWL.py
   ```

   You will be prompted to enter WebLogic and NETPortal configuration parameters.

   NOTE: The values entered in the script below are *suggested*.

   The following is the console output of the script:

```
Initializing WebLogic Scripting Tool (WLST) ...

Welcome to WebLogic Server Administration Scripting Shell

Type help() for help on available commands
Please Enter Admin ServerName: AdminServer
Please enter Admin listen Port: 8001
Please Enter Managed Server Name: TNP_8011
Please Enter Managed Server Listening Port: 8011
```

```
Please Enter the Database Server Host Name or IP:  localhost
Please Enter The Database Server Port:  1521
Please Enter the Oracle Database SID:  orcl
Please Enter DB User: TNP_8011
Please Enter DB Pwd: TNP_8011
Please Enter WL Admin User Name: tnptest
Please Enter WL Admin Password:  weblogic1
Please Enter WL Domain Path:
<weblogic_homeDir>/Oracle/Middleware/user_projects/domains
Please Enter Domain Name: tnptest
Please Enter NETPortal admin User Password:  admin1001
Please Enter NETPortal App Home Directory:
<weblogic_homeDir>/tnp-config/TNP_8011
Please Enter NETPortal License File Name: tnp.lic
```

… the end of the console output will look like the following:

```
Disconnected from weblogic server: AdminServer
Disconnected from weblogic server:
Exiting WebLogic Scripting Tool.
```

4. Start the WebLogic Admin Server.

```
$ cd <weblogic_homeDir>/Oracle/Middleware/user_projects/domains/tnptest
```

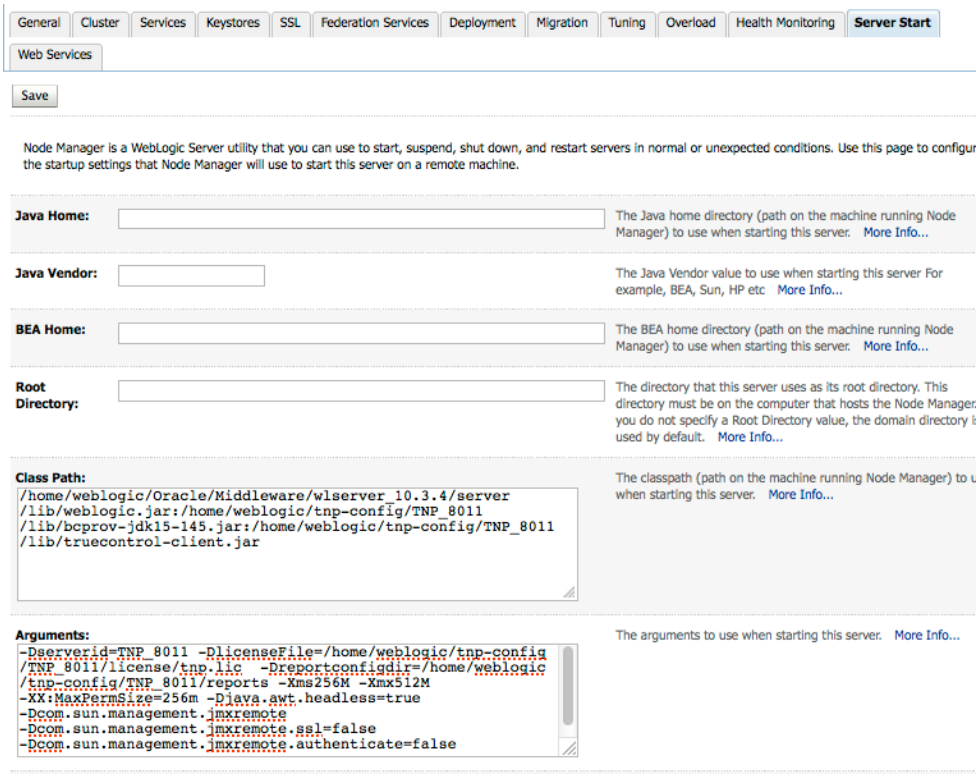
> **NOTE:** This is the newly created `domains` directory.

```
$ . ./startWeblogic.sh &
```

5. After Admin Servers is started, log into the WebLogic Admin Console in a browser.

Use the WebLogic Admin User Name and Password supplied in step 3.

6. Under 'Domain Structure,' select **Environment → Servers → TNP_8011 → Server Start**.



7. In order to start the WebLogic Managed Server for NETPoral via script, the Class Path and Arguments must be added to the **setDomainEnv.sh** script.

```
$ cd <weblogic_homedir>/Oracle/Middleware/user_projects/domains/tnptest/bin
```

Open the **setDomainEnv.sh** file for editing.

8. Copy the Class Path parameters from the WebLogic Console to the end of **setDomainEnv.sh** file. Add the CLASSPATH environment variable syntax around the text pasted. It will look like the text below:

```
CLASSPATH="$CLASSPATH:<weblogic_homeDir>/Oracle/Middleware/wlserver_10.
3.4/server/lib/weblogic.jar:<weblogic_homeDir>/tnp-
config/<TNP_ServerPort>/lib/bcprov-jdk15-
145.jar:<weblogic_homeDir>/tnp-config/<TNP_ServerPort>/lib/truecontrol-
client.jar"
export CLASSPATH
```

Note the pair of double quotes.

9. Copy the Arguments parameters from the WebLogic Console to the end of **setDomainEnv.sh** file. Add the JAVA_OPTIONS environment variable syntax around the text pasted. It will look like the text below:

```
JAVA_OPTIONS="${JAVA_OPTIONS} -Dserverid=<TNP_ServerPort>
-DlicenseFile=<weblogic_homeDir>/tnp-
config/<TNP_ServerPort>/license/<tnplicense>
-Dreportconfigdir=<weblogic_homeDir>/tnp-
config/<TNP_ServerPort>/reports -Xms256M -Xmx512M
-XX:MaxPermSize=256m -Djava.awt.headless=true -
Dcom.sun.management.jmxremote
-Dcom.sun.management.jmxremote.ssl=false -
Dcom.sun.management.jmxremote.authenticate=false"
export JAVA_OPTIONS
```

Note the pair of double quotes.

10. Save the **setDomainEvn.sh** file.

11. You can now start the NETPortal Managed Server from the WebLogic Console or from the **startManagedWeblogic.sh** script.

12. To log into NETPortal, open a browser and enter:

```
http://localhost:<TNP_ServerPort>/tnp
```

2.4.2. JBoss Configuration and Startup

2.4.2.1. Prerequisites

- JBoss needs to be installed. The NETPortal supported version of the JBoss web server is RedHat JBoss EAP 5.1.

JBoss Installation

Note that if downloading the "Binary Installer" version (.jar), it opens a simple GUI to help with installation which might encounter display errors, depending on terminal settings, but it is useable.

To install via the command line, log in on the Unix-based server as the superuser, create a JBoss user (example command given below) and unzip to the application directory of your choice:

```
$ /bin/su -
# useradd -c "JBoss user" -d /home/jboss -g staff -m -s /bin/csh
jboss
# mkdir /opt/jboss-eap-5.1
# chown jboss: /opt/jboss-eap-5.1
# exit
$ cd /opt
$ unzip jboss-eap-5.1.1.zip
```

Refer to the Red Hat Release Notes for additional information related to the release, as required.

JBoss Configuration and NETPortal Startup

Set up the **jboss** user shell environment variables for the JBoss, Java and NETPortal installation directories under appropriate startup scripts (e.g. .login, .cshrc, .bashrc, .profile, etc.). Adjust these example paths as per customized configuration (values shown in <> in the scripts below should be replaced with actual values):

Shell / Bash:

```
export  JBOSS_HOME=/opt/jboss-eap-5.1/jboss-as
export  TNP_HOME=/home/netportal/app/tnp-<version#>-<build#>
export JAVA_HOME=/usr/java/jdk1.6.0_31
export PATH=$JAVA_HOME/bin:$TNP_HOME/bin:$PATH
```

C-Shell / T-Csh:

```
setenv  JBOSS_HOME=/opt/jboss-eap-5.1/jboss-as
setenv  TNP_HOME=/home/netportal/app/tnp-<version#>-<build#>
setenv JAVA_HOME=/usr/java/jdk1.6.0_31
setenv PATH=".:$JAVA_HOME/bin:$HOME/bin:$TNP_HOME/bin:$PATH)
```

All shells:

```
set path=( $JBOSS_HOME/bin $TNP_HOME/bin ~/bin $path )
```

JBoss can be configured for servers on 4 preset ports, where the "default" JBoss server port is 8080 and other servers use a port number that is "100" off of the "default" -- e.g. 8180, 8280, 8380. These instructions will be for using port 8180, assuming **jboss** user is logged in.

If JBoss server files have been provided on a custom disk, copy them over to `$JBOSS_HOME/servers/<TNP_ServerPort>`

Otherwise, follow these configuration steps:

1. Copy the default server configuration to the `<TNP_ServerPort>` directory.

```
$ cp  -R  $JBOSS_HOME/server/default/
$JBOSS_HOME/server/<TNP_ServerPort>/
$ cd   $JBOSS_HOME/server/<TNP_ServerPort>/
```

2. Copy required libraries from NETPortal installation to JBOSS.

```
$  cp -p $TNP_HOME/lib/postgresql-9.1-901.jdbc4.jar  lib/
$  cp -p $TNP_HOME/lib/bcprov-jdk15-145.jar  lib/
$  cp -p $TNP_HOME/lib/xmlbeans-2.3.0.jar  lib/
```

3. Under the JBoss installation directory, in the `$JBOSS_HOME/server/<TNP_ServerPort>/conf` folder, edit the file login-config.xml, add the TNPLDAP application policy, as per this example, adjusting LDAP server information. For example:

```
$ vi $JBOSS_HOME/server/TNP_8180/conf/login-config.xml
```

Configure the LDAP host and the roleFilter, "java.naming.provider.url" , “bindDN”, “bindCredential”, “baseCtxDN”, “rolesCtxDN”

```
<policy>
...
<application-policy name="TNPLDAP">
  <authentication>
   <login-module flag="required" code="org.jboss.security.auth.spi.LdapExtLoginModule">
    <module-option
name="java.naming.factory.initial">com.sun.jndi.ldap.LdapCtxFactory</module-option>
    <module-option name="java.naming.provider.url">ldap://<LDAP_Host>:389</module-
option>
    <module-option name="java.naming.security.authentication">simple</module-option>
    <module-option name="bindDN">cn=admin,dc=<LHost>,dc=com</module-option>
    <module-option name="bindCredential">pswd</module-option>
    <module-option name="baseCtxDN">ou=LDAPusers,dc=<LHost>,dc=com</module-
option>
    <module-option name="baseFilter">(cn={0})</module-option>
    <module-option name="rolesCtxDN">ou=LDAPgroups,dc=<LHost>,dc=com</module-
option>
    <module-option name="roleFilter">(member={1})</module-option>
    <module-option name="roleAttributeIsDN">true</module-option>
    <module-option name="roleNameAttributeID">cn</module-option>
   </login-module>
  </authentication>
 </application-policy>
...
</policy>
```

4. Edit `$JBOSS_HOME/server/<TNP_ServerPort>/conf/standardjbosscmp-jdbc.xml` and customize the Default DataStore to be TNP.database. For example:

Change FROM:

```
<datasource>java:/DefaultDS</datasource>
```

TO:

```
<datasource>java:/TNP.database</datasource>
```

5. Starting up any of the servers requires that the host server ID is specified in the startup arguments and that the license file is configured. In addition, it might be preferred to update the time zone, since the default JBoss time zone is set to "user.timezone=**Etc/UTC**". For this purpose, make the following modifications in **$JBOSS_HOME/bin/run.conf**, replacing JBOSS_HOST, proper time zone and license file path:

```
JAVA_OPTS="-Xms512m -Xmx1024m -Xss256K -XX:MaxPermSize=256m \
-Dserverid=JBOSS_HOST \
 -DlicenseFile=$TNP_HOME/license/<tnplicense> \
-Dorg.jboss.resolver.warning=true  \
-Dsun.rmi.dgc.client.gcInterval=3600000  \
-Dsun.rmi.dgc.server.gcInterval=3600000" \
-Duser.timezone=America/Toronto
```

6. Copy over the deployment war files

```
cp -p $TNP_HOME/distrib/tnp.war $JBOSS_HOME/server/TNP_8180/deploy/

cp -p $TNP_HOME/distrib/tnp-ws.war $JBOSS_HOME/server/TNP_8180/deploy/
```

7. Create the datasource file under `$JBOSS_HOME/server/<TNP_ServerPort>/deploy` folder, file name **TNP.database-ds.xml**, using the following example, customized to user specifications.

   The <connection-url> must be customized to point to the appropriate *server*, *port* and *database*. The <user-name> and <password> must be customized to the appropriate database user name and password.

```
<?xml version="1.0" encoding="UTF-8" ?>
 <datasources>
 <local-tx-datasource>
   <jndi-name>TNP.database</jndi-name>
   <connection-
url>jdbc:postgresql://<postgresHost>:5432/<tnp_8180></connection-url>
   <driver-class>org.postgresql.Driver</driver-class>
   <user-name><dbusername></user-name>
   <password><dbpassword></password>
   <new-connection-sql>select 1</new-connection-sql>
   <check-valid-connection-sql>select 1</check-valid-connection-sql>
```

```
    <metadata>
        <type-mapping>PostgreSQL</type-mapping>
    </metadata>
  </local-tx-datasource>
  </datasources>
```

8. Update $JBOSS_HOME/server/<TNP_ServerPort>/conf/**standardjbosscmp-jdbc.xml** to include the jdbc definition, as defined in the <jndi-name> of configured datasource name, above:

```
<jbosscmp-jdbc>
    <defaults>
        <datasource>java:/TNP.database</datasource>
```

9. For starting and stopping the JBoss server, it is recommended to write startup and shutdown scripts.
   To start JBoss, it is best to change directory to the JBoss user home directory (to collect output logs in one directory), and startup with the "nohup" command, to keep the server running after jboss user logoff.

   To start the server instance on a non-default (8080) port, add an extra parameter to startup command line. For instance, for port 8180, add

```
 -Djboss.service.binding.set="ports-01"
```

   Create startup scripts under $JBOSS_HOME/bin, filename startTNP.sh, as follows, configuring IP Address for configured ports:

```
#!/bin/sh
JBOSS_HOME=/opt/jboss-eap-5.1/jboss-as
export JBOSS_HOME
JAVA_HOME=/usr/java/latest
export JAVA_HOME

case "$1" in
*8180*)
        PORTNAME=ports-01
        JB_PORT=8180
        JB_HOME=$HOME/tnp-config/TNP_8180
    ;;
*)
        PORTNAME="default"
        JB_PORT="default"
        JB_HOME=$HOME
esac

PS_RESULT=`ps -ef | grep ${PORTNAME} | grep -v "grep ${PORTNAME}" `
if [ -z "${PS_RESULT}" ]; then
```

```
        echo Starting Server port $JB_PORT logging from $JB_HOME
else
        echo "Server for $JB_PORT is already running"
        exit 1
fi

cd $JB_HOME
if [ "${PORTNAME}" = "default" ]; then
        mv  $HOME/logs/TNP_Admin_Server.log  $HOME/logs/old/
        nohup $JBOSS_HOME/bin/run.sh -c default -b 192.168.221.24 >
$HOME/logs/TNP_Admin_Server.log &
else
        mv  $HOME/logs/TNP_${JB_PORT}_Server.log  $HOME/logs/old/
        nohup $JBOSS_HOME/bin/run.sh -c TNP_${JB_PORT} -b 192.168.221.24 \
-Djboss.service.binding.set="${PORTNAME}" >
$HOME/logs/TNP_${JB_PORT}_Server.log &
fi
```

Make the file executable, and then to start the TNP server:

```
$ startTNP.sh 8180
```

To stop the server, create the matching stop server script, under `$JBOSS_HOME/bin`, filename stopTNP.sh, as follows, customizing the IP Address of server and installed Administration user id and password:

```
#!/bin/sh
JBOSS_HOME=/opt/jboss-eap-5.1/jboss-as
export JBOSS_HOME
JAVA_HOME=/usr/java/latest
export JAVA_HOME

case "$1" in
*8180)
        STOP_PORT=1199
        J_PORT=8180
    ;;
*)
        STOP_PORT=1099
        J_PORT= »default »
esac

echo Sending Stop to $J_PORT Server using STOP_PORT $STOP_PORT
$JBOSS_HOME/bin/shutdown.sh -S -s 192.168.221.24:${STOP_PORT} -u admin -p admin
```

Make the script executable. Then to stop the Jboss server, for configured NETPortal port 8180:

```
$ stopTNP.sh 8180
```

The output from the above command will resemble:

```
Sending Stop to TER_8180 Server using STOP_PORT 1199
Shutdown message has been posted to the server.
Server shutdown may take a while - check log files for completion
```

Wait for the JBoss server to stop – this can be done by watching the log files and waiting for the shutdown message:

```
$ tail -f $TNP_HOME/logs/tnp.log
```

The output from the above command will resemble:

```
... com.tieroneoss.tnp.connector.TR1ConnectorInstance - Shutdown all
connectors.
```

3. NETPortal Upgrade

3.1. Install NETPortal Files

1. Log into netportal user account on the application server.

2. Use a file-transfer or copy command to transfer the new distribution file to the `<netportal_homeDir>/app` directory.

3. If the new release is in a compressed format, use appropriate tools to uncompress and un-archive the release files. For a release in a Unix 'tar' format, that has been compressed with GNU tools, unzip and un-tar the file in the current directory. The following commands can be run (using an example release name):

```
$ gunzip tnp-9.0.0-1500.tar.gz
$ tar xvf tnp-9.0.0-1500.tar

$ ls
```

The resulting directory looks like:

`tnp-<version#>-<build#>`

4. Backup the database, using Oracle GUI for Oracle database, or, for PostgreSQL, log in as **postgres** user on server where PostgreSQL is running and dump table to a file, as follows:

```
pg_dump tnp_ServerPort > ~postgres/tnp_<MonthDay>_<ReleaseNum>.sql
```

5. Log off and log back in as the web server user (weblogic or jboss). NETPortal will be installed under WebLogic or JBoss, from `<netportal_homeDir>/app/tnp-<version#>-<build#>` directory.

```
$ cd <webserver_homeDir>/tnp-config/<TNP_ServerPort>
```

6. Backup the current NETPortal installation, replacing `<Rel#>` and `<MonthDay>` with appropriate values.

```
$ tar cf ../TNP_<Rel#>_<MonthDay>.tar ./
$ gzip  ../TNP_<Rel#>_<MonthDay>.tar
```

7. If this is a JBoss webserver, stop the web server instance.

```
$ stopTNP.sh 8180
```

Check the log files that Shutdown is complete:

```
$ tail -f $TNP_HOME/logs/tnp.log
```

The output from the above command will resemble:

... com.tieroneoss.tnp.connector.TR1ConnectorInstance - **Shutdown all connectors.**

8. Delete the release directory link to the old NETPortal installation:

   `rm release`

9. Create a link to the new NETPortal installation directories and all their contents:

   `$ ln -s <netportal_homeDir>/app/tnp-<version#>-<build#> release`

10. Create new links to the release directory:

    `$ ln -sf release/* ./`

> **NOTE:** You may see "cannot overwrite directory" error messages, but the errors can be ignored for these three directories: `adapter`, `reports` and `eventhandling`.

11. The web server user needs read-write permissions to the `adapters` directory. Copy all adapters from `release` directory and overwrite existing adapters:

    `$ cp -rp release/adapters/* adapters`

12. The web server user needs read-write permissions to the `reports` directory. Copy all reports from `release` directory.

> **NOTE:** If you have any reports that you do not want overwritten, rename them before executing this command.

```
$ cp -rp release/reports/* reports
```

13. To utilize the Event Handling scripts (for customized name generation, for example), the web server user needs read-write permission to the `eventhandling` directory. Copy all Event Handlers from `release` directory, and then copy over any custom handlers.

> **NOTE:** If you have made changes to existing eventhandling scripts and want to keep them, do not execute this step, but copy over any non-custom handlers manually from `release/eventhandling`.

```
$ cp -rp release/eventhandling/* eventhandling
```

14. If there is a new license file, copy the received license file <tnplicense> to the license directory.

15. Execute the database update script to add required tables to database:

```
$ cd <webserver_homeDir>/tnp-config/<TNP_ServerPort>/database_scripts
$ ./databaseUpdate.sh
```

You will be prompted to enter database parameters. The following is the console output of the script, for an Oracle deployment:

```
Do you want to continue? (y/n) y
Please enter the database type for this installation (oracle,
postgres): oracle
Please enter database user name: <dbusername>
Please enter database user password: <dbpassword>
Please enter the database server host name or ip: <localhost>
Please enter the database server port(1521): 1521
Please enter the Oracle database SID: <SID>
Please enter the tablespace name for data: <dbtablespace>
Please enter the tablespace name for indexes: <dbtablespace>
Please enter the LDAP authentication scheme for this installation
(openldap, activedirectory): openldap
Database context: openldap_tierone,no_provisioner,tierone
classpath: ../lib/liquibase-1.9.5.1.jar:../lib/ojdbc6-
11.0.jar:../lib/orai18n-11.0.jar
Clear All Checksums For Update...
Starting database update to jdbc:oracle:thin:@localhost:1521:orcl
...
Updating Change Set Checksums ...
Migration successful
Updating Application Schema ...
Migration successful
Updating Application Privileges ...
Migration successful
```

NOTE: Since all required NETPortal database tables are being created by these scripts, the total running time might be close to 2-4 minutes. Confirm that *three* "Migration successful" messages are returned from the update script as it runs. If any one step is unsuccessful, the others will not run – contact TIERONE Support for assistance with any error messages on installation/configuration.

3.2. Update the Deployed Applications

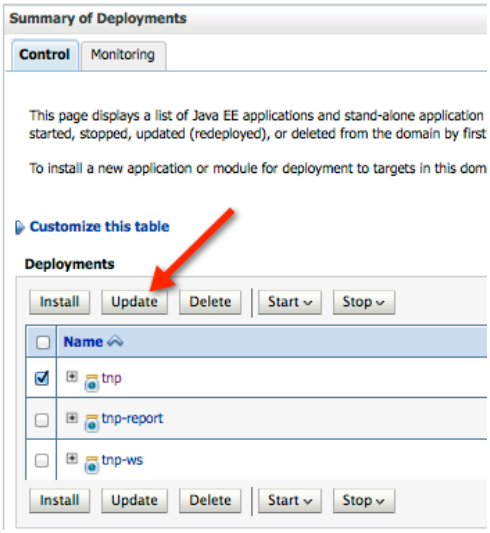
3.2.1. WebLogic

The previous NETPortal steps changed the link to the new NETPortal war files, so now the application deployments must be updated.

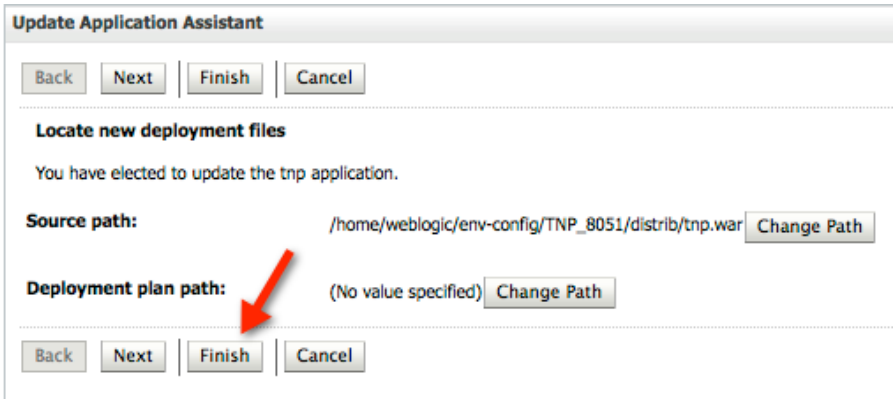
The WebLogic Admin Server and Node Manger must be running to execute the following steps.

1. Log into the WebLogic Admin Console.

2. Under 'Domain Structure' select **Deployments**. Click the check box beside the first web-service application and click the **Update** button.



3. On the next screen, click the **Finish** button to complete the update process.



4. Repeat Steps 2 and 3 for the other two web services.

3.2.2. JBoss

1. Log in as **jboss** user and copy over the deployment war files:

```
$ cp -p $TNP_HOME/distrib/tnp.war
$JBOSS_HOME/server/<TNP_serverPort>/deploy/

$ cp -p $TNP_HOME/distrib/tnp-ws.war
$JBOSS_HOME/server/<TNP_serverPort>/deploy/
```

2. Start the JBoss environment to pick up the war file:

```
$ startTNP.sh 8180
```

Check the log files for errors and complete Startup messages.