

Java CAPS 6 Exercise

Application Configuration

Global Technical Enablement

Sun Project :	Java CAPS 6 Exercise
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Application Configuration

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Application Configuration**0. Document Control****0.1. Revision History**

Version	Author	Review	Reason For Issue	Date
0.1	Dao Tien Tran		Initial version	10 September 2008

0.2. Access Control

Section	Access Restrictions
All	None

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1. Exercise Overview

This exercise will provide details on creating Environment Objects that can be used to modify environment properties, such as, target directory, target filename, username, and password, outside of a deployed EAR or Service Assembly. The exercise uses a simple file to file scenario to help demonstrate how deployments can be maintained through various command line interfaces (CLI), such as, project import or export, build, deploy, create and modify Environment Objects.

The high level steps of this exercise are:

1. Through CLI, import a project, create a deployment profile, and build the application.
2. Through CLI, create and modify the Environment Objects

Artifacts included with the exercise instructions (and can be found referenced in section 1.4) are:

1. SimpleFile2File.zip – NetBeans Repository project export

Approximate Time to Complete Exercise: 0.5 hours

1.1. Environment Requirements

For a complete list of supported environment configurations, go to <http://developers.sun.com/docs/javacaps/installing/jcapsinstall.jcapsinstall.html>

- OS: Solaris, Linux, Mac OS, Windows
- RAM: 1 GB (2 GB+ preferred)
- Disk: 6 GB
- CPU: 1.5 GHz+
- Writable directory
- Networking: None needed

Although multiple operating systems are supported in Java CAPS, this tutorial assumes the student is using a Windows XP environment; therefore, screenshots will vary for other platforms being used.

1.2. Prerequisites

1. You must have completed the installation of an internet browser such as Mozilla Firefox 2.0 or above or Internet Explorer 6.0 or 7.0
2. You must have completed the installation of JDK 5 update 14 or above or JDK 6 update 4 or above
3. You must have completed the **complete** installation of Java CAPS Release 6 that includes:
 - a) NetBeans IDE
 - b) Sun GlassFish Enterprise Server
 - c) Sun Java MQ
 - d) Sun JMS IQ Manager
 - e) Java CAPS Enterprise Manager
 - f) Java CAPS Repository
 - g) Derby Java DB
 - h) UDDI Server
 - i) Core Products: ESB, BPM, Composite Page Designer, Data Integrator
 - j) JBI Components: Java EE SE, BPEL SE, ETL SE, XSLT SE, SQL SE, HTTP BC, File BC, JMS BC, Encoders
 - k) Repository-Based Adapters: Batch/FTP, DB2 Connect, eMail, File, HTTP(s), JDBC/ODBC, Oracle, SQL Server, Sybase
 - l) JCA Adapters: Batch/FTP, File, JDBC, Oracle

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3 minute screencast of Installation Process –
<http://developers.sun.com/docs/javacaps/tutorials/screencasts/InstallingCAPS6/launch.html>

1.3. Notes

None.

1.4. References

1.4.1. Sun Developer Network (SDN) (<http://developers.sun.com>)

1. <http://developers.sun.com/docs/javacaps/installing/jcapsinstall.jcapsinstall.html> – Installing Java CAPS
2. <http://developers.sun.com/docs/javacaps/tutorials/screencasts/InstallingCAPS6/launch.html> – 3 minute screencast of Java CAPS 6 installation process
3. http://developers.sun.com/docs/javacaps/deploying/jcapsdeploy.dply_building-app_t.html – Building an Application File

1.4.2. Java CAPS Grok Wiki (<http://wikis.sun.com/display/JavaCAPS/Grok+Java+CAPS>)

1. <http://wikis.sun.com/download/attachments/31395447/JavaCAPS+6+Exercise+-+Installation+Basics.pdf> – Installation Basics for Training Exercises
2. <http://wikis.sun.com/display/JavaCAPS/Application+Configuration> – Application Configuration Approaches CAPS 5.1 and 6

1.4.3. Open ESB Wiki (<https://open-esb.dev.java.net/>)

1. <http://wiki.open-esb.java.net/Wiki.jsp?page=HTTPBindingComponentUserGuide> – HTTP BC Application Configuration
2. <http://wiki.open-esb.java.net/Wiki.jsp?page=Application%20Configuration> – HTTP BC Application Configuration
3. <https://open-esb.dev.java.net/Components.html> – All OpenESB Components Home Page

1.4.4. Blogs

1. http://blogs.sun.com/toxophily/entry/java_caps_tip_application_reconfiguration – Application Reconfiguration

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2. Install Additional Components

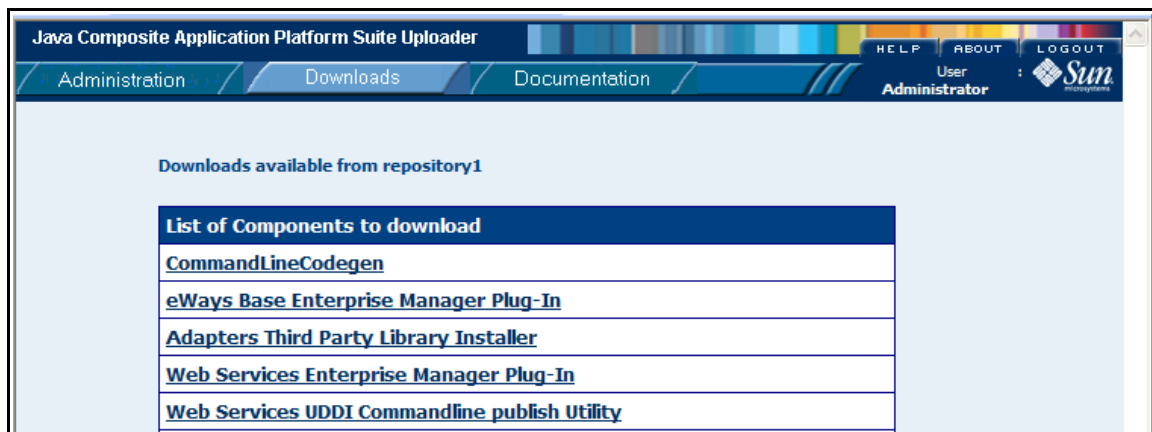
2.1. Install CommandLineCodegen

The *CommandLineCodegen* feature allows the developer to build (codegen) an application from the command line.

1. Start the Repository from the `start_repository` shortcut from the `<JavaCAPS6_root>` directory.



2. In the Java CAPS Uploader (eg., <http://localhost:12000>), select the **Downloads** tab.
3. Download the *CommandLineCodegen* component to the `<JavaCAPS_root>\repository\repository\util` directory.



4. Unzip the `commandlinecodegen.zip` file.

2.2. Set Environment Variables

To set up your system to use the *CommandLineCodegen*, open a command prompt and set environment variables in the same directory where *CommandLineCodegen* was installed.

1. Set the `JAVA_HOME` environmental variable on your computer to the location where JDK version 1.5 is installed, for example:

```
set JAVA_HOME=c:\Sun\Java\jdk1.5.0_14
```
2. Set the `ANT_HOME` environmental variable on your computer to the location where Ant is installed (a version has been installed with the Java CAPS installer), for example:

```
set ANT_HOME=c:\JavaCAPS6\install\ant
```

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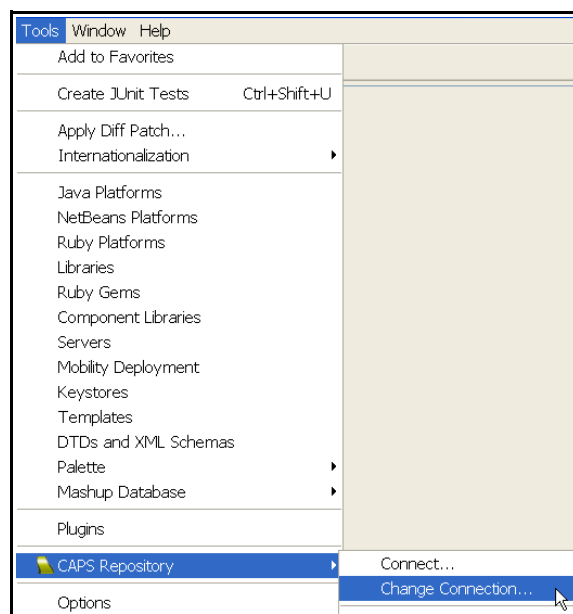
3. Connect to the Repository

By default, the file system location for the Repository is under the OS user directory, for example, `C:\Document and Settings\. In our case, we want to change the default Project Location to the MyTutorial directory to keep all of our Repository based on non-Repository based exercises in one location.`

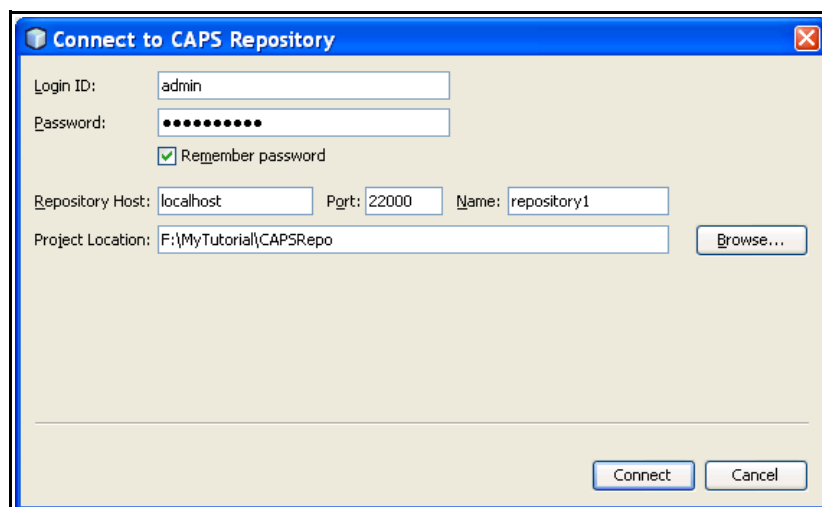
1. Start the Repository from the `start_repository` shortcut from the `<JavaCAPS6_root>` directory.



2. In NetBeans, from the toolbar, select *Tools / CAPS Repository / Change Connection*



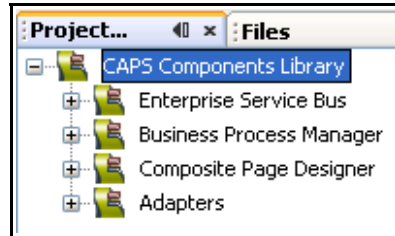
3. Modify the **Project Location** to `C:\MyTutorial\CAPSRepo` and click **Connect**



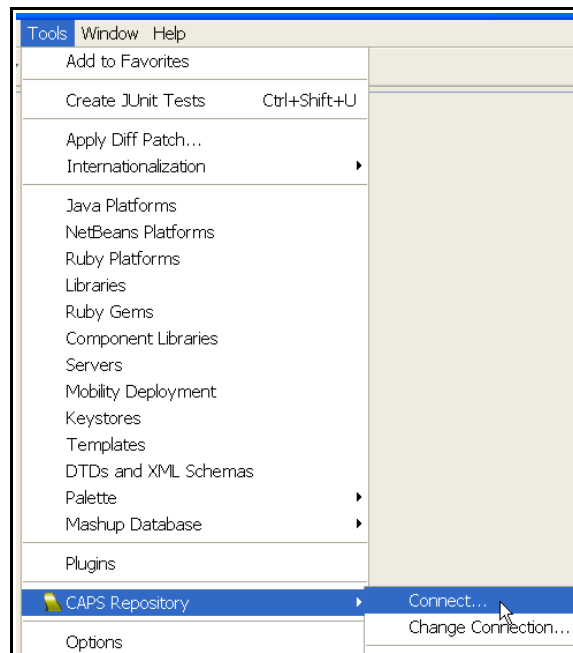
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- After a few seconds, the Repository is connected, NetBeans automatically refreshes, and displays the CAPS Component Library under the **Projects** tab.

Note: If the CAPS Components Library does not appear, then try restarting NetBeans.



- After the initial setup of changing the default **Project Location**, and if you are not already connected to the Repository, you will connect to the Repository from the toolbar and selecting *Tools / CAPS Repository / Connect*



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4. Create the Repository Project

In this section we will import and deploy a simple repository-based project that uses the File eWay. The project will take input from a file located at `c:\temp\input*.txt` and write it to a file located at `c:\temp\output%d.dat`.

4.1. Import the Project

1. Obtain the `SimpleFile2File.zip` file containing the repository project from your instructor
2. From a command prompt, use the `importProject` utility command from the repository (located at `<JavaCAPS_root>\repository\repository\util`) to import the project:

```
importProject <user> <password> "<branch>" <export.zip> "<root path>" <overwrite option> <duplicate list>
```

for instance,

```
importProject admin adminadmin "" SimpleFile2File.zip "" KeepAll ""
```

Note: Be sure to use the same user credentials for command-line utilities that are used to connect to the repository from NetBeans. The *Administrator* and *admin* users are distinctly two different users; thus, will take affect for the version control and ACL features.

```
F:\MyTutorial>f:\javacaps6\repository\repository\util\importProject admin adminadmin "" SimpleFile2File.zip "" KeepAll ""
URL:          http://localhost:22000/repository1
User Name:    admin
Branch Name   Top level
Root Project: SimpleFile2File.zip
Import from file:
Keep/Replace Mode: KeepAll

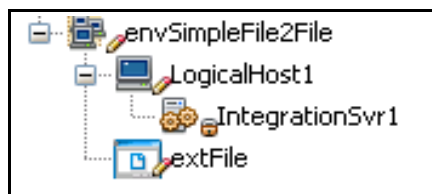
Total time to load resource is : 2578
Connected to http://localhost:22000/repository1
Imported successfully.
```

3. Refresh the repository by selecting *Tools / CAPS Repository / Refresh All* from the NetBeans toolbar
4. Open the *SimpleFile2File* project from the NetBeans toolbar *File / Open Project*. Verify that it is listed in the **Projects** tab in NetBeans.
5. The project will also include a CAPS Environment called *envSimpleFile2File*. This is the Environment we will use for this project.

Note: You can also import the project from the NetBeans GUI by selecting *Tools / CAPS Repository / Import Project*

4.2. Create the Deployment Profile

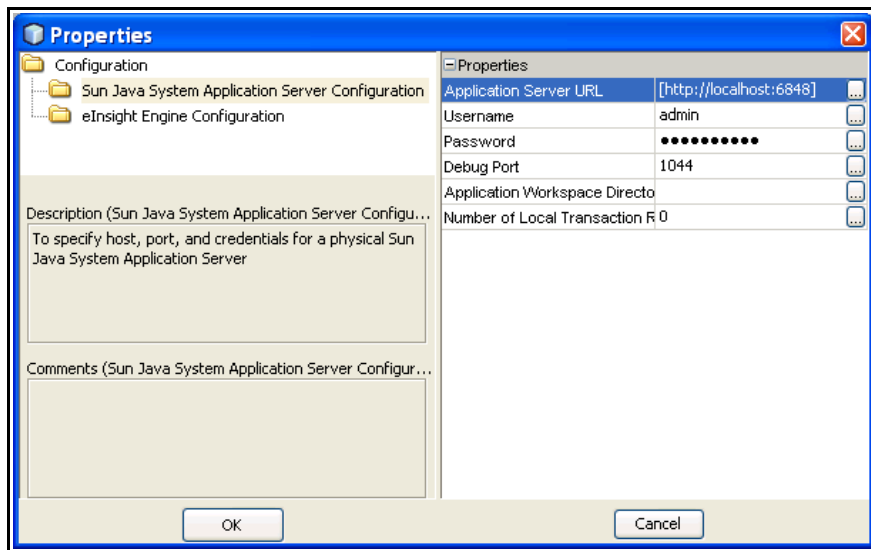
1. Double check the Environment configuration of *envSimpleFile2File*. In the Services tab expand CAPS Environments and then expand *envSimpleFile2File*. It should appear as below:



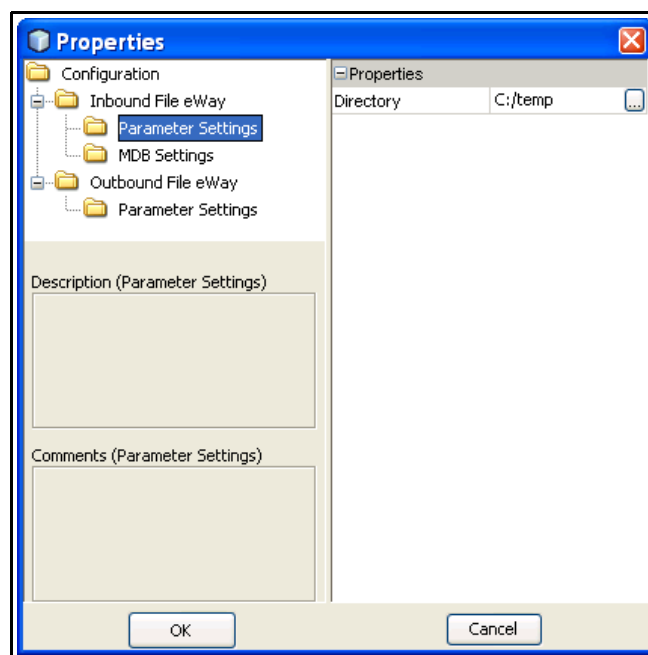
2. Right-click *IntegrationSvr1* and select **Properties**. Modify the Application Server URL if necessary. Enter the correct Username and Password for the application server. Click **OK**.

Note: Immediately after importing a project, all of the objects are considered checked-in. You must check-out the component first before changes can be made.

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- Right-click *extFile* and select **Properties**. Check that the Directory properties are set to C:/temp for both the Inbound and Outbound File eWays click **Cancel**.



- From a command prompt, use the `dpcreate` utility command from the repository (located at `<JavaCAPS_root>\repository\repository\util`) to create a deployment profile, called `dp1`:
`dpcreate <user> <password> "<project>" "<environment>" "<deployment profile>"`
for instance,
`dpcreate admin adminadmin "SimpleFile2File" "envSimpleFile2File" "dp1"`

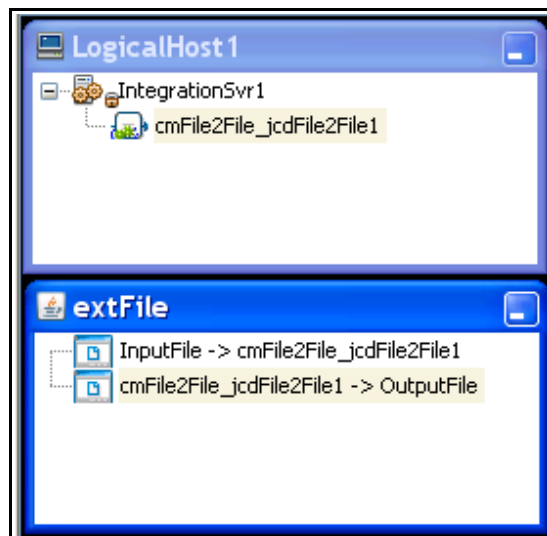
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```

F:\MyTutorial>f:\javacaps6\repository\repository\util\dpcreate admin adminadmin
"SimpleFile2File" "envSimpleFile2File" "dp1"
URL: http://localhost:22000/repository1
User Name: admin
Project Path: SimpleFile2File
Environment Path: envSimpleFile2File
Deployment Name: dp1
CME List: (default all)
CME Exclude List: none
Mapping File Name: F:/JavaCAPS6/repository/repository/util/dpmapping.xml
Recreate DP if found: false

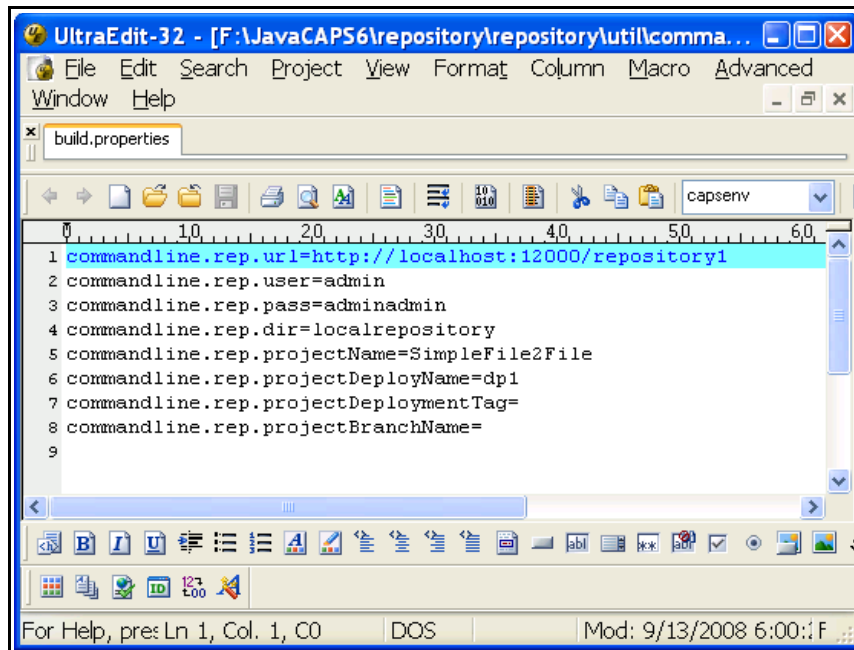
```

Note: You can also create a deployment profile from the NetBeans GUI by right-mouse clicking on the project and select **New > Deployment Profile**. Be sure the DP points to the *envSimpleFile2File* Environment and use the **Automap** button to map the components to your environment.



5. Go to the directory where you installed CommandLineCodegen, for example, <JavaCAPS_root>\repository\repository\util\commandlinecodegen. Open the build.properties file in order to specify the information for the EAR file you will build.
6. Add the values for the following parameters and save the file:
 - a) commandline.rep.url=http://localhost:12000/repository1
 - b) commandline.rep.user=admin
 - c) commandline.rep.pass=adminadmin
 - d) commandline.rep.dir=localrepository **Note:** target location of where the .ear will go relative to the current directory
 - e) commandline.rep.projectName=SimpleFile2File
 - f) commandline.rep.projectDeployName=dp1

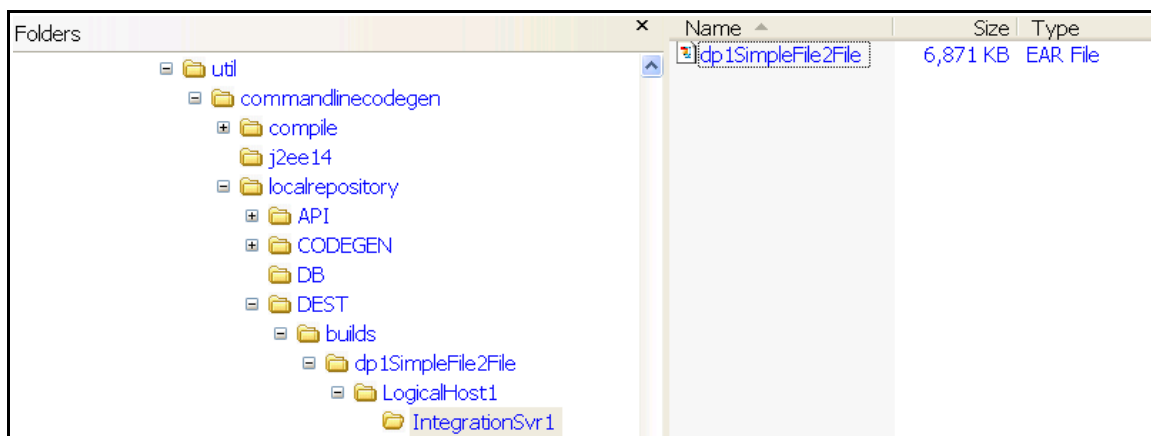
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7. Run the codegen (ear build) command. It might take a few minutes to finish the build.

```
ant -propertyfile build.properties
```

8. Once the ant task is complete, open the log files `codegen.txt` and `logy.txt` to check the status of the build. If successful, find the ear file in the directory specified in `commandline.rep.dir` value, for example, `localrepository` directory.



9. Make sure that the Application Server is up and running.
10. Deploy the EAR file from the command line:

```
asadmin deploy <filepath>
```

for instance,

```
asadmin deploy dp1SimpleFile2File.ear
```

11. Unit test the project by creating a file at `c:\temp\input*.txt` and checking that a new file is created located at `c:\temp\output%d.dat`.

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5. Create Environment Objects

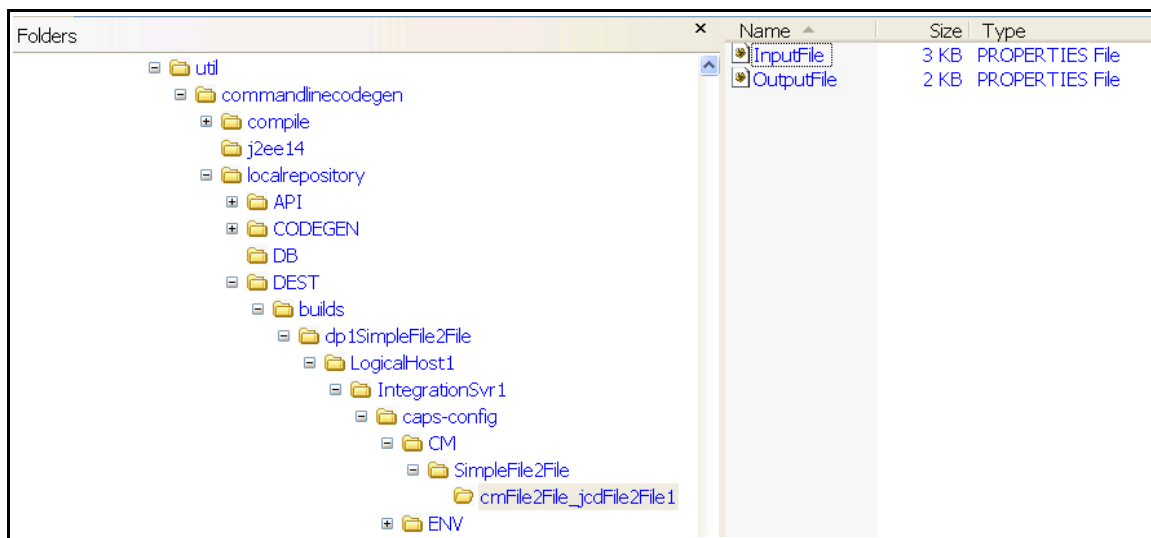
1. Go to the directory where the *SimpleFile2File* EAR file is located, for instance, `<JavaCAPS_root>\repository\repository\util\commandlinecodegen\localrepository\DEST\builds\dp1SimpleFile2File\LogicalHost1\IntegrationSvr1`
2. Run the `asadmin` command to extract the application configuration information to text files:

```
asadmin extract-caps-application-configuration <ear-file-path>
```

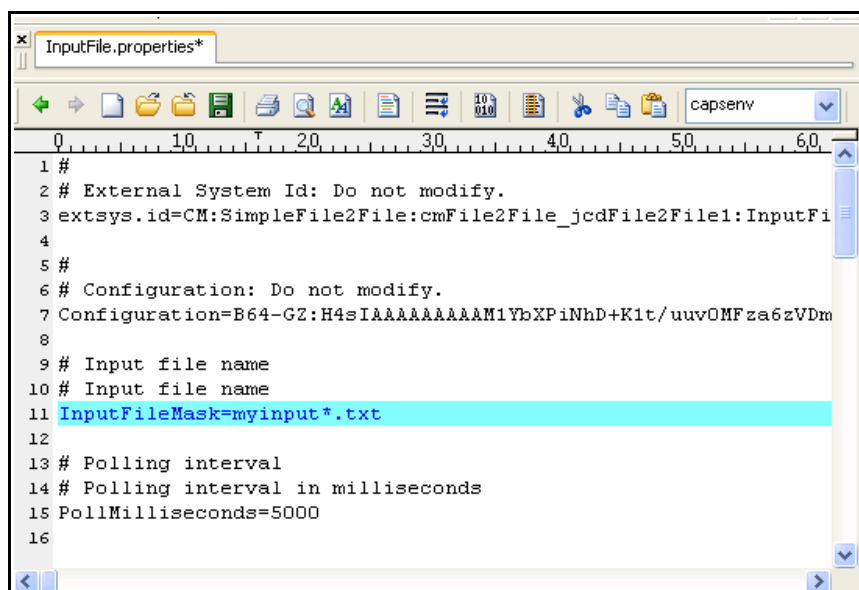
for instance,

```
asadmin extract-caps-application-configuration dp1SimpleFile2File.ear
```

3. A directory named `caps-config` is created on the filesystem containing the properties files for configurable objects in the Connectivity Map and Environment – in this case, the Inbound and Outbound File eWays.



4. At this point, you may modify the parameters in the properties files that will take effect the next time the application is re-enabled or re-deployed. Open the `InputFile.properties` file and change the `InputFileMask` to `myinput*.txt`. Save the file.



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5. Run the `asadmin` command to import the properties to the application server configuration file (`domain.xml`):

```
asadmin import-caps-configuration <dirpath>
```

for instance,

```
asadmin import-caps-configuration caps-config
```

6. The Environment Objects are added to the **CAPS > Environment and CM Overrides** folders in the Admin Console. The Environment Objects can also be seen in the `domain.xml` file with Base64 encoded configuration data.

Note: Once Environment Objects are created in the application server, they may be modified either through the Admin console or through the properties files on the filesystem and re-importing them to the application server.

```
<resources>
<custom-resource enabled="true" factory-class="com.sun.soabi.extsysconfigoverrides.ObjFactory" jndi-name="capsenv/CM/SimpleFile2File/cmFile2File_jcdFile2File1/OutputFile"
  <property name="Configuration" value="B64-G2:H4sIAAAAAAAAAAMVVW2/aMBTHv4pnaXO:AbpJXRt3MS7TJAYImPpQ9cGNT8BSEke2g8a334kDBFLCZ2XGE+j4XH7n7xMf9+1PFJ11KC1k3KKNUp0SiH3J)"/>
</custom-resource>
<custom-resource enabled="true" factory-class="com.sun.soabi.extsysconfigoverrides.ObjFactory" jndi-name="capsenv/ENV/envSimpleFile2File/LogicalHost1/extFile_Inbound"
  <property name="Configuration" value="B64-G2:H4sIAAAAAAAAAAMVVW2/aMBTH/xXPh95KAt2kjoZUNO0wiohSLVDxcFLHmDJsSPbQWV//Z4JIQkDRnv2RfH7YX/e+9ovvuh/LBvmdN1zJEe33EpAp1rj)"/>
</custom-resource>
<custom-resource enabled="true" factory-class="com.sun.soabi.extsysconfigoverrides.ObjFactory" jndi-name="capsenv/ENV/envSimpleFile2File/LogicalHost1/extFile_Outbound"
  <property name="Configuration" value="B64-G2:H4sIAAAAAAAAAAMVVW2/aMBTHv4pnaXO:AbpJXRt3MS7TJAYImPpQ9cGNT8BSEke2g8a334kDBFLCZ2XGE+j4XH7n7xMf9+1PFJ11KC1k3KKNUp0SiH3J)"/>
</custom-resource>
<custom-resource enabled="true" factory-class="com.sun.soabi.extsysconfigoverrides.ObjFactory" jndi-name="capsenv/CM/SimpleFile2File/cmFile2File_jcdFile2File1/InputFile"
  <property name="Configuration" value="B64-G2:H4sIAAAAAAAAAAM1XbY/a0BD+K3P5ULWnFtjctXdVrgWoX2F012VkBVT9U/WCSVCiX2JHtUPj3N3YICe9vvaPS7sLanplnnvGNZ+qf2nEEU1SaS9Hwbio1)"/>
</custom-resource>
</resources>
```

7. Call the commands to disable and enable the application:

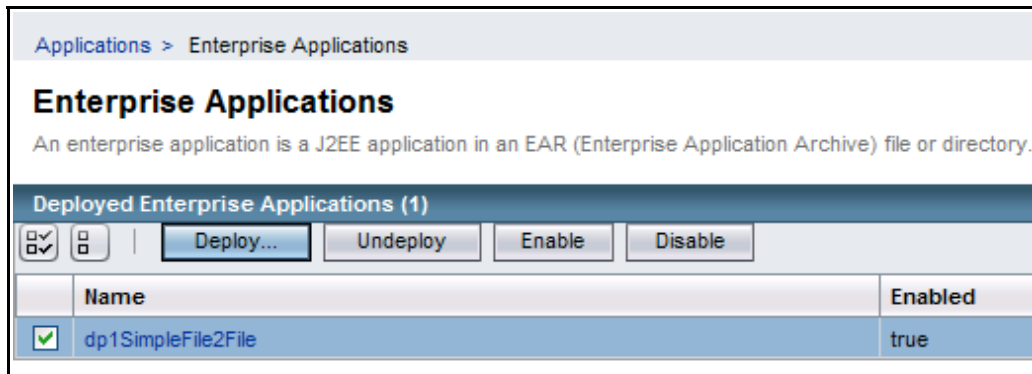
```
asadmin disable <component-name>
asadmin enable <component-name>
```

for instance,

```
asadmin disable dp1SimpleFile2File
asadmin enable dp1SimpleFile2File
```

Note: For the Admin Console, go to the **Applications > Enterprise Applications** folder and Disable/Enable (or Undeploy/Deploy) the `dp1SimpleFile2File` project.

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8. Test the change by creating a file at `c:\temp\myinput*.txt` and checking that a new file is created located at `c:\temp\output%d.dat`.

Note: Since the Environment Object modifications can be made through the `.properties` file, a command line script can be created to automate the entire process (create and modify EO, disable and enable the project).