

Automated Application Maintenance for ActiveMatrix BPM

Background

Nationale Nederlanden (NN) uses ActiveMatrix BPM for Business Process Management projects. Users deploy/upgrade/undeploy/delete applications multiple times due to incremental functionality development, testing, bug fixing, etc., in Development environment.

NN is facing issues with the following:

1. Deployment errors like application fails to start or is in partially running state
2. Accumulation of application templates and features for multiple application versions
3. Undeploy/delete application issues like, undeployment is not possible due the presence of active process instances
4. Nodeutil and db-cleanup needs to be executed on each BPM node machine
5. SystemNode and BPM node log files need to be checked manually for errors
6. Developers or Ops users need to login into Workspace/Openspace to check for active process instances

This project is an attempt to provide NN an automated way of tackling the above issues using ANT scripts. The functionality is split into two projects:

1. Ant_Main_Project
2. Ant_DB_Cleanup_Project

Pre-requisites

Before executing the ANT scripts, ensure that

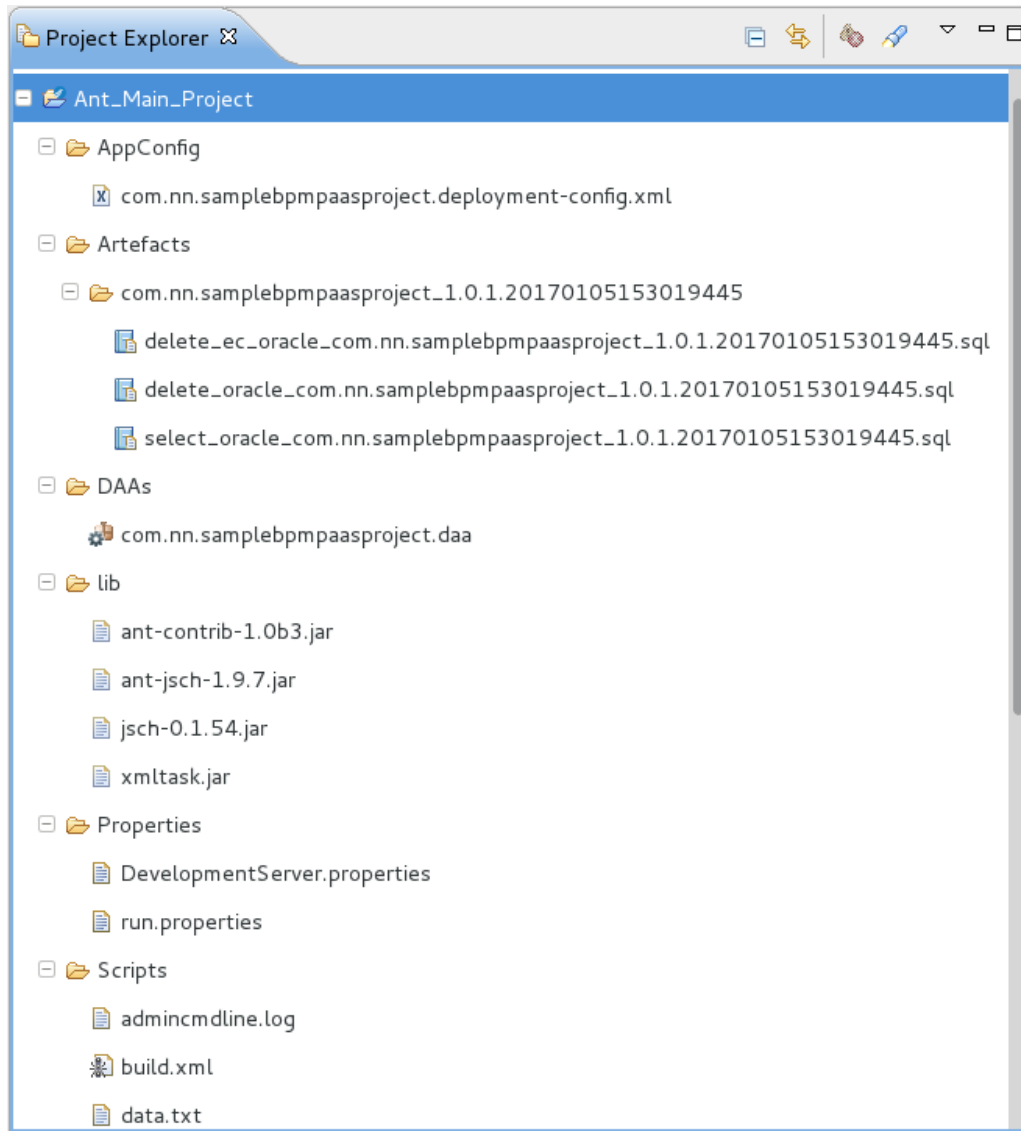
- a. ANT is available on each machines where the scripts will run.
- b. ANT_HOME/bin is added to \$PATH.
- c. AMXBPM_HOME/ amx/3.3/bin/ is added to \$PATH.
- d. xmltask.jar, jsch.jar (version 1.50 +) and ant-contrib are added to ANT_HOME/lib or are available in one of the paths searched by ANT for libraries.
- e. Build server is able to connect to BPMNode machines on ports 22 and BPM HTTP port (for example, 8080). Open appropriate ports in the firewall.
- f. NPA user is able to access and execute nodeutil and db-cleanup on remote or local machines.

Note: The functionality has been tested with ActiveMatrix BPM 4.1 HF 1 with EMS 8.3 and Oracle database on Linux (CentOS).

Rest of the document describes the two projects – Ant_Main_Project and Ant_DB_Cleanup_Project.

Ant_Main_Project

Ant_Main_Project has the following folder structure:



- AppConfig:** Place Application deployment configuration files in this folder.
- Artefacts:** DBCleanupUtil call will place the generated SQL files generated in this folder.
- DAAs:** Folder for Application DAAs.
- lib:** Contains ant-contrib and xmltask JAR files. It is recommended to put the JAR files in ANT_HOME/lib folder. Change the path in build.xml file under taskdef task to reflect the correct path to the jar file.
- Properties:** Folder for properties files. build.xml file refers to these properties files. Refer next section for explanation on Property files.
- Scripts:** Place build.xml in this folder.

Directory structure can be changed as per NN requirements. Change the corresponding paths in the ant build file (build.xml) on changing the directory structure.

Properties files

<<stage>>Server.properties

There is one file per environment – DevelopmentServer.properties, TestServer.properties, etc. Users should provide stage as input property. The file contains connection properties for AMX Administrator and each BPMNode.

Properties are described below:

Property	Description
adminURL	ActiveMatrix Administrator URL
username	ActiveMatrix Administrator login username
password	ActiveMatrix Administrator login password
httpAuthType	Authentication Type
httpConnectionTimeout	Connection Timeout
nodeNames	A comma separated list of all BPM Nodes
<<nodeName>>.Server	IP Address or fully qualified machine name of BPMNode
SSH.Port	SSH port number for remote connection
BPM.HTTP.Port	HTTP port of BPM Node for invoking REST API to check process instance count
<<nodeName>>.os.username	Username for SSH remote login
<<nodeName>>.os.password	Password for SSH remote login
BPM.npa.baseEncoded	Base64 encoded BPM username and password in the format username:password (for example, base64 encoded tibco-admin:secret)

Add properties beginning with <<nodeName>> for each node appearing in the nodeNames property.

If OS NPA is same across BPM Node machines, the properties can be changed to supply one set of username/password for OS NPA. Accordingly, change the property references in build.xml file.

run.properties

run.properties file describes all the file / folder paths referred in build.xml file. Following properties are currently included in the property file.

Property	Description
TIBCO-STUDIO-HOME	TIBCO BPM Studio home
ADMIN-VERSION	ActiveMatrix Administrator version – 3.3
TIBCO-HOST-INSTANCE-FOLDER	Path to the tibcohost instance folder, for example, AMX-AMXBPM-AMXBPMServer
TIBCO-CONFIG-HOME	ActiveMatrix BPM config home location
DB-CLEANUP-BUILDFILE-LOCATION	Location of build.xml that is provided by TIBCO for DB Cleanup

bpm.api.where.clause	Where clause for the BPM REST API to get Process Instance Count. Refer BPM Developer's guide for possible options.
InvokeDBCleanUpBuildFile.Path	Location of the DB Cleanup build file – without the filename (Path to Ant_DB_Cleanup_Project/Scripts)
InvokeDBCleanUpBuildFile.Name	DB Cleanup build file name (invoke-db-cleanup-build.xml)
GeneratedSQLFiles.Location	Location where the generated SQL files are created by DB Cleanup util on the remote machine
ant.path	Ant command name. Ensure that ant is in the PATH and can be accessed only using the command name.
Target	Used only for invoking DBCleanupUtil. Defaults to InvokeDBCleanupUtil
nodeutil.path	NodeUtil path. Ensure that the path is added to the PATH
bpm.api.where.clause	Search query to check Active Process Instances using BPM REST API call
InvokeDBCleanUpBuildFile.Path	<<Ant_DB_Cleanup_Project_Path>>/Scripts
InvokeDBCleanUpBuildFile.Name	invoke-db-cleanup-build.xml
SystemNode.logFile.path	SystemNode.log file location including filename
nodeFolder	\${TIBCO-HOST-INSTANCE-FOLDER}/data_3.2.x/nodes/

build.xml

build.xml exposed the following targets:

Target	Description
UndeployApplication	Executes the following targets: undeploy.app
DeleteApplication	Executes the following targets: undeploy.app, delete.app
DeleteOldAppTemplates	Delete Existing Application Templates
DeleteOldFeatures	Delete Existing Features
DeleteAppIncludingTemplatesAndFeatures	Executes following targets: undeploy.app, delete.app, delete.oldAppTemplates, delete.oldFeatures, delete
InvokeDBCleanupUtilLocal	Invoke db-cleanup-util locally
InvokeDBCleanupUtilRemote	Invoke db-cleanup-util on a remote machine
NodeUtilExecCommandLocal	Remove or List Components including Endpoints locally
NodeUtilExecCommandRemote	Remove or List Components including Endpoints on a remote machine
CheckLogFilesForErrors	Check Log Files for Errors. SystemNode and BPMNode logs will be checked for ERRORS.
GetProcessInstanceCount	Get the Active Process Instance count.

UndeployApplication

UndeployApplication target will undeploy an application. The target depends upon two targets – undeployNoForce.app and undeployForce.app - depending upon whether *forceUndeploy* parameter is supplied (as true, default is false). If *forceUndeploy* parameter has value false, a check is made (BPM REST API call) to determine if there are any active process instances. If the count is greater than zero, undeployForce.app target is internally called.

The query parameter for BPM REST API call should be specified in run.properties file or can be provided as an input to the target. Refer ActiveMatrix BPM Developer's guide for query parameter attributes that can be specified in the URL.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
configFile.path	Yes	None
appName	Yes	None
appVersion	No	None
forceUndeploy	No	False
bpm.api.query.param	Yes, if forceUndeploy is not supplied as input	Is specified in run.properties file

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmpaasproject -DconfigFile.path=../AppConfig/com.nn.samplebpmpaasproject.deployment-config2.xml **UndeployApplication**

Result: If the application exists in ActiveMatrix Administrator, it will be undeployed. The end state will be Not Deployed.

DeleteApplication

DeleteApplication target will undeploy and delete an application. This target depends upon two targets – undeploy.app and delete.app. If *forceUndeploy* parameter has value false, a check is made (BPM REST API call) to determine if there are any active process instances. If the count is greater than zero, undeployForce.app target is internally called. Once the application is undeployed, the next target – delete.app is called to delete the application from AMX Administrator.

The query parameter for BPM Rest call should be specified in run.properties file or can be provided as an input to the target. Refer ActiveMatrix BPM Developer's guide for query parameter attributes that can be specified in the URL.

Input parameters:

Parameter Name	Required	Default Value
Stage	Yes	Development
configFile.path	Yes	None
appName	Yes	None
appVersion	No	None

forceUndeploy	No	False
bpm.api.query.param	Yes, if forceUndeploy is not supplied as input	Is specified in run.properties file

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmmpaasproject -DconfigFile.path=../AppConfig/com.nn.samplebpmmpaasproject.deployment-config2.xml **DeleteApplication**

Result: If the application exists in ActiveMatrix Administrator, it will be undeployed and deleted. The end state will be – application is removed from AMX Administrator.

DeleteOldAppTemplates

DeleteOldAppTemplates target removes old application templates. It is mandatory to specify the template version (at least the major version) in the <<application>>.deployment-config.xml or can be passed as an input parameter when invoking the ANT target.

```
<AppTemplate xsi:type="amxdata_base:AppTemplateID" name="com.nn.samplebpmmpaasproject" version="2.0.1"/>
```

Invoke DeleteOldAppTemplates target for each major version of the Application Template.

Input parameters:

Parameter Name	Required	Default Value
Stage	Yes	Development
configFile.path	Yes	None
appName	Yes	None
appTemplateVersion	Yes	Defaults to the version specified in the <<application>>.deployment-config.xml file

If the version is not specified in deployment-config.xml file nor it is supplied as input, no application templates will be removed and ant will report an error.

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmmpaasproject -DconfigFile.path=../AppConfig/com.nn.samplebpmmpaasproject.deployment-config2.xml -DappTemplateVersion=1.0.1 **DeleteOldAppTemplates**

Result: All application templates that match the version specified in <<application>>.deployment-config.xml or supplied as input parameter (appTemplateVersion) will be deleted from AMX Administrator.

By only specifying the major version, execution of this target can lead to deletion of application templates that should not have been deleted. It is assumed that NN fully understands the risks associated with execution of this ant target. Always consult TIBCO Support for guidance.

DeleteOldFeatures

DeleteOldFeatures target deletes application features. The target refers to the feature version from <<application>>.deployment-config.xml.

```
<Feature xsi:type="amxdata_base:FeatureID" componentID="decisions.com.nn.sampledsproject.ds"
version="1.0.0.20161229152404403"/>
```

If no version is specified in the deployment-config.xml file, all the features that match the feature name will be removed.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
configFile.path	Yes	None
appName	Yes	None

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -
DappName=com.nn.samplebpmasproject -
DconfigFile.path=../AppConfig/com.nn.samplebpmasproject.deployment-config2.xml DeleteOldFeatures

Result: Those features that match the version specified in <<application>>.deployment-config.xml will be deleted from AMX Administrator. If no version is specified, all the features that match the feature name will be removed.

It is recommended to provide a version in <<application>>.deployment-config.xml file in order to avoid deletion of features that should not have been removed.

Not specifying any version in <<application>>.deployment-config.xml, execution of this target will lead to deletion of all the features that match the name provided in the deployment-config.xml file. It is assumed that NN fully understands the risks associated with execution of this ant target. Always consult TIBCO Support for guidance.

DeleteAppIncludingTemplatesAndFeatures

DeleteAppIncludingTemplatesAndFeatures target is used to undeploy and delete an application including Application Templates and Features. This target depends upon undeploy.app, delete.app, delete.oldTemplates.app and delete.oldFeatures. If *forceUndeploy* parameter has value false, a check is made (BPM REST API call) to determine if there are any active process instances. If the count is greater than zero, undeployForce.app target is internally called. Once the application is undeployed, the next target – delete.app is called to delete the application from AMX Administrator.

Next, the targets delete.oldTemplates and delete.oldFeatures are invoked sequentially. For details, refer the description for each target above.

The query parameter for BPM Rest call should be specified in run.properties file or should be supplied as an input to the target. Refer ActiveMatrix BPM Developer's guide for query parameter attributes that can be specified in the URL.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
configFile.path	Yes	None
appName	Yes	None
appVersion	No	None
forceUndeploy	No	False
appTemplateVersion	Yes	Defaults to the version specified in the <<application>>.deployment-config.xml file
bpm.api.query.param	Yes, if forceUndeploy is not supplied as input	Is specified in run.properties file

Currently deployed version is undeployed and deleted and the features are removed if no version is specified. It is necessary to specify appTemplateVersion in <<application>>.deployment-config.xml file.

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmmpaasproject -DconfigFile.path=../AppConfig/com.nn.samplebpmmpaasproject.deployment-config2.xml -DappTemplateVersion=1.0.1 DeleteAppIncludingTemplatesAndFeatures

Result: If the application exists in ActiveMatrix Administrator, it will be undeployed and deleted. Corresponding features will be removed and Application Templates that match the specified version will be removed. If no application template version is specified, no application templates will be removed and ant will report an error.

By only specifying the major version, execution of this target can lead to deletion of application templates that shouldn't have been deleted.

It is recommended to provide a version in <<application>>.deployment-config.xml file in order to avoid deletion of features that should not be removed.

Not specifying any version in <<application>>.deployment-config.xml, execution of this target will lead to deletion of all the features that match the name provided in the deployment-config.xml file. It is assumed that NN fully understands the risks associated with execution of this ant target. Always consult TIBCO Support for guidance.

Sample Output:

```
Buildfile: /home/neo/bpm/workspace/Ant_Main_Project/Scripts/build.xml
[echo] Config File Path: ../AppConfig/com.nn.samplebpmmpaasproject.deployment-config.xml
undeploy.app:
[echo] Config File Path: ../AppConfig/com.nn.samplebpmmpaasproject.deployment-config.xml
GetProcessInstanceCount:
[echo] BPM REST API Search Query: DEFINITION.NAME=%27SamplePAASProcess%27
[exec] % Total    % Received % Xferd  Average Speed   Time    Time       Time  Current
[exec]                                  Dload  Upload  Total  Spent    Left     Speed
[exec]    0     0    0     0     0     0      0      0  --:--:-- --:--:-- --:--:--    0100    1
0     1     0     0    13     0 --:--:-- --:--:-- --:--:--    13
```



```

[echo] Active Process Instance Count: 1
[echo] Force Undeploy is set to: false
[echo] 1
[echo] Force Undeploy is set to: true
[echo] Config File Path: ../AppConfig/com.nn.samplebpmmpaasproject.deployment-config.xml
undeployForce.app:
[AMXAdminTask] 12 Jan 2017 19:11:56 INFO - Connecting to AMX Admin server at 'http://localhost:8120'
as user 'neo'.
[AMXAdminTask] 12 Jan 2017 19:11:56 INFO - Processing 1 objects
[AMXAdminTask] 12 Jan 2017 19:12:18 INFO - Undeploying application...
[AMXAdminTask] 12 Jan 2017 19:16:50 INFO - Undeploying Application 'com.nn.samplebpmmpaasproject' in
background
[AMXAdminTask] 12 Jan 2017 19:16:50 INFO - Action finished in Admin at 1/12/17 7:16 PM in 272.151
seconds. Waiting for runtime tasks to be finished.
[AMXAdminTask] 12 Jan 2017 19:16:51 INFO - .
[AMXAdminTask] 12 Jan 2017 19:16:55 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:01 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:06 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:11 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:16 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:21 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:26 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:31 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:36 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:41 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:47 INFO - .
[AMXAdminTask] 12 Jan 2017 19:17:52 INFO - Displaying info for pending tasks at 1/12/17 7:17 PM
[AMXAdminTask] 12 Jan 2017 19:17:52 INFO - 17 tasks are pending on node [BPMNode] on host [SystemHost]
[AMXAdminTask] 12 Jan 2017 19:17:57 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:02 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:07 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:12 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:18 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:23 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:28 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:33 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:38 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:43 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:49 INFO - .
[AMXAdminTask] 12 Jan 2017 19:18:54 INFO - Displaying info for pending tasks at 1/12/17 7:18 PM
[AMXAdminTask] 12 Jan 2017 19:18:54 INFO - 11 tasks are pending on node [BPMNode] on host [SystemHost]
[AMXAdminTask] 12 Jan 2017 19:18:59 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:04 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:09 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:15 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:20 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:25 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:30 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:35 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:40 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:46 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:51 INFO - .
[AMXAdminTask] 12 Jan 2017 19:19:56 INFO - Displaying info for pending tasks at 1/12/17 7:19 PM
[AMXAdminTask] 12 Jan 2017 19:19:56 INFO - 10 tasks are pending on node [BPMNode] on host [SystemHost]
[AMXAdminTask] 12 Jan 2017 19:20:01 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:06 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:11 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:17 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:22 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:27 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:32 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:37 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:42 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:48 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:53 INFO - .
[AMXAdminTask] 12 Jan 2017 19:20:58 INFO - Displaying info for pending tasks at 1/12/17 7:20 PM
[AMXAdminTask] 12 Jan 2017 19:20:58 INFO - 9 tasks are pending on node [BPMNode] on host [SystemHost]
[AMXAdminTask] 12 Jan 2017 19:21:03 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:08 INFO - .

```

```
[AMXAdminTask] 12 Jan 2017 19:21:13 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:19 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:24 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:29 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:34 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:39 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:44 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:50 INFO - .
[AMXAdminTask] 12 Jan 2017 19:21:55 INFO - .
[AMXAdminTask] 12 Jan 2017 19:22:00 INFO - Displaying info for pending tasks at 1/12/17 7:22 PM
[AMXAdminTask] 12 Jan 2017 19:22:00 INFO - 3 tasks are pending on node [BPMNode] on host [SystemHost]
[AMXAdminTask] 12 Jan 2017 19:22:05 INFO - .
[AMXAdminTask] 12 Jan 2017 19:22:10 INFO - .
[AMXAdminTask] 12 Jan 2017 19:22:15 INFO - .
[AMXAdminTask] 12 Jan 2017 19:22:21 INFO - .
[AMXAdminTask] 12 Jan 2017 19:22:26 INFO - .
[AMXAdminTask] 12 Jan 2017 19:22:31 INFO - .
[AMXAdminTask] 12 Jan 2017 19:22:33 INFO - Application Force Undeploy finished successfully
[AMXAdminTask] 12 Jan 2017 19:22:33 INFO - Action finished at 1/12/17 7:22 PM in 614.752 seconds
delete.app:
[AMXAdminTask] 12 Jan 2017 19:22:34 INFO - Connecting to AMX Admin server at 'http://localhost:8120'
as user 'neo'.
[AMXAdminTask] 12 Jan 2017 19:22:34 INFO - Processing 1 objects
[AMXAdminTask] 12 Jan 2017 19:22:55 INFO - Deleting Application...
[AMXAdminTask] 12 Jan 2017 19:23:15 INFO - Successfully deleted Application
'com.nn.samplebpmpaasproject'
[AMXAdminTask] 12 Jan 2017 19:23:15 INFO - Action finished at 1/12/17 7:23 PM in 20.441 seconds
delete.oldAppTemplates:
[echo] App Version Length: 1
[AMXAdminTask] 12 Jan 2017 19:23:16 INFO - Processing 1 objects
[AMXAdminTask] 12 Jan 2017 19:23:16 INFO - Deleting application templates...
[AMXAdminTask] 12 Jan 2017 19:23:16 INFO - Successfully deleted app template(s):
com.nn.samplebpmpaasproject
[AMXAdminTask] 12 Jan 2017 19:23:16 INFO - Action finished at 1/12/17 7:23 PM in 0.113 seconds
delete.oldFeatures:
[AMXAdminTask] 12 Jan 2017 19:23:16 INFO - Processing 0 objects
DeleteAppIncludingTemplatesAndFeatures:
BUILD SUCCESSFUL
Total time: 11 minutes 23 seconds
```

Sample Output 2:

```
Buildfile: /home/neo/bpm/workspace/Ant_Main_Project/build.xml
[echo] Config File Path: ../AppConfig/com.nn.samplebpmpaasproject.deployment-config.xml
undeploy.app:
[echo] Config File Path: ../AppConfig/com.nn.samplebpmpaasproject.deployment-config.xml
GetProcessInstanceCount:
[echo] BPM REST API Search Query: DEFINITION.NAME=%27SamplePAASProcess%27
[exec] % Total    % Received % Xferd   Average Speed   Time    Time       Time    Current
[exec]                                Dload  Upload  Total  Spent    Left     Speed
[exec]    0      0    0      0      0      0      0      0  --:--:--  --:--:--  --:--:--    0100    1
0      1      0      0    18      0  --:--:--  --:--:--  --:--:--    19
[echo] Active Process Instance Count: 3
[echo] Force Undeploy is set to: false
[echo] 3
[echo] Force Undeploy is set to: true
[echo] Config File Path: ../AppConfig/com.nn.samplebpmpaasproject.deployment-config.xml
undeployForce.app:
[AMXAdminTask] 12 Jan 2017 23:14:26 INFO - Connecting to AMX Admin server at 'http://localhost:8120' as user 'neo'.
[AMXAdminTask] 12 Jan 2017 23:14:26 INFO - Processing 1 objects
[AMXAdminTask] 12 Jan 2017 23:14:28 INFO - Undeploying application...
[AMXAdminTask] 12 Jan 2017 23:14:30 INFO - Undeploying Application 'com.nn.samplebpmpaasproject' in background
```

```

[AMXAdminTask] 12 Jan 2017 23:14:30 INFO - Action finished in Admin at 1/12/17 11:14 PM in 1.722
seconds. Waiting for runtime tasks to be finished.
[AMXAdminTask] 12 Jan 2017 23:14:31 INFO - .
[AMXAdminTask] 12 Jan 2017 23:14:35 INFO - .
[AMXAdminTask] 12 Jan 2017 23:14:37 INFO - Application Force Undeploy finished successfully
[AMXAdminTask] 12 Jan 2017 23:14:37 INFO - Action finished at 1/12/17 11:14 PM in 9.072 seconds
delete.app:
[AMXAdminTask] 12 Jan 2017 23:14:38 INFO - Connecting to AMX Admin server at 'http://localhost:8120'
as user 'neo'.
[AMXAdminTask] 12 Jan 2017 23:14:38 INFO - Processing 1 objects
[AMXAdminTask] 12 Jan 2017 23:14:39 INFO - Deleting Application...
[AMXAdminTask] 12 Jan 2017 23:14:40 INFO - Successfully deleted Application
'com.nn.samplebpmmpaasproject'
[AMXAdminTask] 12 Jan 2017 23:14:40 INFO - Action finished at 1/12/17 11:14 PM in 0.548 seconds
delete.oldAppTemplates:
[echo] App Version Length: 1
[AMXAdminTask] 12 Jan 2017 23:14:40 INFO - Processing 1 objects
[AMXAdminTask] 12 Jan 2017 23:14:40 INFO - Deleting application templates...
[AMXAdminTask] 12 Jan 2017 23:14:40 INFO - Successfully deleted app template(s):
com.nn.samplebpmmpaasproject
[AMXAdminTask] 12 Jan 2017 23:14:40 INFO - Action finished at 1/12/17 11:14 PM in 0.071 seconds
delete.oldFeatures:
[AMXAdminTask] 12 Jan 2017 23:14:40 INFO - Processing 0 objects
DeleteAppIncludingTemplatesAndFeatures:
BUILD SUCCESSFUL
Total time: 16 seconds

```

InvokeDBCleanupUtilLocal

This target can be used for generating DB Cleanup SQL files. The target internally invokes InvokeDBCleanupUtilRemote. If application version is specified as input parameter, the SQL scripts will be generated for the given version. If no version is specified, the target will access the plugins folder to determine the application version for the application name specified in the input. The target will generate SQL scripts for each version that found in plugins folder.

Generated SQL files are copied to the Artefacts folder in Ant_Main_Project under <<applicationName_applicationVersion>> folder.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
appName	Yes	None. It is assumed that the application template name is same as the application name.
appVersion	No- but recommended	None
dbType	No	Oracle

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmmpaasproject -DappVersion= <<appVersion>> -DdbType=oracle InvokeDBCleanupUtilLocal

Result: SQL files will be generated for the application and version specified as input (if it exists).

InvokeDBCleanupUtilRemote

This target can be used for generating the DB Cleanup SQL files on a remote machine. The target internally invokes invoke-db-cleanup-build.xml, which in turn invokes build.xml (provided by TIBCO). If application version is specified, the SQL scripts will be generated for the given version. If no version is specified, the target will access the plugins folder to determine the application version for the application name. The target will generate SQL scripts for each version that is found in plugins folder.

Generated SQL files are copied to the Artefacts folder in Ant_Main_Project under <<applicationName_applicationVersion>> folder.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
appName	Yes	None
appVersion	No- but recommended	None
dbType	No	Oracle
Buildfile	No	"\${DB-CLEANUP-BUILDFILE-LOCATION}/db-cleanup-build.xml
admin.repo	No	\${TIBCO-CONFIG-HOME}/admin/AMXBPM/shared/staging/tools/machinemodel/plugins

Ensure that correct server details are provided in <<stage>>Server.properties file.

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmmpaasproject -DappVersion= <<appVersion>> -DdbType=oracle
InvokeDBCleanupUtilRemote

Result: SQL files will be generated for the application and version specified as input (if it exists).

Sample Output:

```
[echo] Config File Path: ../AppConfig/com.nn.samplebpmmpaasproject.deployment-config.xml

InvokeDBCleanupUtilRemote:
[sshexec] Connecting to 192.168.136.130:22
[sshexec] cmd : ant -f /home/neo/bpm/workspace/Ant_DB_Cleanup_Project/Scripts/invoke-db-cleanup-
build.xml InvokeDBCleanupUtil -DappName=com.nn.samplebpmmpaasproject -DappVersion=
[sshexec] Buildfile: /home/neo/bpm/workspace/Ant_DB_Cleanup_Project/Scripts/invoke-db-cleanup-
build.xml
[sshexec] [echo] tibco.config.home = /opt/tibco/config/AMXBPM
[sshexec]
[sshexec] InvokeDBCleanupUtil:
[sshexec] [echo] App Name : com.nn.samplebpmmpaasproject
[sshexec] [echo] App Version :
[sshexec] [echo] App Version Length: 0
[sshexec] [echo] Following folders where found:
com.nn.samplebpmmpaasproject_1.0.1.20170105153019445
[sshexec] [echo] Full Folder Name = com.nn.samplebpmmpaasproject_1.0.1.20170105153019445
[sshexec] [echo] appName = com.nn.samplebpmmpaasproject
[sshexec] [echo] appVersion = 1.0.1.20170105153019445
[sshexec]
[sshexec] generate-sql:
```

```

[sshexec]
[sshexec] -add-ec-indexes-create-sql:
[sshexec]
[sshexec] -add-bpm-create-sp:
[sshexec]
[sshexec] -generate-pvm-ec-sql:
[sshexec] [xmltask] Parent project doesn't contain any reference 'xmltask.bufferers'
[sshexec]
[sshexec] -process-ec-servicemodel:
[sshexec]
[sshexec] -append-pvm-execute:
[sshexec]
[sshexec] -generate-brm-sql:
[sshexec]
[sshexec] -process-wt-xml:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -process-sd-xml:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -process-wm-xml:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -generate-deployed-component:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -generate-wp-sql:
[sshexec]
[sshexec] -process-wt-xml:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -append-uid-delete:
[sshexec]
[sshexec] -process-wpmodel-xml:
[sshexec]
[sshexec] -generate-de-sql:
[sshexec]
[sshexec] -add-ec-drop-sp:
[sshexec]
[sshexec] -add-bpm-drop-sp:
[sshexec]
[sshexec]
[sshexec] -add-ec-indexes-drop-sql:
[sshexec] [copy] Copying 3 files to
/home/neo/bpm/workspace/Ant_DB_Cleanup_Project/Scripts/temp/com.nn.samplebpmmpaasproject_1.0.1.201701051
53019445
[sshexec] [echo] DB-CLEANUP-BUILDFILE-LOCATION: /opt/tibco/amxbpm/bpm/4.1/SupportTools/bpm-db-
cleanup
[sshexec]
[sshexec] BUILD SUCCESSFUL
[sshexec] Total time: 1 second
[sshexec]
[scp] Connecting to 192.168.136.130:22
[scp] Receiving file: /home/neo/bpm/workspace/Ant_DB_Cleanup_Project/Scripts/temp/*
[scp] Creating:
/home/neo/bpm/workspace/Ant_Main_Project/Artefacts/com.nn.samplebpmmpaasproject_1.0.1.20170105153019445
[scp] Receiving: delete_ec_oracle_com.nn.samplebpmmpaasproject_1.0.1.20170105153019445.sql : 15089
[scp] File transfer time: 0.0 Average Rate: 5,029,666.67 B/s
[scp] Receiving: delete_oracle_com.nn.samplebpmmpaasproject_1.0.1.20170105153019445.sql : 12059
[scp] File transfer time: 0.0 Average Rate: 12,059,000.0 B/s

```

```

[scp] Receiving: select_oracle_com.nn.samplebpmmpaasproject_1.0.1.20170105153019445.sql : 6422
[scp] File transfer time: 0.0 Average Rate: 6,422,000.0 B/s
[scp] done
[sshexec] Connecting to 192.168.136.130:22
[sshexec] cmd : rm -r /home/neo/bpm/workspace/Ant_DB_Cleanup_Project/Scripts/temp/

BUILD SUCCESSFUL
Total time: 1 minute 34 seconds

```

NodeUtilExecCommandLocal

The target can be called to execute nodeutil locally. The target depends upon NURemoveOrListComponentL. NURemoveOrListComponentL is invoked for each node present in nodeName property in <<stage>>Server.properties file.

The target is configured to execute two nodeUtil commands – listComponents and removeComponents. The default command is listComponents.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
appName	Yes	None
appVersion	No	None
nodeUtilCommand	Yes	listComponents
Options	No – for example –dryRun option for removeComponents	

nodeUtil will list/remove all the versions of the application if application version (appVersion property) is not provided.

Ensure that the nodes are in stopped state before executing this target. Not doing so can lead to adverse side effects. Refer TIBCO documentation on nodeUtil.

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmmpaasproject -DappVersion=<<appVersion>> -DnodeUtilCommand=listComponents -Doptions=<<options>> **NodeUtilExecCommandLocal**

Result: If application exists, the nodeUtil will list/remove all the components of the application that match the version. **If no version is supplied, all the versions will be listed/removed.**

Not knowing how nodeutil works or by not following the guidelines mentioned in the TIBCO documentation, the execution can lead to undesired results, including instability in the system. TIBCO Support may not be able to assist in such a scenario. Always consult TIBCO Support before using nodeutil.

NodeUtilExecCommandRemote

The target can be called to execute nodeUtil on remote machines. The target depends upon NURemoveOrListComponentR. NURemoveOrListComponentR is invoked for each node present in the nodeNames <<stage>>Server.properties file.

The target is configured to execute two nodeUtil commands – listComponents and removeComponents. The default command is listComponents.

Ensure that the BPMNode server details are correctly specified in <<stage>>Server.properties. The process should have access to directories (listed in run.properties) and proper execution rights on remote server.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
appName	Yes	None
appVersion	No	None
nodeUtilCommand	Yes	listComponents
options	No – for example –dryRun option for removeComponents	

nodeUtil will list/remove all the versions of the application if the application version (appVersion property) is not specified in the input.

Ensure that the nodes are in stopped state before executing this target. Not doing so can lead to adverse side effects. Refer TIBCO documentation on nodeUtil.

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -Dstage=Development -DappName=com.nn.samplebpmpaasproject -DappVersion=<<appVersion>> -DnodeUtilCommand=listComponents -Doptions=<<options>> **NodeUtilExecCommandRemote**

Result: If application exists, the nodeUtil will list/remove all the components of the application that match the version. **If no version is supplied all the versions will be listed/removed.**

```
Buildfile: /home/neo/bpm/workspace/Ant_Main_Project/Scripts/build.xml
[echo] Config File Path: ../AppConfig/com.nn.samplebpmpaasproject.deployment-config.xml
NodeUtilExecCommandRemote:
[echo] BPM Nodes: BPMNode
[echo] Config File Path: ../AppConfig/com.nn.samplebpmpaasproject.deployment-config.xml
NURemoveOrListComponentR:
[echo] NodeUtil will execute on Node: BPMNode
[sshexec] Connecting to 192.168.136.130:22
[sshexec] cmd : nodeutil RemoveComponents -includeEndpoints -nodeName BPMNode -
tibcoHostInstanceFolder /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer -applicationName
com.nn.samplebpmpaasproject -dryRun
[sshexec] log4j:WARN No appenders could be found for logger
(com.tibco.amx.tools.nodeutil.logger.SimpleLogger).
[sshexec] log4j:WARN Please initialize the log4j system properly.
[sshexec] Invoking removeComponents
[sshexec] -includeEndpoints
[sshexec] -nodeName BPMNode
[sshexec] -tibcoHostInstanceFolder /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer
[sshexec] -applicationName com.nn.samplebpmpaasproject
[sshexec] -dryRun
```

```

[sshexec]
[sshexec] Removing components from application "com.nn.samplebpmpaasproject" with version "*" from
node "BPMNode" (dry-run)
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/SampleBPMPAASProjectProcessFlow_1.0.1.20170105153019
445
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/SampleBPMPAASProjectProcessFlow_1.0.1.20170105153019
445_service_SamplePAASProcess_http__www.tibco.com_wrm_policy_threading_ThreadingPolicy_WRMComponent__
_1.0.1.20170105153019445
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/SampleBPMPAASProjectProcessFlow_1.0.1.20170105153019
445_service_SamplePAASProcess_http__www.tibco.com_wrm_policy_transactedoneway_TransactedOneWay_WRMCom
ponent__1.0.1.20170105153019445
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/SampleBPMPAASProjectProcessFlow_1.0.1.20170105153019
445_inbound_service_SamplePAASProcess/SamplePAASProcess_Virtualization
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/Virtualization__ThreadingPolicy_WRMComponent__1.0.1.20170105153019445
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/Virtualization__TransactedOneWay_WRMComponent__1.0.1.20170105153019445
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/SampleBPMPAASProjectProcessFlow_1.0.1.20170105153019
445_inbound_service_SamplePAASProcess/SamplePAASProcess_SamplePAASProcess_EP
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/SamplePAASProcess_EP_http__www.tibco.com_wrm_WRMPolicySetsResource_authenti
cation.usernameToken__1.0.1.20170105153019445
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/SamplePAASProcess_EP__TransactedOneWay_WRMComponent__1.0.1.2017010515301944
5
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/SampleBPMPAASProjectProcessFlow_1.0.1.20170105153019
445_outbound_reference_SamplePAASProcess/SamplePAASProcess_SamplePAASProcess_EP_proxy
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/SamplePAASProcess_EP__ThreadingPolicy_WRMComponent_EndpointProxy__1.0.1.201
70105153019445
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/SamplePAASProcess_EP__TransactedOneWay_WRMComponent_EndpointProxy__1.0.1.20
170105153019445
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/SampleBPMPAASProjectProcessFlow_1.0.1.20170105153019
445_inbound_service_SamplePAASProcess/SamplePAASProcess_SamplePAASProcess_EP_proxy
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/SamplePAASProcess_EP__ThreadingPolicy_WRMComponent_ComponentProxy__1.0.1.20
170105153019445
[sshexec] Received command to remove Policy Set from node "BPMNode" (dry-run)
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject_service-
binding_SamplePAASProcess/SamplePAASProcess_EP__TransactedOneWay_WRMComponent_ComponentProxy__1.0.1.2
0170105153019445
[sshexec] urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/BRM_1.0.1.20170105153019445
[sshexec]
urn:amx:BPMEnvironment/com.nn.samplebpmpaasproject/WorkPresentation_1.0.1.20170105153019445
[sshexec] The following applications might be impacted by removing components:
[sshexec] com.nn.samplebpmpaasproject
[sshexec] Would have removed 17 components.
BUILD SUCCESSFUL
Total time: 25 seconds

```


Not knowing how nodeutil works or by not following the guidelines mentioned in the TIBCO documentation, the execution can lead to undesired results, including instability in the system. TIBCO Support may not be able to assist in such a scenario. Always consult TIBCO Support before using nodeutil.

CheckLogFilesForErrors

CheckLogFilesForErrors target will connect to SystemNode and to each BPMNode machine to check for errors in log files. Ensure that the build user has correct permissions to access and open log files.

Following files will be accessed:

1. SystemNode.log
2. BPM.log
3. <<nodeName>>.log

List of BPMNodes and the corresponding server properties are defined in <<stage>>Server.properties file. Paths are defined in run.properties file.

Input parameters:

Parameter Name	Required?	Default Value
stage	Yes	Development
appName	Yes	None
startDateTime	Yes	
endDateTime	Yes	

For valid date-time format, refer to sed (linux) command documentation.

Command: `ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -DappName=com.nn.samplebpmpaasproject CheckLogFilesForErrors -Dstage=Development -DstartDateTime="07-Jan-2017 17:14:03" -DendDateTime="09-Jan-2017 17:14:03"`

Result: If ERRORS are present, the corresponding lines will be displayed. If there are no ERRORS, ANT will display a message to that effect.

Sample Output:

```
Buildfile: /home/neo/bpm/workspace/Ant_Main_Project/Scripts/build.xml
[echo] Config File Path: ../AppConfig/com.nn.samplebpmpaasproject.deployment-config.xml
CheckLogFilesForErrors:
[echo] start date-time date is Dec 09 2016 00:00:00
[echo] End date-time date is Jan 12 2017 14:44:00
[sshexec] Connecting to 192.168.136.130:22
[sshexec] cmd : if sed '/${TODAY_End}/ , /${TODAY_Start}/p'
/opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-
AMXBPMServer/data_3.2.x/nodes/SystemNode/logs/SystemNode.log | grep com.nn.samplebpmpaasproject | grep
ERROR; then sed '/${TODAY_End}/ , /${TODAY_Start}/p'
/opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-
AMXBPMServer/data_3.2.x/nodes/SystemNode/logs/SystemNode.log | grep com.nn.samplebpmpaasproject | grep
ERROR -q; else echo 'No errors found in SystemNode.log for application
com.nn.samplebpmpaasproject between Dec 09 2016 00:00:00 and Jan 12 2017 14:44:00'; fi
[sshexec] 09 Jan 2017 23:05:44,980 [amxAdminDefaultHttpConnector_4] [ERROR] []
com.tibco.amx.admin.user.action.log - TIBCO-AMX-ADMIN-005399: User 'neo' failed to perform 'remove
```

```

application template from staging area' in 1ms. Context [() (Name : com.nn.samplebpmmpaasproject, Version : 3)].
[echo] BPM Nodes: BPMNode
[echo] Config File Path: ../AppConfig/com.nn.samplebpmmpaasproject.deployment-config.xml
CheckBPMLogs:
[echo] BPM Node: BPMNode
[echo] path: /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer/data_3.2.x/nodes//BPMNode/logs/BPM.log
[sshexec] Connecting to 192.168.136.130:22
[sshexec] cmd : if sed '/${TODAY_End}/ , /${TODAY_Start}/p' /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer/data_3.2.x/nodes//BPMNode/logs/BPM.log | grep com.nn.samplebpmmpaasproject | grep ERROR; then sed '/${TODAY_End}/ , /${TODAY_Start}/p' /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer/data_3.2.x/nodes//BPMNode/logs/BPM.log | grep com.nn.samplebpmmpaasproject | grep ERROR; else echo 'No errors found in BPM.log for application com.nn.samplebpmmpaasproject between Dec 09 2016 00:00:00 and Jan 12 2017 14:44:00'; fi
[sshexec] No errors found in BPM.log for application com.nn.samplebpmmpaasproject between Dec 09 2016 00:00:00 and Jan 12 2017 14:44:00
[echo] path: /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer/data_3.2.x/nodes//BPMNode/logs/BPMNode.log
[sshexec] Connecting to 192.168.136.130:22
[sshexec] cmd : if sed '/${TODAY_End}/ , /${TODAY_Start}/p' /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer/data_3.2.x/nodes//BPMNode/logs/BPMNode.log | grep com.nn.samplebpmmpaasproject | grep ERROR; then sed '/${TODAY_End}/ , /${TODAY_Start}/p' /opt/tibco/config/AMXBPM/tibcohost/Admin-AMXBPM-AMXBPMServer/data_3.2.x/nodes//BPMNode/logs/BPMNode.log | grep com.nn.samplebpmmpaasproject | grep ERROR; else echo 'No errors found in BPMNode.log for application com.nn.samplebpmmpaasproject between Dec 09 2016 00:00:00 and Jan 12 2017 14:44:00'; fi
[sshexec] No errors found in BPMNode.log for application com.nn.samplebpmmpaasproject between Dec 09 2016 00:00:00 and Jan 12 2017 14:44:00
BUILD SUCCESSFUL
Total time: 20 seconds

```

GetProcessInstanceCount

Execute this target to check for active process instances. The target fetches the count using BPM REST API queryProcessInstanceCountAlt.

bpm.api.query.param can be supplied as an input parameter. If the parameter is not supplied, ANT will default to the value specified in run.properties file. Query Parameter Attributes are listed in TIBCO ActiveMatrix BPM Developer's Guide.

https://docs.tibco.com/pub/amx-bpm/4.1.0/doc/pdf/TIB_amx-bpm_4.1_development.pdf

Ensure that the value provided for the query parameter is correctly encoded. For example, use %27 for a quote.

Input parameters:

Parameter Name	Required	Default Value
stage	Yes	Development
bpm.api.query.param	Yes	None
nodeName	Yes	None

BPM username and password is in encoded format. Make note that an encoded password can be easily decoded and is not same as an encrypted password. The encoded password is (base64) is specified in the <<stage>>Server.properties file.

Command: ant -f <<Ant_Main_Project_Dir>>/Scripts/build.xml -D bpm.api.query.param = DEFINITION.NAME=%27SamplePAASProcess%27 -Dstage=Development **GetProcessInstanceCount**

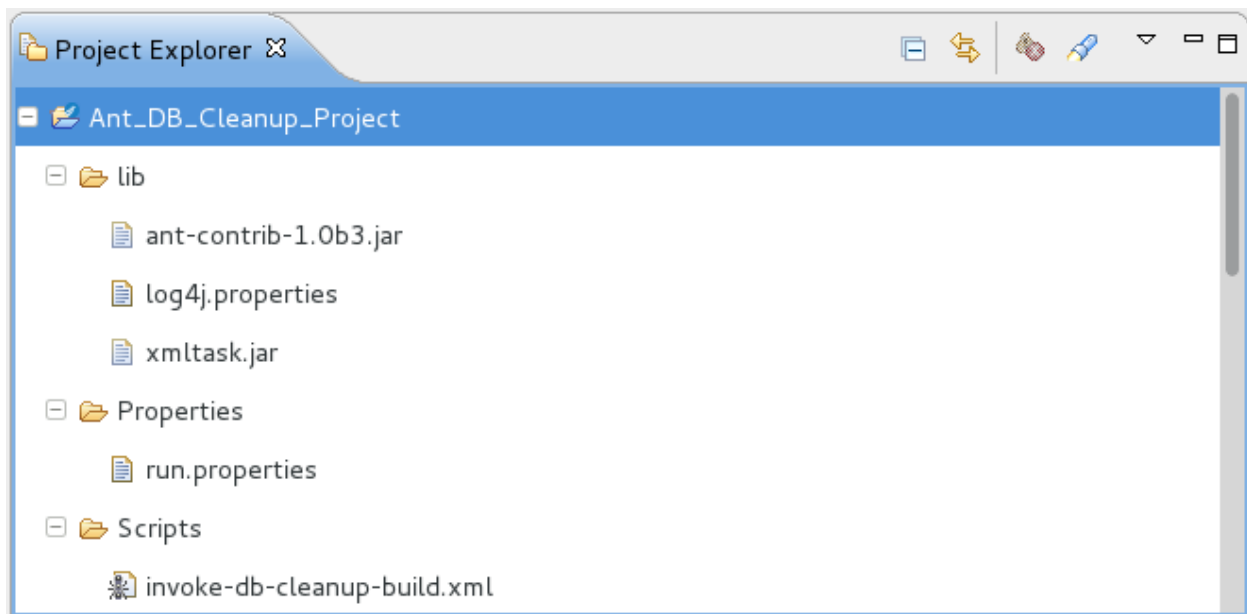
Result: Live process instance count, if any, will be displayed based on the give query parameter.

Sample Output:

```
Buildfile: /home/neo/bpm/workspace/Ant_Main_Project/Scripts/build.xml
[echo] Config File Path: ../AppConfig/com.nn.samplebpmpaasproject.deployment-config.xml
GetProcessInstanceCount:
[echo] BPM REST API Search Query: DEFINITION.NAME=%27SamplePAASProcess%27
[exec] % Total % Received % Xferd Average Speed Time Time Time Current
[exec] Dload Upload Total Spent Left Speed
[exec] 0 0 0 0 0 0 0 0 0 0 0 0 0
[exec] 100 1 0 1 0 0 1 0 0 0 0 0 1100 1
0 1 0 0 1 0 0 0 0 0 0 0 1
[echo] Active Process Instance Count: 3
BUILD SUCCESSFUL
Total time: 1 second
```

Ant_DB_Cleanup_Project

Ant_DB_Cleanup_Project has the following folder structure:



- a. **lib:** Contains ant-contrib and xmltask JAR files. It is recommended to put the JAR files in ANT_HOME/lib folder. Adjust the path specified in typedef in invoke-db-cleanup-build.xml file accordingly.
- b. **Properties:** Folder for properties files. Property files are used by build.xml file. Property files are discussed in the next section.
- c. **Scripts:** This folder contains invoke-db-cleanup-build.xml.

Directory structure can be changed as per NN requirements. On changing the directory structure, change the corresponding paths in the ANT build file.

Properties files

run.properties

run.properties file describes all the file / folder paths referred to in the build.xml file. Following properties are currently included in the property file.

Property	Description
TIBCO-CONFIG-HOME	ActiveMatrix BPM config home location
DB-CLEANUP-BUILDFILE-LOCATION	Path to build.xml that is supplied by TIBCO for DB Cleanup

Invoke-db-cleanup-build.xml

Invoke-db-cleanup-build.xml exposed the following targets:

Target	Description
InvokeDBCleanupUtil	Wrapper target to invoke TIBCO provided build.xml

InvokeDBCleanupUtil

InvokeDBCleanupUtil invokes the DB Cleanup build file provided by TIBCO and is in turn invoked by InvokeDBCleanupUtilRemote and InvokeDBCleanupUtilLocal from Ant_Main_Project.

Input parameters:

Parameter Name	Required?	Default Value
appName	Yes	None
appVersion	No	None

If no version is specified, the target will scan the plugins folder to get the list of all the versions for the supplied application name.

It is expected that the target will always be invoked from build.xml from within Ant_Main_Project.

Note: Do not forget to change the JAR paths in taskdef in build.xml (provided by TIBCO for DB Cleanup).

References

1. TIBCO Documentation: <https://docs.tibco.com>
2. Apache Ant: <https://ant.apache.org/manual/index.html>
3. Ant-contrib JAR: <http://ant-contrib.sourceforge.net/>
4. Xmltask JAR: <http://www.oopsconsultancy.com/software/xmltask/>
5. JSch JAR: <http://www.jcraft.com/jsch/>