SAP BusinessObjects Business Intelligence platform
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SAP Business Intelligence Platform Translation Management Tool SDK Developer Guide

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1 Document History

Version	Date	Description
SAP BusinessObjects Business Intelligence platform 4.2	November 2015	Newly released guide.
SAP BusinessObjects Business Intelligence platform 4.2 Support Package 2	March 2016	• Updated the code snippet in Implementation Code for Importing InfoObjects from CMS [page 15] • Updated the code snippet in Sample Implementation Code [page 24]

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2 About this Guide

This guide gives you information on how to develop an application using Translation Management Tool (TMT) SDK. Earlier, translations that were saved in the Translation Management Tool, were not visible or editable through semantic layer SDK. Now, we are sharing functionalities that help you build your own application, which helps you to reintegrate modifications without reentering the same in Translation Management Tool. We also provide a new feature where in, you can analyze universe and extract a list of translations into an Excel format. So, using TMT SDK you can process multiple InfoObjects and perform translations.

2.1 Who Should Use this Guide

This guide is intended for developers, who can create their own application to perform translations. You can use both semantic layer SDK and translation manager SDK to programmatically update the translations of labels.

For Example: If customers or partners wants to automate their translation process, they can automate either by having translation APIs, or creating APIs that automate import and export of `XLIFF` files.

2.2 What this Guide Contains

This guide contains the following information:

- Introduction to Translation Management Tool (TMT) SDK
- System diagrams and development workflows in TMT SDK
- Creating, testing, and deploying TMT SDK
- How to read InfoObjects (.blx, .dfx, .unv) from local folders
- How to read InfoObjects from Central Management Server (CMS) repository
- Modifying InfoObjects Property Values and Property Status
- How to translate imported InfoObjects from local folders or CMS repository
- Saving changes in local folders
- Committing changes to the CMS repository
- Testing TMT SDK
- Exporting Translation Manager Document (.tmgr) to XLIFF file and reading `.tmgr` from XLIFF file
- Exporting Translation Manager Document (.tmgr) to XLS file and reading `.tmgr` from XLS file
- Limitations
- Troubleshooting Tips
- Frequently Asked Questions

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3 Technical Requirements

You must be familiar with the Translation Management Tool and the following basic workflows:

- Importing InfoObjects
- Translating InfoObjects
- Getting the Translation Manager Engine
- Saving InfoObjects as Translation Manager document (.tmgr) to local folders
- Committing Translation Manager Document (.tmgr) to the CMS
- Exporting Translation Manager Document (.tmgr) to XLIFF files

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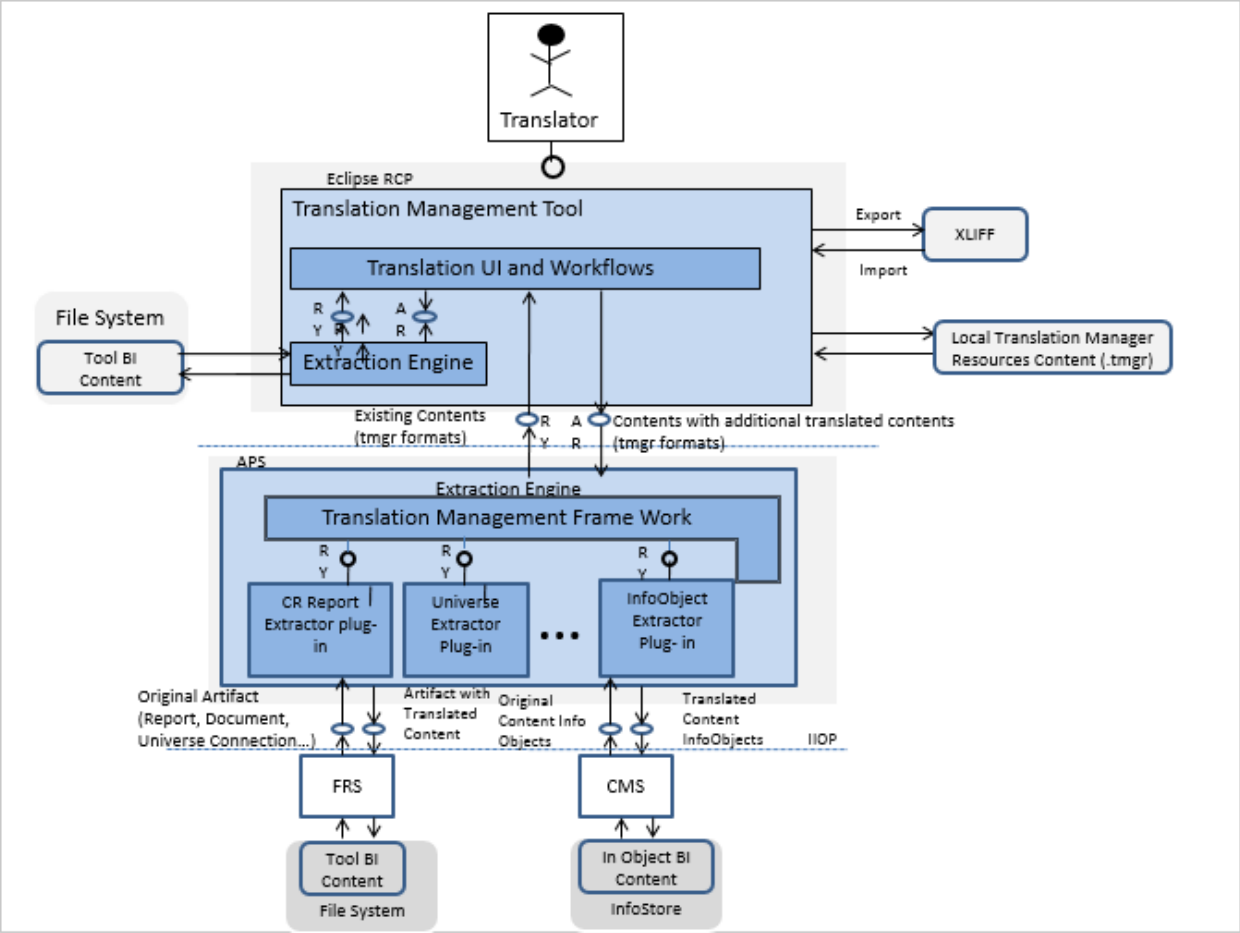
4 Introduction TMT Developer Guide

4.1 System Diagram



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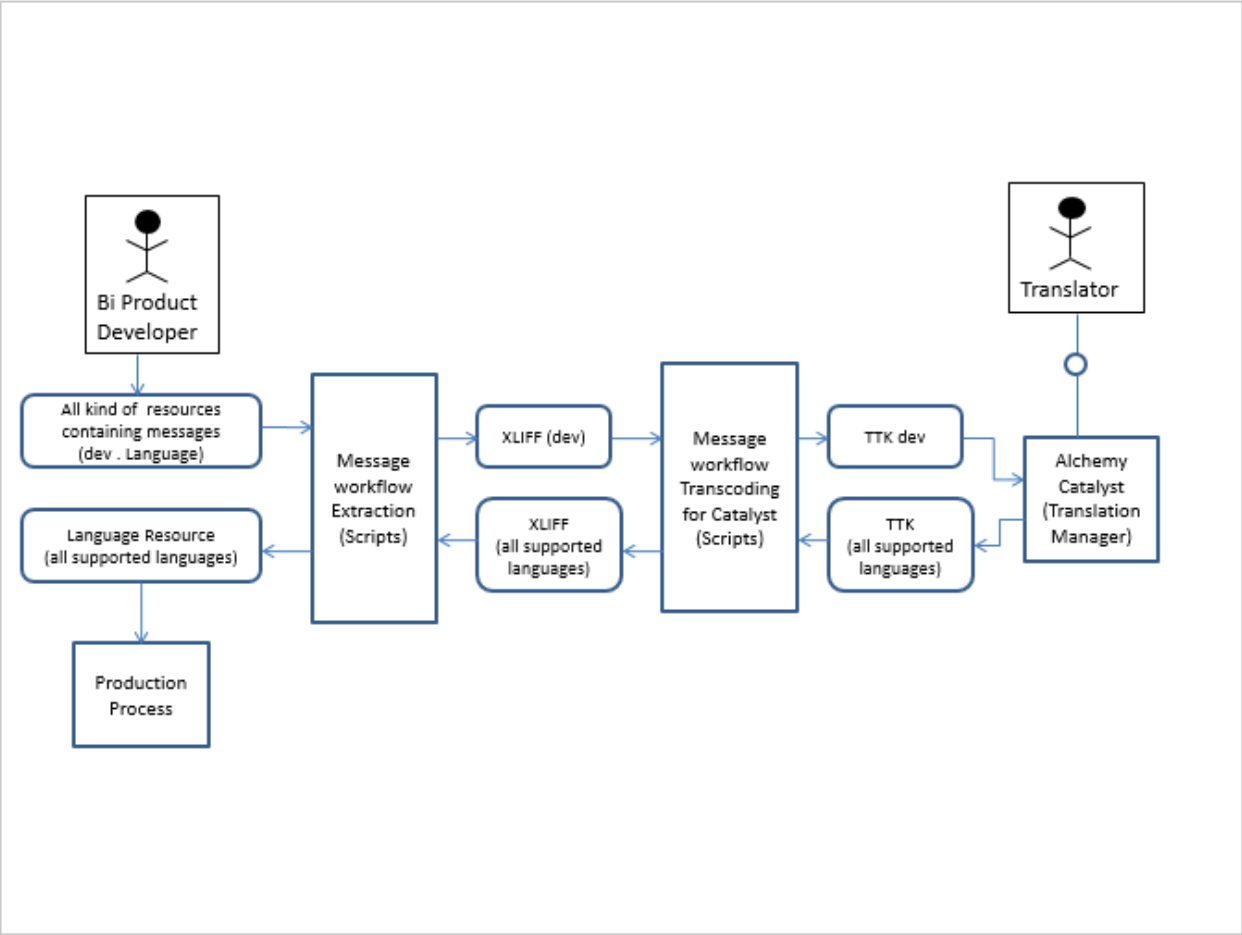
4.2 Translation Process



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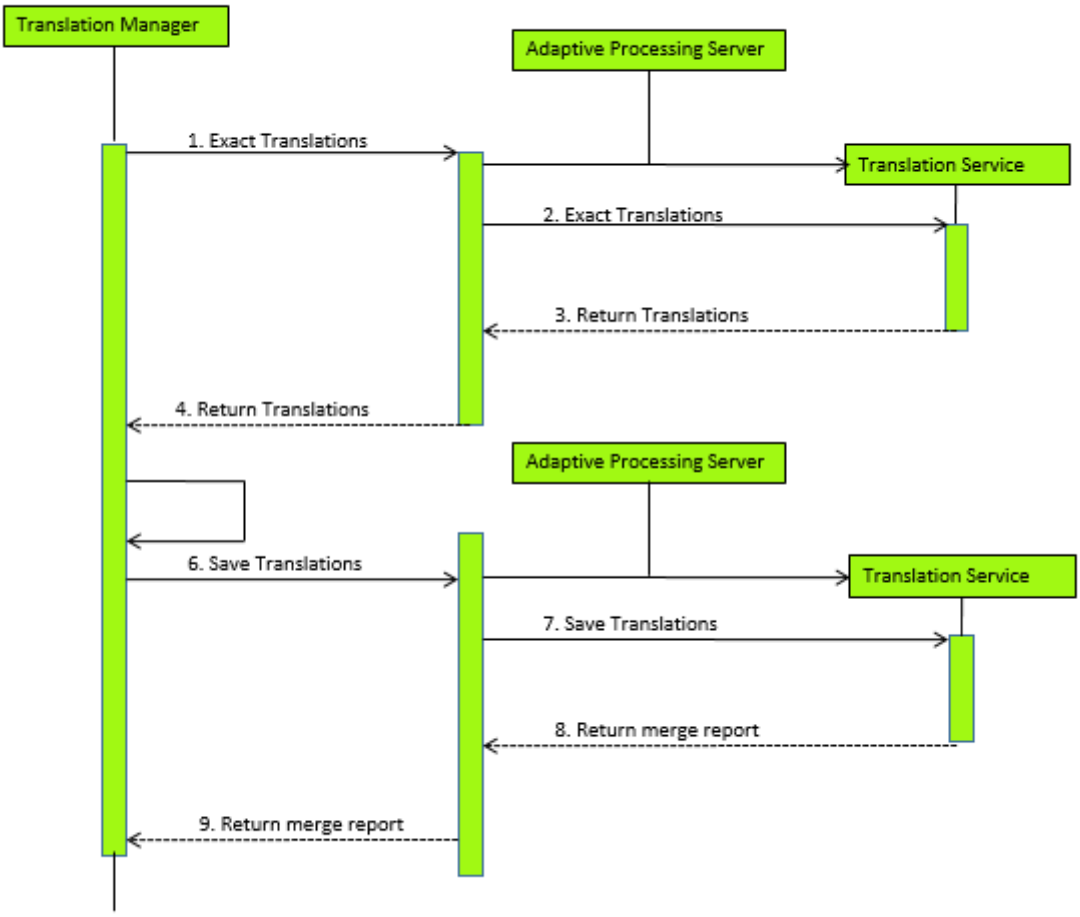
5 TMT SDK Development Workflow



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6 Developing TMT SDK

6.1 Setting up the TMT SDK Environment

Context

There are two ways to set up the TMT SDK environment:

Method1:

Procedure

1. While installing the BOE client, select SAP BusinessObjects BI Platform Java SDK. See the below screenshot for your reference.

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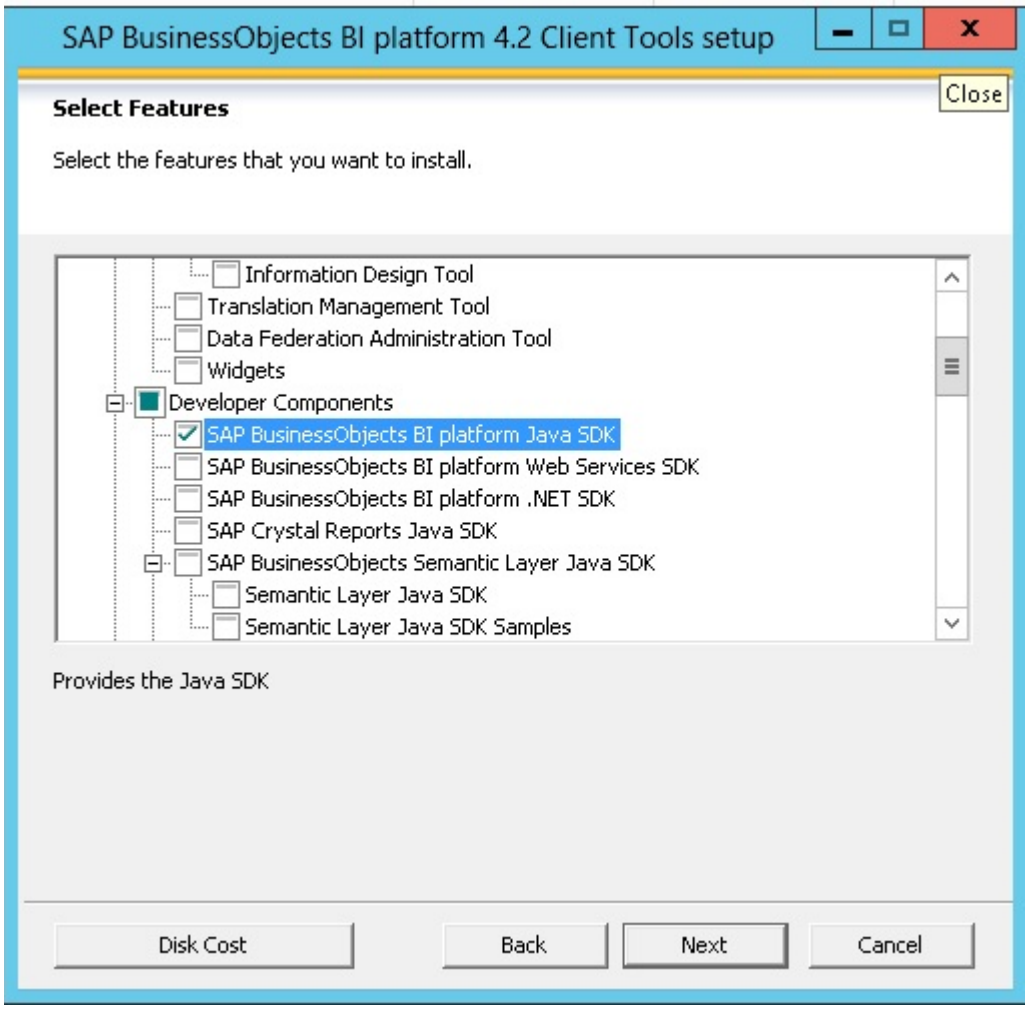

2. After installing the BOE client, you can see the Translation Manager SDK JARS in the location: `%BOINSTALLDIR%\java\lib\TranslationManagerSDK`

   The following are the list of JAR files that must be present in `%BOINSTALLDIR%\java\lib\TranslationManagerSDK` location:

   - aspectjrt.jar
   - axiom-api-1.2.13.jar
   - axiom-impl-1.2.13.jar
   - axis2-adb-1.6.2.jar
   - axis2-kernel-1.6.2.jar
   - bcm.jar
   - biplugins.jar
   - ceaspect.jar
   - cecore.jar
   - celib.jar
   - cesession.jar
   - com.businessobjects.dsl.commons.jar
   - com.businessobjects.mds.connection.jar
   - com.businessobjects.mds.datafoundation.jar

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- com.businessobjects.mds.datafoundationsecurityaccess.jar
- com.businessobjects.mds.entity.jar
- com.businessobjects.mds.parameter.jar
- com.businessobjects.mds.repository.jar
- com.businessobjects.mds.resource.jar
- com.businessobjects.mds.toolkit.jar
- com.businessobjects.mds.universe.jar
- com.businessobjects.transmgr.unv.cms.jar
- com.businessobjects.transmgr.unv.jar
- com.businessobjects.transmgr.webi.jar
- com.businessobjects.xi.sdk.jar
- com.sap.translation.cms.client.core.jar
- com.sap.translation.core.jar
- com.sap.translation.sdk.jar
- com.sap.translation.unx.cms.jar
- com.sap.translation.unx.jar
- com.sap.translation.unx.ui.jar
- commons-logging.jar
- corbaidl.jar
- cryptojFIPS.jar
- ebus405.jar
- i18n4j.jar
- logging.jar
- neethi-3.0.2.jar
- org.eclipse.emf.common_2.4.0.v200902171115.jar
- org.eclipse.emf.ecore_2.4.2.v200902171115.jar
- org.xmlpull_1.1.3.4.jar
- poi-3.9-20121203.jar
- SL_plugins.jar
- TraceLog.jar
- translation-service-client.jar
- wicdzcorelib.jar
- wsdl4j-1.6.2.jar
- XmlSchema-1.4.7.jar
- com.sap.translation.sdk.jar

Note

- The default directory for `%BOINSTALLDIR%`is `C:\Program Files (x86)\SAP BusinessObjects`.

3. Launch Eclipse (The SDK is tested using Eclipse SDK 3.4.2 version).
4. Choose *File* > *New* > *Java Project* to create a new Java project.

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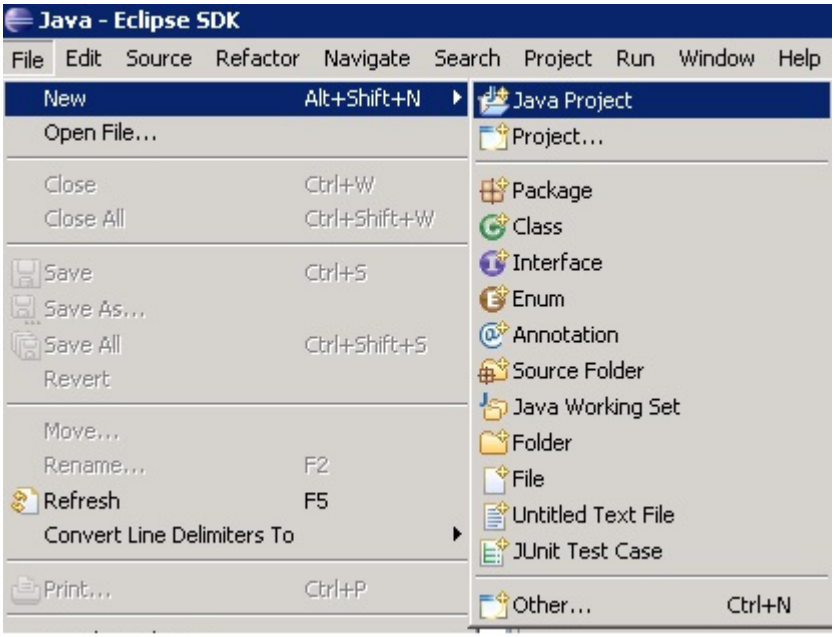
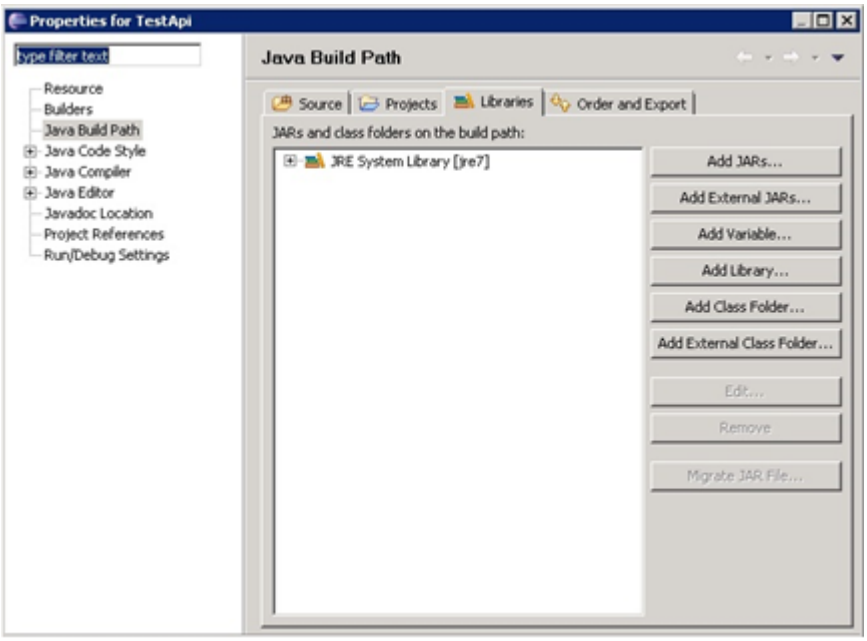


5. Add the required JAR files in the Java Build Path (shown in the figure).



6. To add the JAR files, choose *Libraries*, then choose *Add External JARs...* , and select the required JARS from `%BOINSTALLDIR%\java\lib\TranslationManagerSDK` (`C:\Program Files (x86)\SAP BusinessObjects\java\lib\TranslationManagerSDK`) path. Following screen shot helps you to add libraries in the build path.

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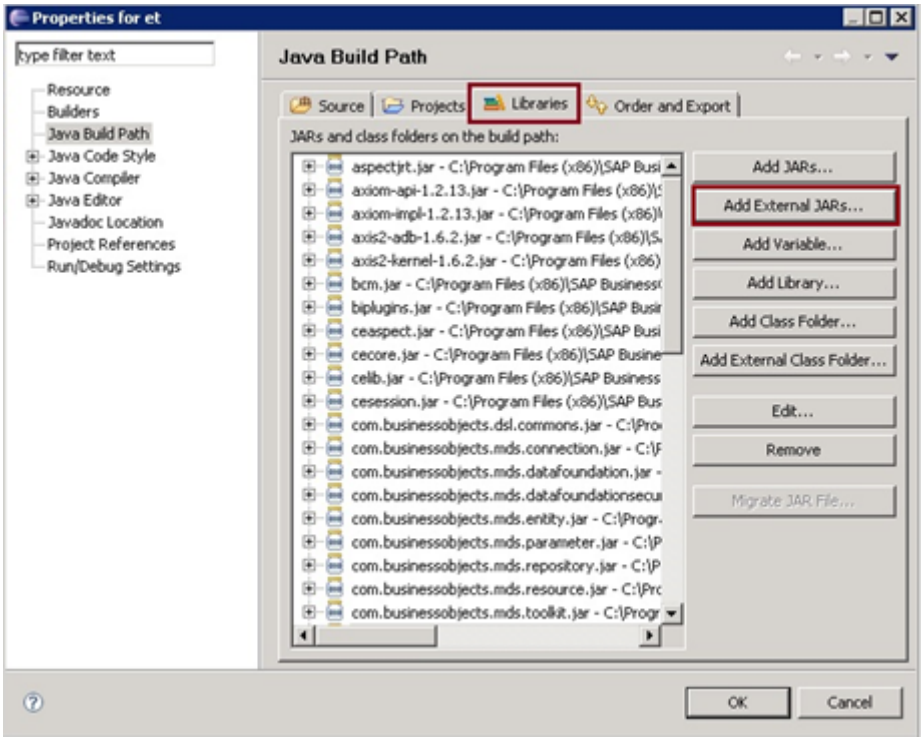

7. Click *OK*.
8. You have set the environment successfully. You can now use the available APIs to build your own application. For more information on TMT SDK, see *SAP Business Intelligent Platform Translation Manager SDK Javadoc* for your reference.

Method 2:

1. **Step 1:**
   Create a new batch file.
2. **Step 2:**
   Add the following details and save file as a `batch file (.bat)`:

   > **Note**
   >
   > This is available only for windows.

   - set LIBHOME=%BOINSTALLDIR%\java\lib\TranslationManagerSDK

     > **Note**
     >
     > By default “C:\Program Files (x86)\SAP BusinessObjects” is the “%BOINSTALLDIR%”.

   - set CLASSPATH=%LIBHOME%\aspectjrt.jar;%LIBHOME%\axiom-api-1.2.13.jar;%LIBHOME%\axiom-impl-1.2.13.jar;%LIBHOME%\axis2-adb-1.6.2.jar;%LIBHOME%\axis2-kernel-1.6.2.jar bcm.jar;%LIBHOME%\biplugins.jar;%LIBHOME%\ceaspect.jar;%LIBHOME%\cecore.jar;%LIBHOME%\celib.jar;%LIBHOME%\cesession.jar;%LIBHOME%\com.businessobjects.dsl.commons.jar;%LIBHOME%\com.businessobjects.mds.connection.jar ;%LIBHOME%\com.businessobjects.mds.datafoundation.jar;%LIBHOME%\com.businessobjects.mds.datafoundationsecurityaccess.jar;%LIBHOME%

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\com.businessobjects.mds.entity.jar;%LIBHOME%\com.businessobjects.mds.parameter.jar;
%LIBHOME%\com.businessobjects.mds.repository.jar
;%LIBHOME%\com.businessobjects.mds.resource.jar;%LIBHOME%
\com.businessobjects.mds.toolkit.jar;%LIBHOME%\com.businessobjects.mds.universe.jar;%LIBHOME
%\com.businessobjects.transmgr.unv.cms.jar;%LIBHOME%\com.businessobjects.transmgr.unv.jar;
%LIBHOME%\com.businessobjects.transmgr.webi.jar
;%LIBHOME%\com.businessobjects.xi.sdk.jar;%LIBHOME%\com.sap.translation.cms.client.core.jar;
%LIBHOME%\com.sap.translation.core.jar;%LIBHOME%\com.sap.translation.sdk.jar;%LIBHOME%
\com.sap.translation.unx.cms.jar;%LIBHOME%\com.sap.translation.unx.jar;%LIBHOME%
\com.sap.translation.unx.ui.jar
;%LIBHOME%\commons-logging.jar;%LIBHOME%\corbaidl.jar;%LIBHOME%\cryptojFIPS.jar;
%LIBHOME%\ebus405.jar;%LIBHOME%\i18n4j.jar;%LIBHOME%\logging.jar;%LIBHOME%
\neethi-3.0.2.jar;%LIBHOME%\org.eclipse.emf.common_2.4.0.v200902171115.jar;%LIBHOME%
\org.eclipse.emf.ecore_2.4.2.v200902171115.jar;%LIBHOME%\org.xmlpull_1.1.3.4.jar
;%LIBHOME%\poi-3.9-20121203.jar;%LIBHOME%\SL_plugins.jar;%LIBHOME%\TraceLog.jar;
%LIBHOME%\translation-service-client.jar;%LIBHOME%\wicdzcorelib.jar;%LIBHOME%
\wsdl4j-1.6.2.jar;%LIBHOME%\XmlSchema-1.4.7.jar;%LIBHOME%\com.sap.translation.sdk.jar
set PATH=C:\Windows\System32;%BOINSTALLDIR%;%PATH%
javac Tapi.java
java -cp C:\TestApiTests -Djava.library.path="C:\Windows\System32;%BOINSTALLDIR%" TApi

Note

- The “TApi.java” is a sample java file.

6.2 Creating TMT SDK Workflows

6.2.1 Implementation Code for Importing InfoObjects from CMS

Using the Translation Manager SDK, you can import multiple InfoObjects or single InfoObject.

Code Snippet for importing InfoObject from CMS is given below:

Sample Code

```
String strQuery=null;
ISessionMgr sessionManager = CrystalEnterprise.getSessionMgr();
ceEnterpriseSession =
sessionManager.logon("Administrator","Password1","10.160.209.188:6400","secEnterpr
ise");
ceEnterpriseSession.setLocale(Locale.ENGLISH);
IInfostore infostore = (IInfoStore) ceEnterpriseSession.getService("InfoStore");
strQuery = "select * from ci_infoobjects where si_name='" + docname + "'" +
"and        SI_PARENT_FOLDER='" + parentfolderid +"'";
```


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```
IInfoObjects ceInfoObjects = (IInfoObjects) infostore.query(strQuery);
if (ceInfoObjects.size() != 0)
infoObj = (IInfoObject) ceInfoObjects.get(0);
else
 //May be an application object
{
strQuery="select * from ci_appobjects where si_name='" + docname + "'" + "and
SI_PARENT_FOLDER='" + parentfolderid + "'";
ceInfoObjects = (IInfoObjects) infostore.query(strQuery);
if (ceInfoObjects.size() != 0)
infoObj = (IInfoObject) ceInfoObjects.get(0);
}
System.out.println("Importing  " + infoObj.getTitle() + "  " + infoObj.getKind()
+ " from CMS");
catch(Exception e)
{
return null;
}
```

6.2.2 Implementation Code for Importing InfoObjects from Local Folder

Using the translation manager SDK, you can import data foundation(.dfx), business layer(.blx) and universe documents(.unv) from local folder, and translation manager Document (.tmgr) to perform the translations.

Code snippets for importing .unv, .dfx, .blx, .tmgr:

Sample Code

```
//Importing the .unv file from local folder
File filepath = new File("C:\\Universes\\Univers2.unv");
TranslationSDKManager manager = new TranslationSDKManager();
ITMgrDocument tmgrdoc =
manager.loadArtifact(TranslatableEntity.UNIVERSE,filepath);
ITMgrEngine engine = ITMgrEngine.Factory.createInstance(tmgrdoc);
```

Sample Code

```
//Importing the .dfx file from local folder
File filepath = new File("C:\\Universes\\NConnection.dfx");
TranslationSDKManager manager = new TranslationSDKManager();
ITMgrDocument tmgrdoc =
manager.loadArtifact(TranslatableEntity.DATAFOUNDATION,filepath);
ITMgrEngine engine = ITMgrEngine.Factory.createInstance(tmgrdoc);
```

Sample Code

```
// Importing .blx from the local folder
File filepath = new File("C:\\Universes\\NConnection.blx");
TranslationSDKManager manager = new TranslationSDKManager();
ITMgrDocument tmgrdoc =
manager.loadArtifact(TranslatableEntity.UNIVERSE,filepath);
ITMgrEngine engine = ITMgrEngine.Factory.createInstance(tmgrdoc);
```


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Sample Code

```
//Importing .tmgr from the local folder
File filepath = new File("C:\\Universes\\NConnection.tmgr");
TranslationSDKManager manager = new TranslationSDKManager();
ITMgrDocument tmgrdoc =
manager.loadArtifact(TranslatableEntity.TRANSMGR,filepath);
ITMgrEngine engine = ITMgrEngine.Factory.createInstance(tmgrdoc);
```

6.2.3 Implementation Code for Extracting Translations From the InfoObject

Use the following code snippet to extract the Meta data translations from the InfoObject.

Sample Code

```
TranslationSDKManager manager = new TranslationSDKManager(ceEnterpriseSession);
InputStream translations = manager.extractTranslations(infoObj.getCUID());
return translations;
```

6.2.4 Implementation Code for Getting the Translation Manager Engine

After getting the metadata translations from InfoObject, you first need to get the translation manager document and then the translation manager engine from the document. Use the following code snippet to perform the operation:

Sample Code

```
Public static ITMgrDocument GetTmgrDoc (InputStream inputstream, IInfoObject
infoobj) throws TranslationException
{
try
{
ITMgrDocument tmgrdoc = null;
System.out.println("Saving as " + infoobj.getTitle() + ".tmgr file under C:\\sdk\
\ folder\n" );
FileOutputStream os = new FileOutputStream("C:\\sdk\\" + infoobj.getTitle() +
".tmgr");

byte[] buffer = new byte[1024];
int bytesRead;
//read from is to buffer
while((bytesRead = inputstream.read(buffer)) !=-1){
        os.write(buffer, 0, bytesRead);
 }
```


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```
//flush OutputStream to write any buffered data to file
 os.flush();
 os.close();
//Gets the Translation Manager Document
return manager.loadArtifact(TranslatableEntity.TRANSMGR,new File("C:\\sdk\
\"+infoobj.getTitle() + ".tmgr"));

 }
catch(FileNotFoundException
{
e.printStackTrace();
return null;
}
catch(IOException e1)
{
e1.printStackTrace();
return null;
}
 }
//Gets the Translation Manager Engine
ITMgrEngine
engine=TMgrEngine.Factory.createInstance(GetTmgrDoc(translations,infoObj));
```

6.2.5 Implementation Code for Getting and Setting Available locale, Visible and Fallback Locale

6.2.5.1 Setting and Getting Available Locale

You can add single or multiple locales from the available locales using the TMT SDK.

Example:

Sample Code

```
//Adds the Available Locale
engine.addAvailableLocale(Locale.US);
engine.getAvailableLocales(); //Getting the available locales
```

6.2.5.2 Setting the Translation Engine with the Translated Locale Value

You can set the Translation Engine with the value of translated locale.

Example:

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Sample Code

```
//Sets the Translation Engine with translated locale value
engine.setModifiedLocale(Locale.US);
```

6.2.5.3 Remove Available Locale

Using TMT SDK, you can remove single or multiple locales.

Example:

Sample Code

```
//Removes the Available Locale
engine.removeAvailableLocale(Locale.US);
```

6.2.5.4 Setting and Getting Visible locale

Using TMT SDK, you can set any locale as visible from available locales list for a given document.

Example:

Sample Code

```
//Sets the locale as visible
engine.setLocaleVisible(Locale.US,true);

//Gets the visible locales
engine.getVisibleLocales();
```

6.2.5.5 Setting and Getting Fallback locale

Using TMT SDK, you can set any locale as fallback from available locales list for a given document.

Note

If you have added single locale, by default the fallback locale is the original content language.

Example:

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Sample Code

```
//Sets the locale as fallback
engine.setFallbackLocale(Locale.US,true);  //Setting the fallback locale
//Gets the fallback locale
engine.getFallbackLocale();
```

6.2.6 Implementation Code for Getting and Setting the Property Values and Property Status of Entities

Using the Translation Manager SDK, you can get and set the property values and property status of entities in Translation Manager document (.tmgr).

Using the following code snippet, you can get and set Property Values of root entity from Translation Manager document (.tmgr) file:

Sample Code

```
System.out.println("--MODIFYING THE VALUES--WITH--"+name+"---AND--"+description);
Locale locales[] = FormLocales();
Object rootEntity = engine.getRoot();
IPropertyInfo[] propertyinforoot = engine.getLocalizedProperties(rootEntity);
if(propertyinforoot.length == 0)
{
Object[] obj = engine.getChilden(rootEntity);
if(obj.length > 0) //this means it is only rootentity
{
for(int index=0;index < obj.length;index++)
{
IPropertyInfo[] propertyInfo = engine.getLocalizedProperties(obj[index]);
for(int index1=0; index1
 < locales.length; index1++)
{
System.out.println("Id is -->" + propertyInfo[0].getId());
System.out.println("Description is --->" + propertyInfo[1].getId());
System.out.println("Locales index is --->" +
locales[index1].getDisplayLanguage());
propertyInfo[0].setValue(obj[index],locales[index1],name
+locales[index1].getCountry());
propertyInfo[1].setValue(obj[index],locales[index1],description
+locales[index1].getCountry());
}
}
}
}
else
{

IPropertyInfo[] propertyInfo = engine.getLocalizedProperties(rootEntity);
for(int index1=0; index1 < locales.length; index1++)
{
            propertyInfo[0].setValue(rootEntity,locales[index1],name
+locales[index1].getCountry());

propertyInfo[1].setValue(rootEntity,locales[index1],description
+locales[index1].getCountry());
}
```


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```
}
```

Using the following code snippet, you can get and set Property status of root entity from Translation Manager document (.tmgr):

Sample Code

```
System.out.println("--MODIFYING THE STATUS--WITH--"+status.name());
Locale locales[] = {Locale.US,Locale.FRANCE};
Object rootEntity = engine.getRoot();
IPropertyInfo[] propertyinforoot = engine.getLocalizedProperties(rootEntity);
if(propertyinforoot.length==0)
{
Object[] obj = engine.getChilden(rootEntity);
if(obj.length > 0) //this means it is only rootentity
{
for(int index=0;index < obj.length;index++)
{
IPropertyInfo[] propertyInfo = engine.getLocalizedProperties(obj[index]);
for(int index1=0; index1 < locales.length; index1++)
{
propertyInfo[0].setStatus(obj[index],locales[index1],status);
propertyInfo[1].setStatus(obj[index],locales[index1],status);
}
}
}
}
else
{

IPropertyInfo[] propertyInfo = engine.getLocalizedProperties(rootEntity);
for(int index1=0; index1 < locales.length; index1++)
{
propertyInfo[0].setStatus(rootEntity,locales[index1],status);
propertyInfo[1].setStatus(rootEntity,locales[index1],status);
}
}
```

6.2.7 Implementation Code for Saving Translation Manager Document (.tmgr file) to the Local Folder

Using the following code snippet, you can save the translation manager document (.tmgr) file locally, open the file, and perform translation.

Sample Code

```
//Saves the translation manager document(.tmgr).
engine.save();
```


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6.2.8 Implementation Code for Exporting Translation Manager Document (. tmgr file) to the CMS

Using the following code snippet, you can export the InfoObjects to the system repository after performing translations.

Sample Code

```
try
{
engine.save();
ByteArrayOutputStream tmgrStream = new ByteArrayOutputStream();
FileDocumentFactory.exportToTMgr(engine,tmgrStream);
InputStream saveResult =
manager.saveTranslations(infoObj.getCUID(),tmgrStream,true);
System.out.println("InfoObject cuid is " + infoObj.getCUID());
TMgrMergeReport mergeResult = new TMgrMergeReport(saveResult);
if(mergeResult.hasConflict())
{
System.out.println("Conflict has occurred");
}
else
{
System.out.println("Translations are saved");
 }
catch(Exception e)
{
e.printStackTrace();
}
```

6.2.9 Implementation Code for Exporting Translation Manager Document (.tmgr file) to XLIFF file

Using the following code snippet, you can export the translation manager document to XLIFF file.

Sample Code

```
try
{
IEntityInfo info = engine.getEntityInfo(engine.getRoot());
IXliffExporter exportxliff = manager.createXliffExporter();
exportxliff.setSourceLocale(Locale.US,true);
exportxliff.setTargetLocale(Locale.ITALY,true);
File path = new File("C:\\sdk\\sundar.xliff");
exportxliff.write(info,path);
}
catch(TranslationException ex)
{
ex.getMessage();
}
```


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6.2.10 Implementation Code for Importing Translation Manager Document from XLIFF file

Using the following code snippet, you can import the translation manager document from XLIFF file:

Sample Code

```
IXliffImporter importxliff = manager.createXliffImporter();
File path3 = new File("C:\\sdk\\sundar.xliff");
File path2 = new File("C:\\sdk\\POC4.tmgr");

ITMgrDocument tmgrdocim=manager.loadArtifact(TranslatableEntity.TRANSMGR,path2);
TMgrEngine engine2 = new TMgrEngine(tmgrdocim);
engine2.save();
importxliff.load(engine2,path3);
```

6.2.11 Implementation Code for Exporting Translation Manager Document to XLS file

Using the following code snippet, you can export the translation manager document to XLS file.

Note

The Excel (.xlsx) format is not supported.

Sample Code

```
IExcelExporter exportexcel = manager.createExcelExporter();
path = new File("C:\\sdk\\sundar.xls");
Locale loc[] = { Locale.JAPAN,Locale.ITALY};
exportexcel.setSourceLocale(Locale.US);
exportexcel.setTargetLocale(loc);
exportexcel.write(engine, path);
```

6.2.12 Implementation Code for Importing Translation Manager Document from XLS file

Using the following code snippet, you can import the translation manager document from Excel (.xls) file:

Sample Code

```
IExcelImporter importexcel = manager.createExcelImporter();
importexcel.load(engine,path,new File("C:\\sdk\\excel.properties"));
engine.saveAs(new File("C:\\sdk\\POCXLS.tmgr"));
```


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6.2.13 Sample Implementation Code

Sample implementation code to extract the InfoObject from CMS, get the meta data translations, set available ,fallback and visible locale, setting the property status, saving the engine and exporting it to CMS

Sample Code

```
String strQuery=null;
ISessionMgr sessionManager = CrystalEnterprise.getSessionMgr();
ceEnterpriseSession =
sessionManager.logon("Administrator","Password123","localhost:
6400","secEnterprise");
ceEnterpriseSession.setLocale(Locale.ENGLISH);
IInfostore infostore = (IInfoStore) ceEnterpriseSession.getService("InfoStore");
strQuery = "select * from ci_infoobjects where si_name='" + docname + "'" + "and
SI_PARENT_FOLDER='" + parentfolderid +"'";

IInfoObjects ceInfoObjects = (IInfoObjects) infostore.query(strQuery);
if (ceInfoObjects.size() != 0)
infoObj = (IInfoObject) ceInfoObjects.get(0);
else  //May be an application object
{
strQuery="select * from ci_appobjects where si_name='" + docname + "'" + "and
SI_PARENT_FOLDER='" + parentfolderid + "'";
ceInfoObjects = (IInfoObjects) infostore.query(strQuery);
if (ceInfoObjects.size() != 0)
infoObj = (IInfoObject) ceInfoObjects.get(0);
}
System.out.println("Importing  " + infoObj.getTitle() + "  " + infoObj.getKind()
+ " from CMS");

manager = new TranslationSDKManager(ceEnterpriseSession);
            InputStream translations =
manager.extractTranslations(infoObj.getCUID());
ITMgrEngine engine =
ITMgrEngine.Factory.createInstance(GetTmgrDoc(translations,infoObj));
engine.removeAvailableLocale(Locale.US);
engine.addAvailableLocale(Locale.US);
engine.setFallbackLocale(Locale.US);
engine.setVisibleLocale(Locale.US,true);
IPropertyInfo[] propertyInfo = engine.getLocalizedProperties(rootEntity);
propertyInfo[0].setStatus(rootEntity,Locale.US,status);
engine.setModifiedLocale(Locale.US);
engine.save();
ByteArrayOutputStream tmgrStream = new ByteArrayOutputStream();

FileDocumentFactory.exportToTMgr(engine,tmgrStream);

InputStream saveResult =
manager.saveTranslations(infoObj.getCUID(),tmgrStream,true);

System.out.println("InfoObject cuid is " + infoObj.getCUID());

TMgrMergeReport mergeResult = new TMgrMergeReport(saveResult);

if(mergeResult.hasConflict())

{
```


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```
System.out.println("Conflict has occurred");
}
else
{
System.out.println("Translations are saved");

}
```


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7 Testing TMT SDK Workflows

Before testing, you need to check for the following requirements:

1. SAP Business Intelligence Server must be installed (local or remote), and CMS must be running.
2. Adaptive Processing Server must have translation service running.
3. If translation service JAR is present under `%BOINSTALLDIR%\ SAP BusinessObjects Enterprise XI 4.0\java\pjs\services\TranslationService\lib path`.

> **Note**
>
> - Client and server installation must be available (Server can be installed locally or remotely)
> - Ensure that Adaptive Processing Server (APS) must be hosting the translation service in the server machine and also corresponding plugins needed for translation is present in the server.

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8 Using TMT SDK

Now that you have developed and tested your application, you can use this application to perform the following workflows:

- Importing the InfoObject from CMS:Implementation Code for Importing InfoObjects from CMS [page 15]
- Importing the InfoObject from local folder:Implementation Code for Importing InfoObjects from Local Folder [page 16]
- Extracting meta data translations: Implementation Code for Extracting Translations From the InfoObject [page 17]
- Getting the Translation Manager Engine:Implementation Code for Getting the Translation Manager Engine [page 17]
- Setting and Getting the available locale:Setting and Getting Available Locale [page 18]
- Setting the Translation Engine with the Translated Locale Value:Setting the Translation Engine with the Translated Locale Value [page 18]
- Setting and Getting the visible locale:Setting and Getting Visible locale [page 19]
- Setting and Getting the fallback locale:Setting and Getting Fallback locale [page 19]
- Setting and Getting the property value and property status:Implementation Code for Getting and Setting the Property Values and Property Status of Entities [page 20]
- Saving the Translation Manager Document (.tmgr) file:Implementation Code for Saving Translation Manager Document (.tmgr file) to the Local Folder [page 21]
- Exporting to XLIFF file:Implementation Code for Exporting Translation Manager Document (.tmgr file) to XLIFF file [page 22]
- Importing from XLIFF file:Implementation Code for Importing Translation Manager Document from XLIFF file [page 23]
- Exporting to XLS file:Implementation Code for Exporting Translation Manager Document to XLS file [page 23]
- Importing from XLS file:Implementation Code for Importing Translation Manager Document from XLS file [page 23]
- Exporting translations back to the CMS:Implementation Code for Exporting Translation Manager Document (.tmgr file) to the CMS [page 22]

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9 Limitations

The following are the limitaions for TMT SDK:

- Using Translation Manager SDK, you cannot open a Web Intelligence file (.wid) from a local folder and do the translations.
- When exporting Translation Manager Document (.tmgr) document to XLS file, the property values are saved in XLS file, but property status is not saved in XLS file.
- Once the locale is added using SDK, if you attempt to add the same locale, no exception is thrown for now. However, you can customize the SDK code to throw an error in this particular situation.
- Using SDK, if you try to remove a Locale, which is not yet added, no exception is thrown. However, you can use the below SDK code to avoid this situation.

Sample Code

```
Locale loc[] = engine.getAvailableLocales();
Locale toremove = Locale.US;
for(int index = 0; index < loc.length; index++)
 {
   If(toremove.getDisplayName().compareTo(loc[index].getDisplayName() ) == 0)
           Engine.removelocale(toremove);
                 else
            Throw TranslationException(e);
 }
```


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10 Troubleshooting Tips

- **Problem:**
  While writing the Translation Manager SDK code, `ClassNotFoundException` is thrown.
  Action:
  Make sure that you have added all the required JAR files under `%BOINSTALLDIR%\java\lib\TranslationManagerSDK` is set in the `<CLASSPATH>`.
- **Problem:**
  Exception is thrown while importing InfoObject from Central Management Server (CMS).
  Action:
  Make sure that the CMS is up and running and also, the translation service is available for Adaptive Processing Server (APS).
- **Problem:**
  When `engine.save ()` is used, not able to locate where the Translation Manager Document (.tmgr file) is saved.
  Action:
  By default, the Translation Manager Document gets saved under `C:\Users\Administrator` path.
- **Problem:**
  The Translation Manager Document (.tmgr file) is corrupted; opening a Translation Manager Document (.tmgr file) through SDK fails.
  Action:
  Remove all the available locales, add them again, and then perform the translations.
- **Problem:**
  Encountered an error while executing a workflow.
  Action:
  Try executing the same workflow using Translation Management Tool (TMT) to verify whether it works fine on TMT.
- **Problem:**
  Encountering `NULLPointer` Exception.
  Action:
  Make sure that the InfoObject from CMS is imported successfully, before proceeding to get the meta data from the InfoObject.

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11 Frequently Asked Questions

1. *How to make sure all JAR Files are available for Translation Manager SDK to work?*
   Once you install Business Objects Client, click *PlatformJavaSDK*, and make sure all the relevant JAR files are present under `%BOINSTALLDIR%\java\lib\TranslationManagerSDK`. The JAR file list is present in the *Setting up the TMT SDK Environment* section of this guide.
2. *How to make sure Adaptive Processing Server has translation service running?*
   Once you install Business Objects Server locally or remotely perform the following to check whether the translation service is running.:
   1. Launch Central Management Console (CMC) portal.
   2. Select *Servers*.
   3. Under servers list, choose *Core Services* then choose *Adaptive Processing Server*.
   4. Right click on *Adaptive Processing Server* under *Services label*, choose *Metrics* to see the list of services hosted.
3. *How to do the basic workflows using Translation Manager SDK?*
   You must first get the `ITMgrEngine` using the Translation Manager APIs. Once you have this, using the `ITMgrEngine` you can perform all the operations listed under **Creating TMT SDK Workflows** section.

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