Explain ImpEx?

Integrated text-based Import / Export extension is called impex.

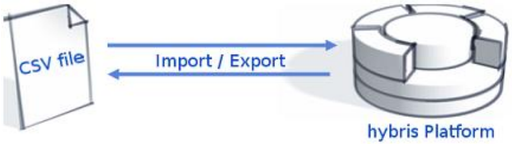
ImpEx engine allows creating, updating, removing and exporting platform items such as customer, product or order data **to & from** comma-separated value (CSV) data files, both during run time and during the initialization or update process.

Hybris provides extension called “**Impex**” inside **platform/ext** folder.

Impex import = Always data flows into Hybris system. **Impex export** = Always data flows out of Hybris system.

Key Features:

- ✓ Import & Export hybris Commerce Suite data from and into CSV files.
- ✓ To feed data into DB we go for impex.
- ✓ Impex file is developed based on the "**BeanShell Script**".
- ✓ **ImpEx extension** is a **converter** between items in hybris & CSV file, and other way round as show: -



By using Impex extension it is easy to:

- ✓ Update data at run time
- ✓ Creating initial data for project / migrating existing data from one hybris into another.

Q: Why do we need to Import & Export?

- ✓ Any ecommerce **site** will have a **data** like products, customer, regions, countries, promotions etc…
- ✓ All this data should be inserted into **Hybris system** to display it on the **site**.
- ✓ Import data **multiple times** into Hybris System.
- ✓ To **insert** this kind of data into hybris system, we go for **Impex Import**.
- ✓ We can **insert data** either at the **run time** or **during initialization** or **during update** process.
- ✓ Whenever we need to take the backup of data, we have to **export** data into csv files so that later it can be imported into Hybris system.
- ✓ If we are doing initialization, it is recommended to **take data backup** using **Impex Export**.
- ✓ Once the initialization is done, we can import the data back to hybris system.

Q: What are different types of Data Languages?

DML (Data Manipulation Language) = select, insert, update, delete etc.
DDL (Data Definition Language) = create, alter, drop, truncate etc.
DCL (Data Control Language) = grant, revoke
TCL (Transaction Control Language) = commit, rollback, savepoint etc.

Note: - Impex is for Load data / Take a backup.

items.xml -- Used for DDL (Table Creation). **impex** --- Load data (DML). **Flexible Search** – Select.

Q: How to insert 100 Records?

insert into tablename(Col1, COl2...) values (va1, va2...);
Insert into tablename(Col1, COl2...) values (va1, va2...);
....100 times....

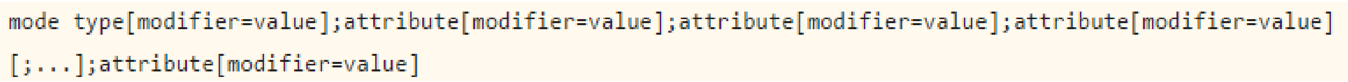
In Hybris =

insert_update itemtype;att1;att2;...;10;20;...; (This is Syntax if **att** is automatic type)
insert_update itemtype;att1;att2;...;1,2,3;4,5,6;...; (This is Syntax if **att** is collection type)
insert_update itemtype;att1[lang=en];att1[lang=hin];att2;...;product;hello;abc...;(This is the syntax if att1 is multiple language support)

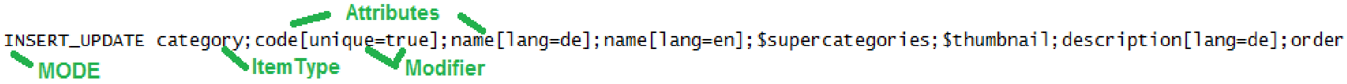
Note: - Hybris allows us to change the delimiters (; / , / # / ...)

Q: What are the Terminologies (or) Jargons used in ImpEx?

- ✓ **Headers** in header section =



```
mode type[modifier=value];attribute[modifier=value];attribute[modifier=value];attribute[modifier=value]
[;...];attribute[modifier=value]
```



```
INSERT_UPDATE category;code[unique=true];name[lang=de];name[lang=en];$supercategories;$thumbnail;description[lang=de];order
```

  - ✓ **Mode** = Tells what is to be done with the following value lines (insert, update, and so on)
    - ○ **INSERT** = Used to insert record into DB. If record already exists it throws an exception.
    - ○ **UPDATE** = Used to update existing record. It throws exception if record does not exist.
    - ○ **INSERT_UPDATE** = Most preferred 1 for insertion or update. There won't be exception.
    - ○ **REMOVE** = Used to remove existing records. We need to specify 1 unique attribute to remove the record.
  - ✓ **Type / ItemType** = Defines type of item to be processed (Category, Product, Media and so on)
  - ✓ **Attribute** = Defines attributes of the **item type** which are defined in **items.xml** file. Each attribute **specified** will get the **values affected** on corresponding columns in DB.
  - ✓ **Modifier** = Used to specify **additional info** for the attributes like specifying attribute uniqueness using unique=true.

    Q: How can we specify multiple modifiers?

    1st way (Comma Separated) = attribute[modifier1=value1,modifier2=value2,modifier3=value3];

    2nd way (Separate bracket []) = ;attribute[modifier1=value1][modifier2=value2];

  Note: - Header is applicable for all the value lines till next header appears in the file. 1 file can have any number of headers.

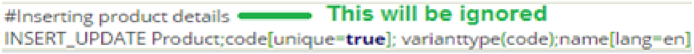
- ✓ **Lines of values** value line section = There could be **1/ more** value lines in the file.

  Each value line represents **one row of data** in table.

  Each field in the value line is separated by **semi colon** and represents the data into **one column**.

Note: - Semi colon should not be there **for last field**. **Space** is also considered as **value of the field**.
Each line should have **same number** of fields. If **field contains** any **line breaks** or quotes, then enclose such fields in **double quotes**.

- ✓ **Comments** = A comment starts with hash symbol #.



```
#Inserting product details
INSERT_UPDATE Product;code[unique=true]; varianttype(code);name[lang=en]
```

This will be ignored

- ✓ **Macro** definitions = Used to define the **value at one place** and use the **macro in all the places**.
  How to define max size for stack in C? = #define MAX 10000000. Macro is more like constant.
  It's preprocessor. Used to distinguish lines which need preprocessing before actual compilation begins.
  It helps to eliminate writing same lines **again & again**.
  Advantage with macro? == If you change 1, it replaces at run time all the times during runtime.
  Macros starts with **"$"** and they are referenced by **$macroName.**
  Macro must be **first statement** in **impex** file. We can have **any number** of macros.
  $catalog=catalog(id) → Defining macro called Catalog.
  $catalogVersion=catalogVersion($catalog,version) → Defining macro called "catalogVersion".
  INSERT Product; code; $catalogVersion --- Header
  Wherever term **$catalogVersion** appears, it is **replaced** by: **catalogVersion(catalog(id),version)**

Q: Explain how data feeding can be done?

- ✓ **1st way = Through HAC**
  → hMC (http://localhost:9001) → Console → ImpEx Import → Copy the ImpEx Statement → Validate → Impex Import
- ✓ **2nd way = Through HMC**
  -- HMC (http://localhost:9001/hmc/hybris) -- System -- Extract System -- Tools -- Import -- New Window is opened -- Import File -- New window opened -- File -- Select Impex file -- Upload File -- Start -- Your record is successfully uploaded.
- ✓ **3rd way = Programmatic Way / ImpEx approach**
  We can configure the i**mpex's** to load during **Initialization** and **update** process through code.

Q: Explain Convention over Configuration

The **Convention** over **Configuration** principal is adopted in SAP Hybris Commerce to simplify and reduce the need for writing configuration files. As a result, **ImpEx** files for **essential** & **project** data can be prepared without the need for additional data configuration.

During the **initialization** & **update** = Platform looks for **ImpEx files** in the <extension_name> /resources/impex folder. **In particular:**

For Essential Data = platform scans **<extension_name> /resources/impex** folders for files with names that match pattern **essentialdata*.impex** & imports files during essential data creation.

For Project Data = Platform scans **<extension_name> /resources/impex** folders for files with names that match pattern **projectdata*.impex** & imports files during the project data creation.

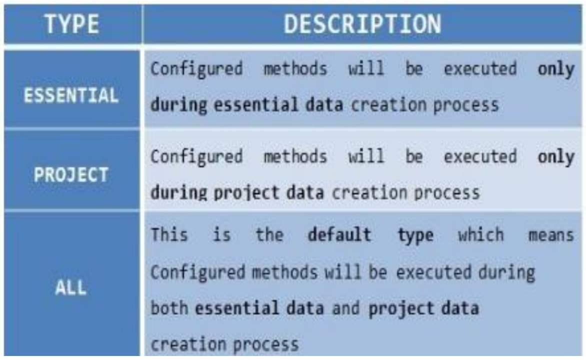
The **ImpEx directory** does not exist by default. You must create it and copy files to it.

Example: - Let's say we have the following folder structure:

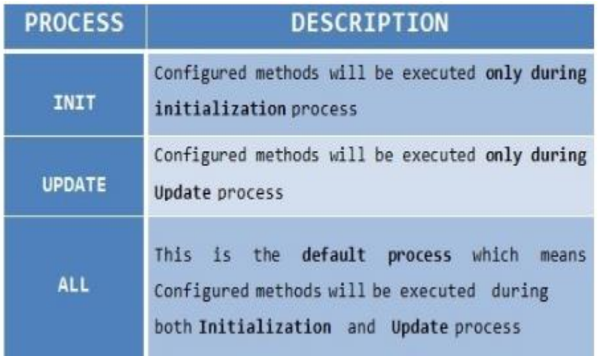
resources/impex/essentialdataOne.impex	resources/impex/essDataOne.impex
resources/impex/DataOne.csv	resources/impex/projectdataOne.impex

Files located in **essentialdataOne.impex** & **projectdataOne.impex** are imported during the essential and project data imports respectively.

Q: What is Type & Process?



TYPE	DESCRIPTION
ESSENTIAL	Configured methods will be executed **only during essential data** creation process
PROJECT	Configured methods will be executed **only during project data** creation process
ALL	This is the **default type** which means Configured methods will be executed during both **essential data** and **project data** creation process

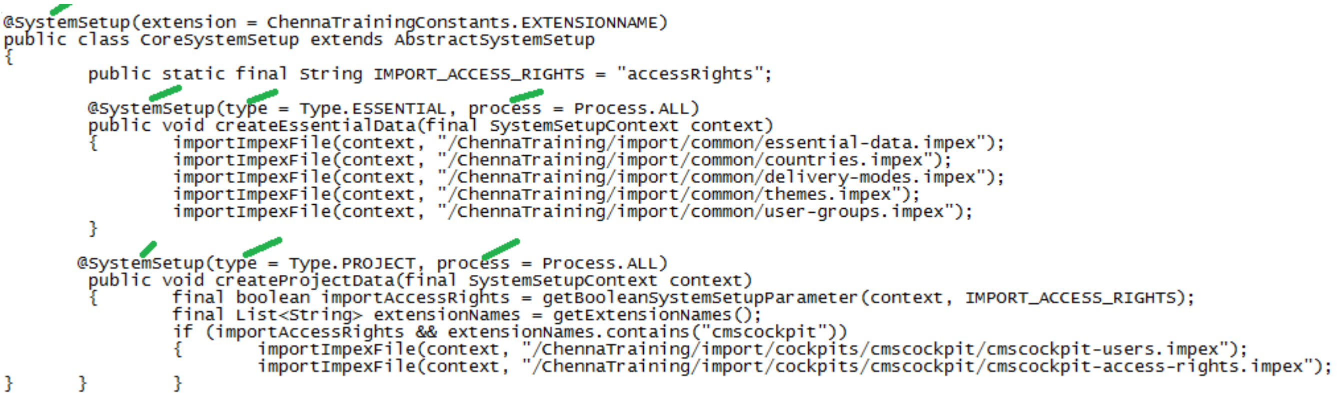


PROCESS	DESCRIPTION
INIT	Configured methods will be executed **only during initialization** process
UPDATE	Configured methods will be executed **only during Update** process
ALL	This is the **default process** which means Configured methods will be executed during both **Initialization** and **Update** process

Note: - Hybris Provides a class "**CoreSystemSetup.java & InitialDataSystemSetup.java"** to achieve this.

Q: What are Steps to configure an impex to **import** during initialization / Update process (or how control what an extension is doing during the initialization and update process)?

Step 1 = Create a class & **annotate with @SystemSetup** & Create public methods & **annotate with @SystemSetup** by specifying "**Type**" and "**Process**".



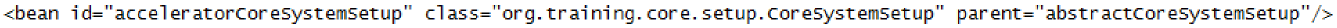
```
@SystemSetup(extension = ChennaTrainingConstants.EXTENSIONNAME)
public class CoreSystemSetup extends AbstractSystemSetup
{
        public static final String IMPORT_ACCESS_RIGHTS = "accessRights";

        @SystemSetup(type = Type.ESSENTIAL, process = Process.ALL)
        public void createEssentialData(final SystemSetupContext context)
        {       importImpexFile(context, "/ChennaTraining/import/common/essential-data.impex");
                importImpexFile(context, "/ChennaTraining/import/common/countries.impex");
                importImpexFile(context, "/ChennaTraining/import/common/delivery-modes.impex");
                importImpexFile(context, "/ChennaTraining/import/common/themes.impex");
                importImpexFile(context, "/ChennaTraining/import/common/user-groups.impex");
        }

       @SystemSetup(type = Type.PROJECT, process = Process.ALL)
        public void createProjectData(final SystemSetupContext context)
        {       final boolean importAccessRights = getBooleanSystemSetupParameter(context, IMPORT_ACCESS_RIGHTS);
                final List<String> extensionNames = getExtensionNames();
                if (importAccessRights && extensionNames.contains("cmscockpit"))
                {       importImpexFile(context, "/ChennaTraining/import/cockpits/cmscockpit/cmscockpit-users.impex");
                        importImpexFile(context, "/ChennaTraining/import/cockpits/cmscockpit/cmscockpit-access-rights.impex");
}       }       }
```

Note: - In above **both** methods will be executed during **Initialization** process but 1 will be executed during **essential data** creation process. Other will be executed during **project data** creation process.

We passed a parameter to a method of type **SystemSetupContext** which can be used to get some additional details like **user selected** parameter value.

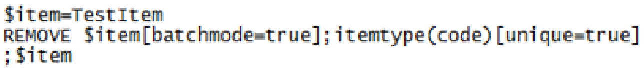
Step 2 = Register the class which is annotated with **@SystemSetup** as a spring bean

hybris\bin\custom\training\chennatraining\resources\chennatraining-spring.xml

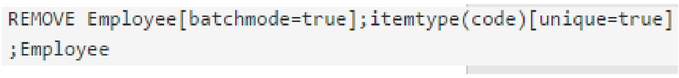


```
<bean id="acceleratorCoreSystemSetup" class="org.training.core.setup.CoreSystemSetup" parent="abstractCoreSystemSetup"/>
```

Q: How to remove all data (all records) from the itemtype?



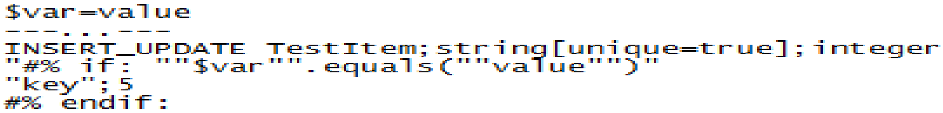
```
$item=TestItem
REMOVE $item[batchmode=true];itemtype(code)[unique=true]
;$item
```



```
REMOVE Employee[batchmode=true];itemtype(code)[unique=true]
;Employee
```

Contact us for more information → chennareddytraining@gmail.com (Java–Salesforce–SAP Portal–UI5/Fiori–Hybris)

Q: Explain conditional Impex?



```
$var=value
---...---
INSERT_UPDATE TestItem;string[unique=true];integer
"#% if: ""$var"".equals(""value"")"
"key";5
#% endif:
```

Note: - In ImpEx every line is **auto commit**. Let's say an ImpEx is having 10000 lines of code. 7000 lines executed. after that 1 line is having error. By default, after that statements will not be executed.

Q: Where to create ImpEx? = **(1)** In Core – chennatrainingcore **(2)** In Initialdata – chennatraininginitialdata

Q: How to take backup?. We created 1000 products & want to take backup?

Go to ImpEx -- Select the Header (Select macro if any) -- hAC -- ImpEx Export, paste it -- Validate Content -- Export Content, Download the Zip file (It will have all). CVS File Contain the data. ***.impex** file will have the header.

Note: - We can write all the ImpEx (Categories, Products, Images...) in single file. But that is not best practice. For Readability use separate ImpEx files.

Q: Impex object methods?

- ✓ impex.setCurrentHeader(HeaderDescriptor).
  impex.setCurrentHeader(String)
  Used to replace current header.
  Eg- U can conditionally use INSERT/UPDATE modes depending on data
- ✓ impex.setValueLinesToSkip(int) = How many value lines should be skipped.
- ✓ impex.getLastImportedItem() = Returns the last imported item (of Item type)
- ✓ impex.isSecondPass() = If csv data arsed again for resolving previously unresolvable item references.
- ✓ impex.discardNextLine() = Next line won't be processed.
- ✓ impex.includeSQLData(url,user,password,JDBCdriver,sql) = Initialize parameters & fires an SQL with DB.
- ✓ impex.includeSQLData(sql) = The alternative way of firing a statement. To use with initDatabase(..).
- ✓ impex.includeExternalData(file, encoding, lineToSkip) = Reads values from the file.
- ✓ impex.getCurrentLocation() =Returns current line number.
- ✓ impex.insertLine(csvLine) = Inserts a line into a parsing stream (it will be a next processing line)
- ✓ impex.addDefinition(definition) = Creates/modifies a macro. Definition may look like "$a=33".
- ✓ impex.setRelaxedMode() = The same as setValidationMode("import_relaxed")
- ✓ impex.info(msg) = Shows a debug message in the console (log.info)
- ✓ impex.warn(msg) = Shows a debug message in the console (log.warn)
- ✓ impex.error(msg) = Shows a debug message in the console (log.error)

Q: What are the main ways in hybris to update data from the external sources?.

- ✓ **IMPEX. HotFolder** & **Import Cockpit** are also in this category, because Spring Integration and Import Cockpit convert CSVs to IMPEXes.
- ✓ hybris API (modelService). This approach is to create your own importers with the custom logic.

Q: Explain Hot folders =

SAP Hybris provides different ways to import data, one of them is a hot folder.

A hot folder means that when you transfer a file into a specific folder with matching name it will automatically be processed by SAP Hybris. The hot folder functionality is located inside the accelerator services extension, it's based on the Spring Integration Framework.

Q: What are the actions executed when you transfer a **file into a hot folder**? =

- ✓ An inbound channel detects a new file matching a pattern (file:inboundchannel-adapter).
- ✓ An outbound channel moves the file to a new folder (file:outbound-gateway).
- ✓ activators setup the headers (int:service-activator).
- ✓ Resolve mapping between the file name and the type to import.
- ✓ Generate the impex.
- ✓ Run the impex.
- ✓ **C**leanup

Q: Explain different modes of ImpEx

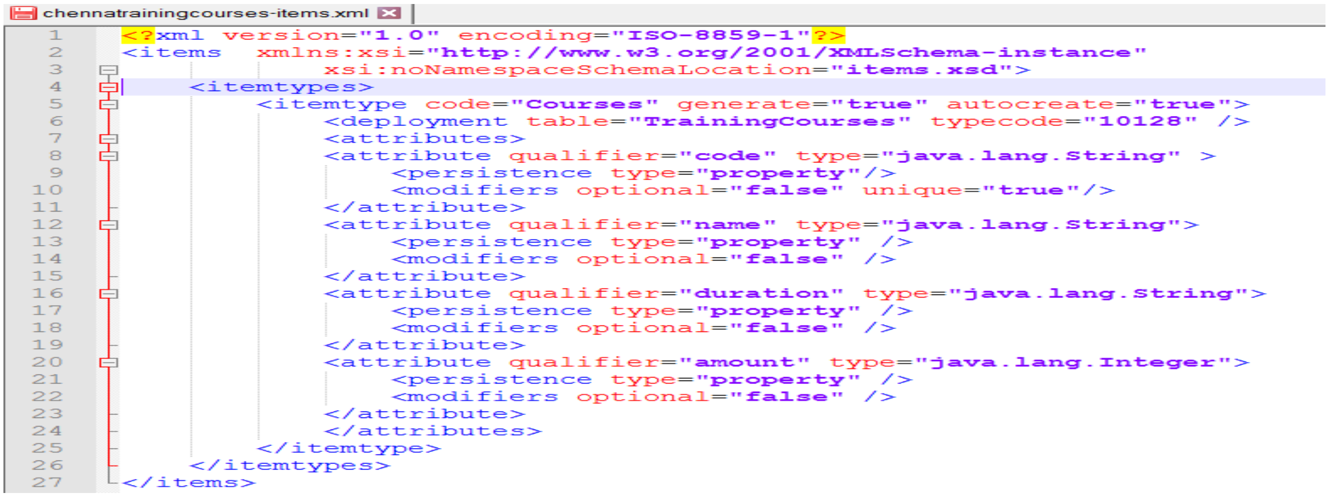
ImpEx import has 2 options –

Import Content = Copy the script & and import the data

Import Script= Select the impex file & import the data

Let's insert records into a table called "TrainingCourses" which has itemtype ="Courses"

Here is the **items.xml** file and for these attributes write the impex with different modes: -



```
<?xml version="1.0" encoding="ISO-8859-1"?>
<items  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
            xsi:noNamespaceSchemaLocation="items.xsd">
        <itemtypes>
            <itemtype code="Courses" generate="true" autocreate="true">
                <deployment table="TrainingCourses" typecode="10128" />
                <attributes>
                <attribute qualifier="code" type="java.lang.String" >
                    <persistence type="property"/>
                    <modifiers optional="false" unique="true"/>
                </attribute>
                <attribute qualifier="name" type="java.lang.String">
                    <persistence type="property" />
                    <modifiers optional="false" />
                </attribute>
                <attribute qualifier="duration" type="java.lang.String">
                    <persistence type="property" />
                    <modifiers optional="false" />
                </attribute>
                <attribute qualifier="amount" type="java.lang.Integer">
                    <persistence type="property" />
                    <modifiers optional="false" />
                </attribute>
                </attributes>
            </itemtype>
        </itemtypes>
</items>
```

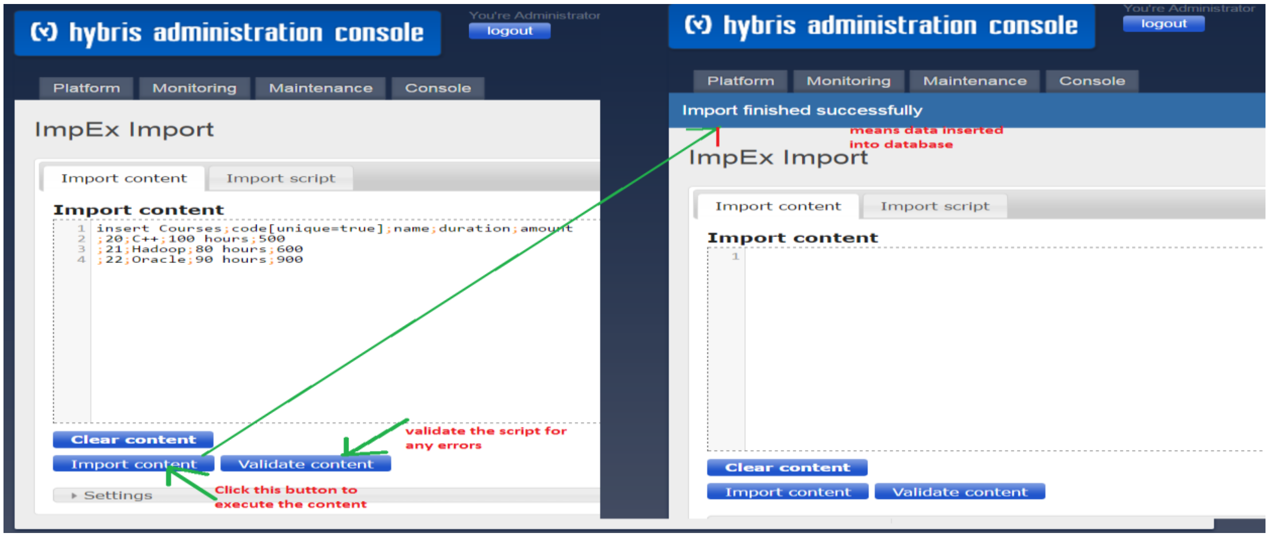
- ✓ **INSERT** = Used to insert the records. If record exists, it will throw an error & you need to correct the error.

  Option1 = Insert the data into Courses Item Type using Import Content

  Step 1 = Goto https://localhost:9002 → Console → ImpEx Import → Import Content tab & past the script

  Script-

  ```
  insert Courses;code[unique=true];name;duration;amount
  ;20;C++;100 hours;500
  ;21;Hadoop;80 hours;600
  ;22;Oracle;90 hours;900
  ```



Import content

```
insert Courses;code[unique=true];name;duration;amount
;20;C++;100 hours;500
;21;Hadoop;80 hours;600
;22;Oracle;90 hours;900
```

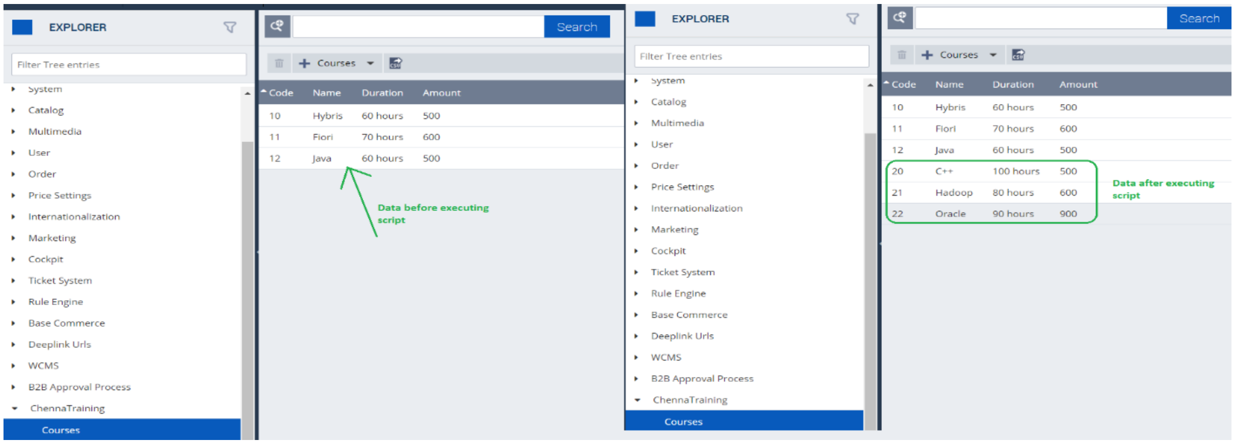
validate the script for any errors

Click this button to execute the content

Import finished successfully

means data inserted into database

Step 2 = Goto back office and verify the data



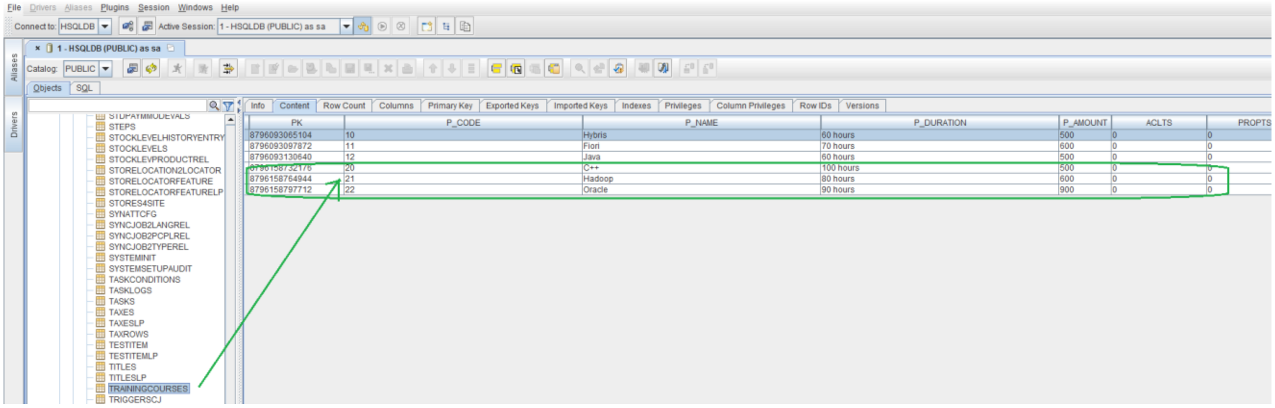
Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500

Data before executing script

Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Oracle	90 hours	900

Data after executing script

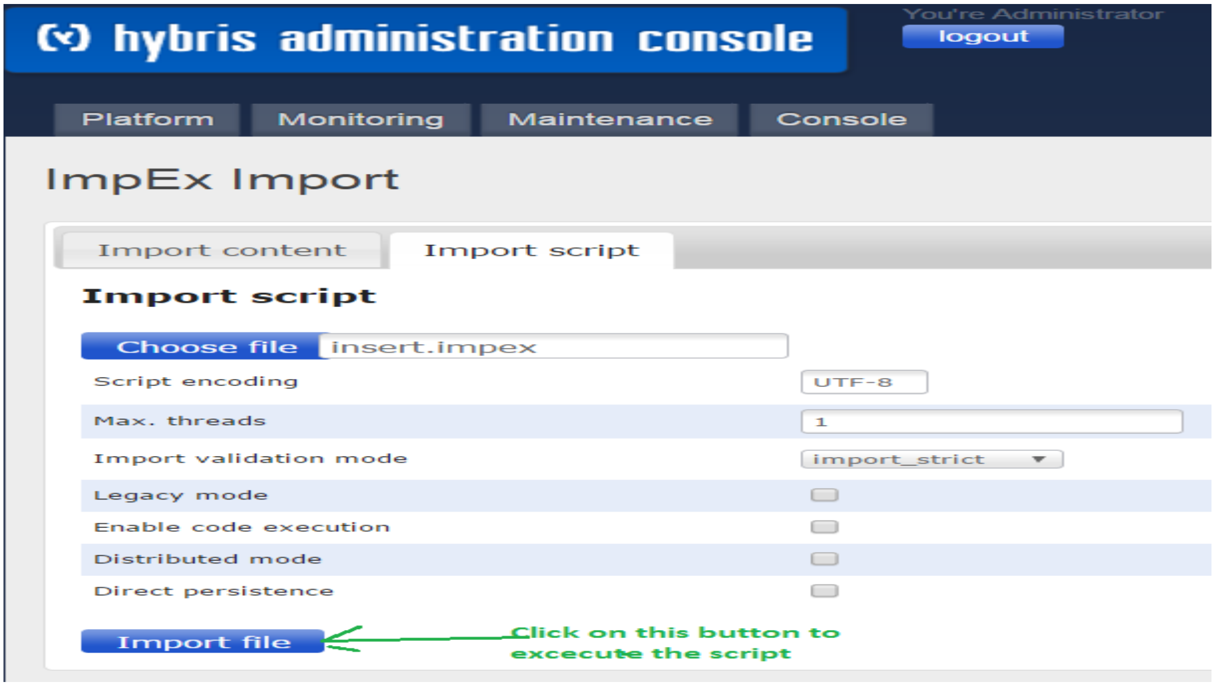
Step 3 = Goto DB & Verify data (If you already opened Squirrel then close & reopen to see data changes).



PK	P_CODE	P_NAME	P_DURATION	P_AMOUNT	ACLTS	PROPTS
8796093065104	10	Hybris	60 hours	500	0	0
8796093097872	11	Fiori	70 hours	600	0	0
8796093130640	12	Java	60 hours	500	0	0
8796158732176	20	C++	100 hours	500	0	0
8796158764944	21	Hadoop	80 hours	600	0	0
8796158797712	22	Oracle	90 hours	900	0	0

Option 2 = Insert the data into Courses Item Type using Import Script

Step 1 = Goto https://localhost:9002 → Console → ImpEx Import → Import Script tab & select impex file



ImpEx Import

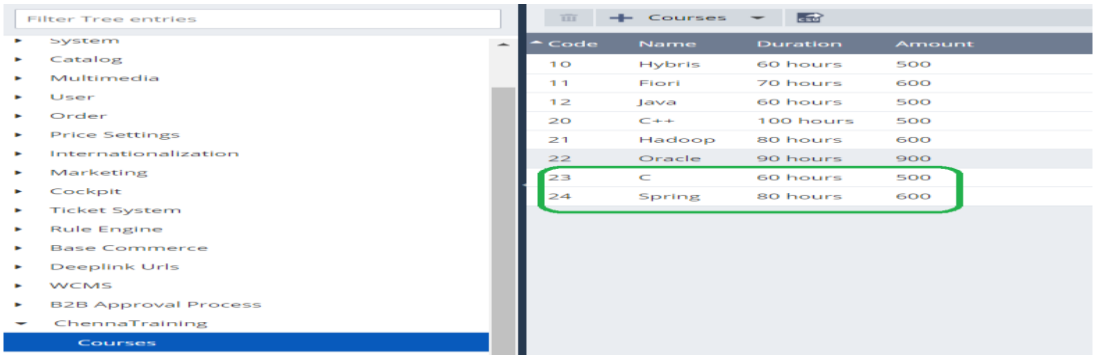
Import script

insert.impex

Script encoding	UTF-8
Max. threads	1
Import validation mode	import_strict
Legacy mode	□
Enable code execution	□
Distributed mode	□
Direct persistence	□

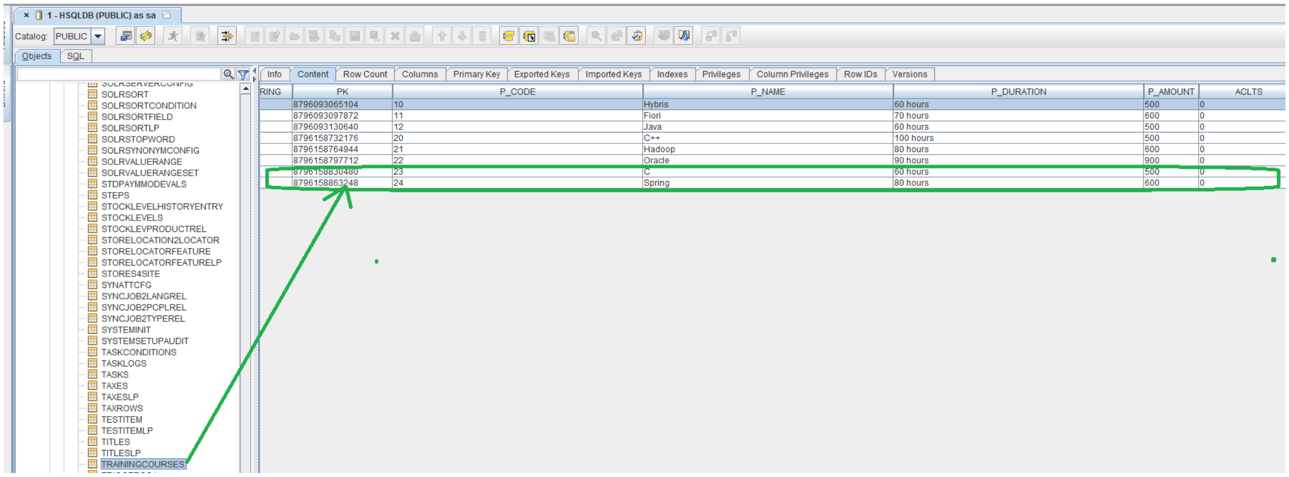
Click on this button to excecute the script

Step 2 = Goto back office & verify the data



Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Oracle	90 hours	900
23	C	60 hours	500
24	Spring	80 hours	600

Step 3 = Goto DB & verify data (If you already opened Squirrel then close and reopen to see data changes).



RING	PK	P_CODE	P_NAME	P_DURATION	P_AMOUNT	ACLTS
	8796093065104	10	Hybris	60 hours	500	0
	8796093097872	11	Fiori	70 hours	600	0
	8796093130640	12	Java	60 hours	500	0
	8796158732176	20	C++	100 hours	500	0
	8796158764944	21	Hadoop	80 hours	600	0
	8796158797712	22	Oracle	90 hours	900	0
	8796158830480	23	C	60 hours	500	0
	8796158863248	24	Spring	80 hours	600	0

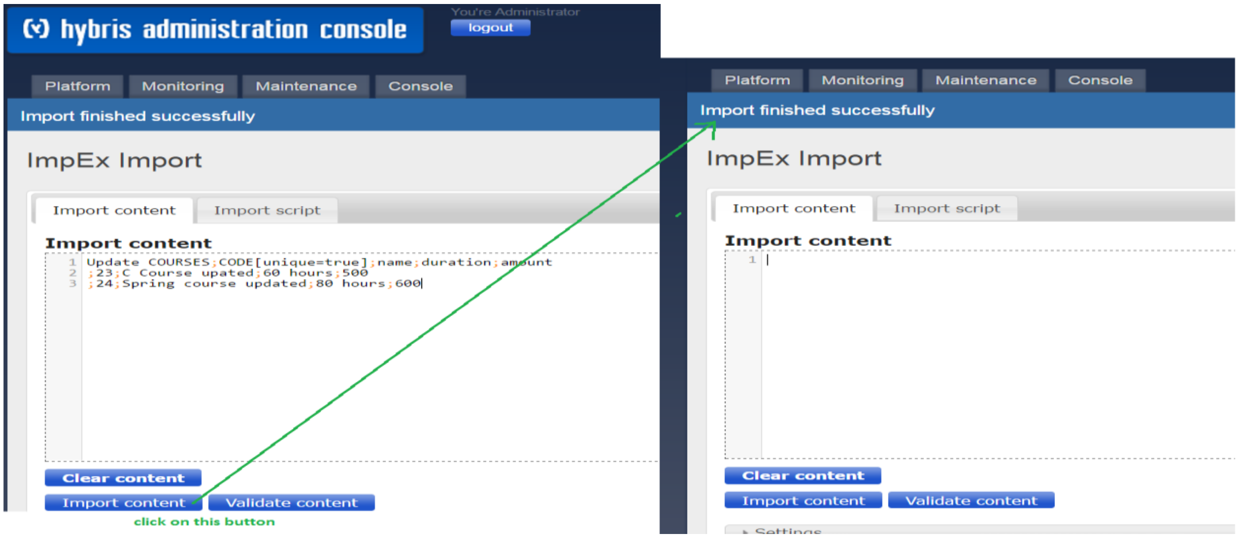
Contact us for more information → chennareddytraining@gmail.com (Java–Salesforce–SAP Portal–UI5/Fiori–Hybris)

✓ **UPDATE** = Used to update records. If record not exists, it will throw an error & you need to correct error

Step 1 = Goto https://localhost:9002 → Console → ImpEx Import → Import Script tab & select impex file

Script –

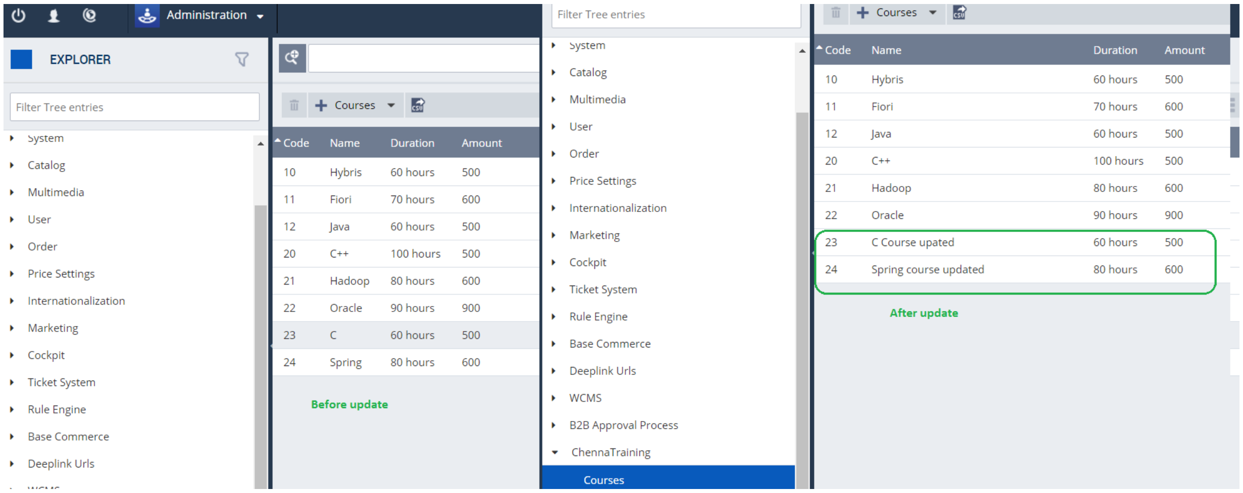
```
Update COURSES;CODE[unique=true];name;duration;amount
;23;C Course upated;60 hours;500
;24;Spring course updated;80 hours;600
```



```
Update COURSES;CODE[unique=true];name;duration;amount
;23;C Course upated;60 hours;500
;24;Spring course updated;80 hours;600
```

click on this button

Step 2= Verify the data in back office & in DB.

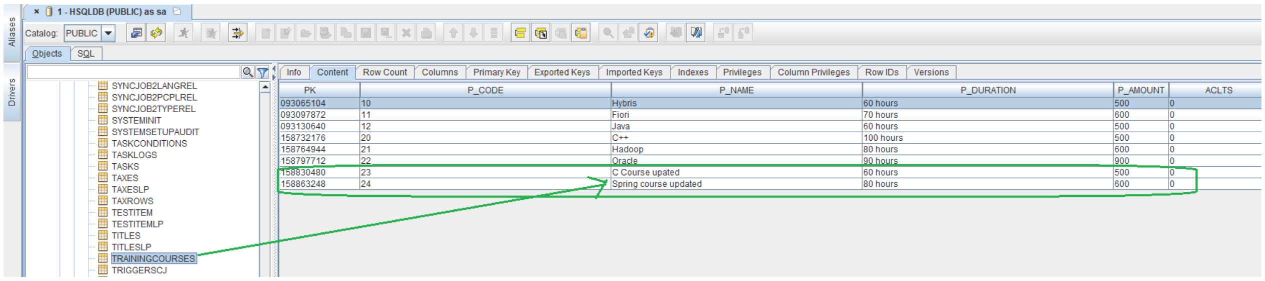


Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Oracle	90 hours	900
23	C	60 hours	500
24	Spring	80 hours	600

Before update

Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Oracle	90 hours	900
23	C Course upated	60 hours	500
24	Spring course updated	80 hours	600

After update



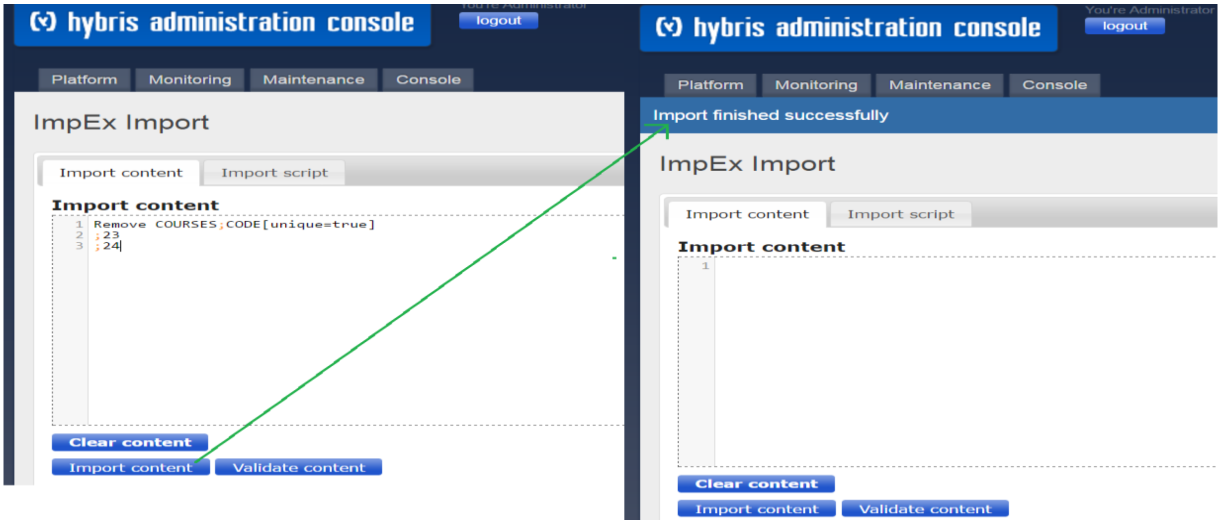
PK	P_CODE	P_NAME	P_DURATION	P_AMOUNT	ACLTS
093065104	10	Hybris	60 hours	500	0
093097872	11	Fiori	70 hours	600	0
093130640	12	Java	60 hours	500	0
158732176	20	C++	100 hours	500	0
158764944	21	Hadoop	80 hours	600	0
158797712	22	Oracle	90 hours	900	0
158830480	23	C Course upated	60 hours	500	0
158863248	24	Spring course updated	80 hours	600	0

✓ **REMOVE** = Used to delete records. If record exists it will delete, otherwise it won't delete any records & no error message.

Step 1 = Goto https://localhost:9002 → Console → ImpEx Import → Import Script tab & select impex file

Script –

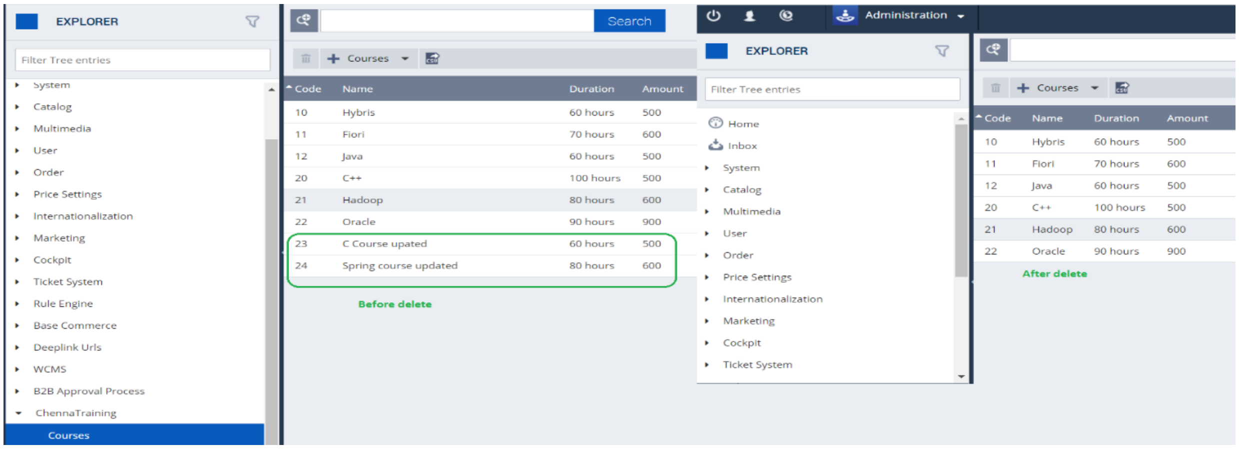
```
Remove Courses;code[unique=true]
;23
;24
```



```
Remove COURSES;CODE[unique=true]
;23
;24
```

Import finished successfully

Step 2 = Verify the data in back office and in database

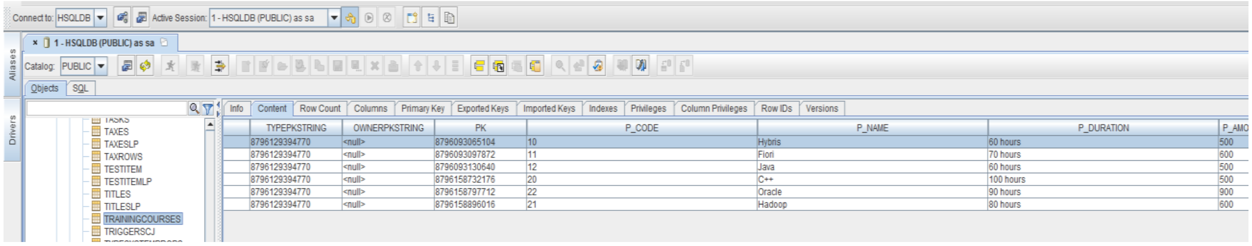


Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Oracle	90 hours	900
23	C Course upated	60 hours	500
24	Spring course updated	80 hours	600

Before delete

Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Oracle	90 hours	900

After delete



TYPEPKSTRING	OWNERPKSTRING	PK	P_CODE	P_NAME	P_DURATION	P_AMO
8796129394770	<null>	8796093065104	10	Hybris	60 hours	500
8796129394770	<null>	8796093097872	11	Fiori	70 hours	600
8796129394770	<null>	8796093130640	12	Java	60 hours	500
8796129394770	<null>	8796158732176	20	C++	100 hours	500
8796129394770	<null>	8796158797712	22	Oracle	90 hours	900
8796129394770	<null>	8796158896016	21	Hadoop	80 hours	600

✓ **INSERT_UPDATE** = Used to insert/update records. If record already exists, it will update otherwise it will insert the record

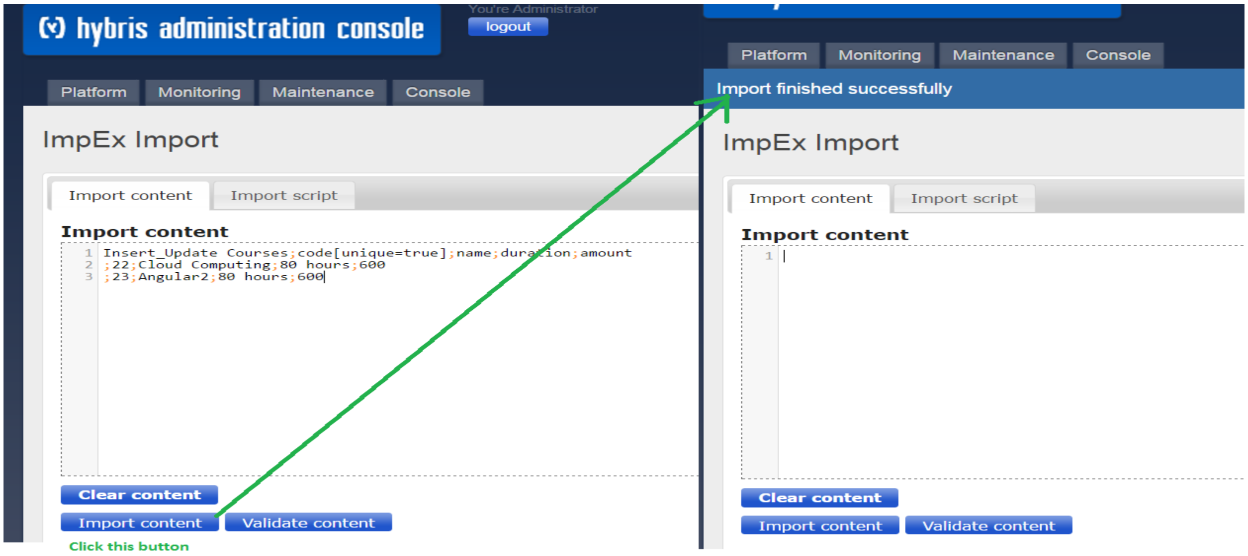
Step 1 = Goto https://localhost:9002 → Console → ImpEx Import → Import Script tab & select impex file

Script –

```
Insert_Update Courses;code[unique=true];name;duration;amount
```

;22;Cloud Computing;80 hours;600

;23;Angular2;80 hours;600



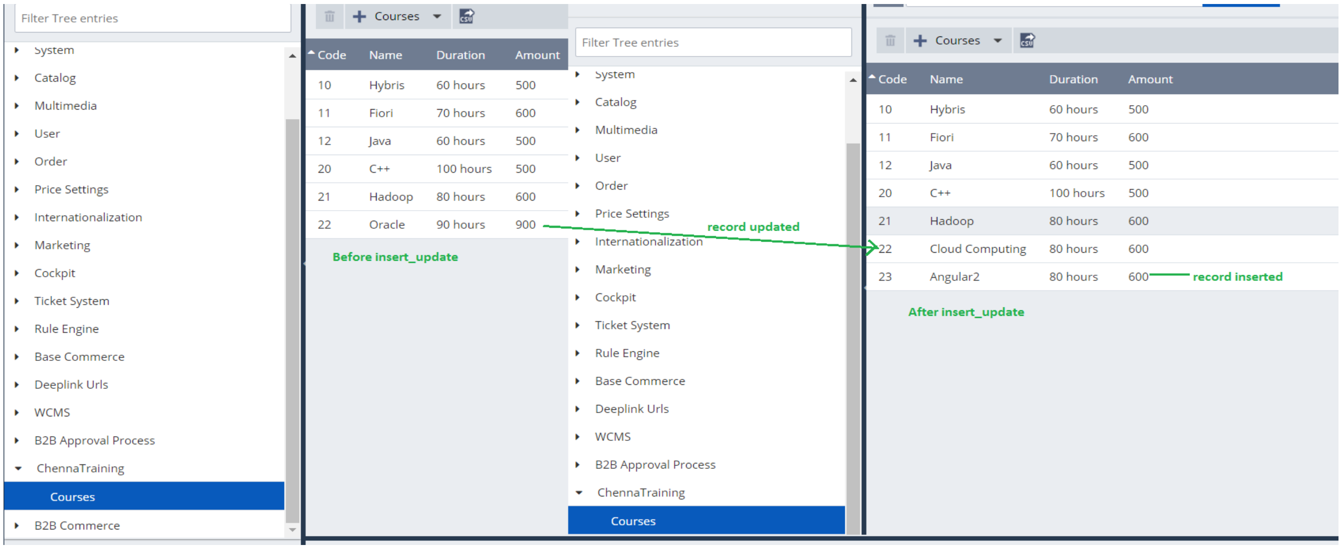
Import content

```
Insert_Update Courses;code[unique=true];name;duration;amount
;22;Cloud Computing;80 hours;600
;23;Angular2;80 hours;600
```

Click this button

Import finished successfully

Step 2 = Verify the data in back office & in DB



Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Oracle	90 hours	900

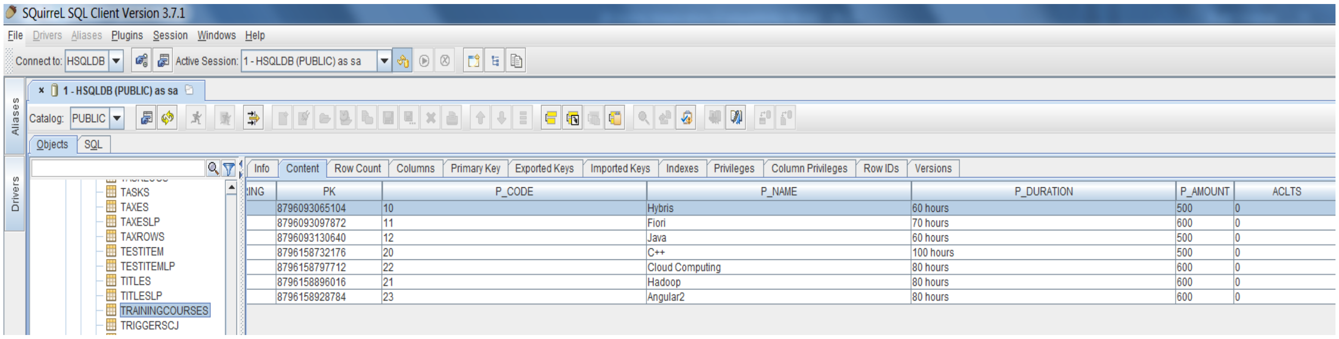
Before insert_update

record updated

Code	Name	Duration	Amount
10	Hybris	60 hours	500
11	Fiori	70 hours	600
12	Java	60 hours	500
20	C++	100 hours	500
21	Hadoop	80 hours	600
22	Cloud Computing	80 hours	600
23	Angular2	80 hours	600

record inserted

After insert_update



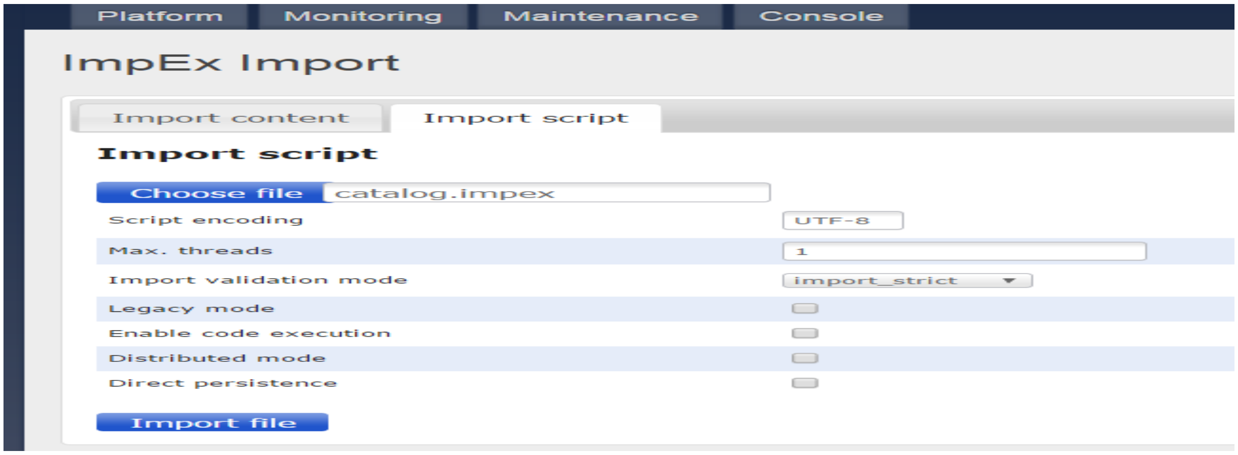
PK	P_CODE	P_NAME	P_DURATION	P_AMOUNT	ACLTS
8796093065104	10	Hybris	60 hours	500	0
8796093097872	11	Fiori	70 hours	600	0
8796093130640	12	Java	60 hours	500	0
8796158732176	20	C++	100 hours	500	0
8796158797712	22	Cloud Computing	80 hours	600	0
8796158896016	21	Hadoop	80 hours	600	0
8796158928784	23	Angular2	80 hours	600	0

Q = Explain catalog impex?

Step 1 = Copy the below script into a text file and save it as “**catalog.impex**” in some folder

```
# Import the Product Catalog and Classification Catalog
$productCatalog=ChennaTrainingProductCatalog
$classificationCatalog=ChennaTrainingClassificationCatalog
$languages=ja,en,de,zh

# Product catalog
INSERT_UPDATE Catalog;id[unique=true]
;$productCatalog

# Classification catalog
INSERT_UPDATE ClassificationSystem;id[unique=true]
;$classificationCatalog

# Product versions for product catalogs
INSERT_UPDATE CatalogVersion;catalog(id)[unique=true];version[unique=true];active;languages(isoCode);readPrincipals(uid)
;$productCatalog;Staged;false;$languages;employeegroup
;$productCatalog;Online;true;$languages;employeegroup

# Insert Classifications System Version
INSERT_UPDATE ClassificationSystemVersion;catalog(id)[unique=true];version[unique=true];active;inclPacking[virtual=true,default=true];inclDuty[virtual=true,default=true];inclFreight[virtual=true,default=true];inclAssurance[virtual=true,default=true]
;$classificationCatalog;1.0;true
```

Step 2 = Goto https://localhost:9002 → Console → ImpEx Import → Import Script tab & select the catalog.impex file & click on import file: -



catalog.impex

Script encoding: UTF-8

Max. threads: 1

Import validation mode: import_strict

Legacy mode ☐

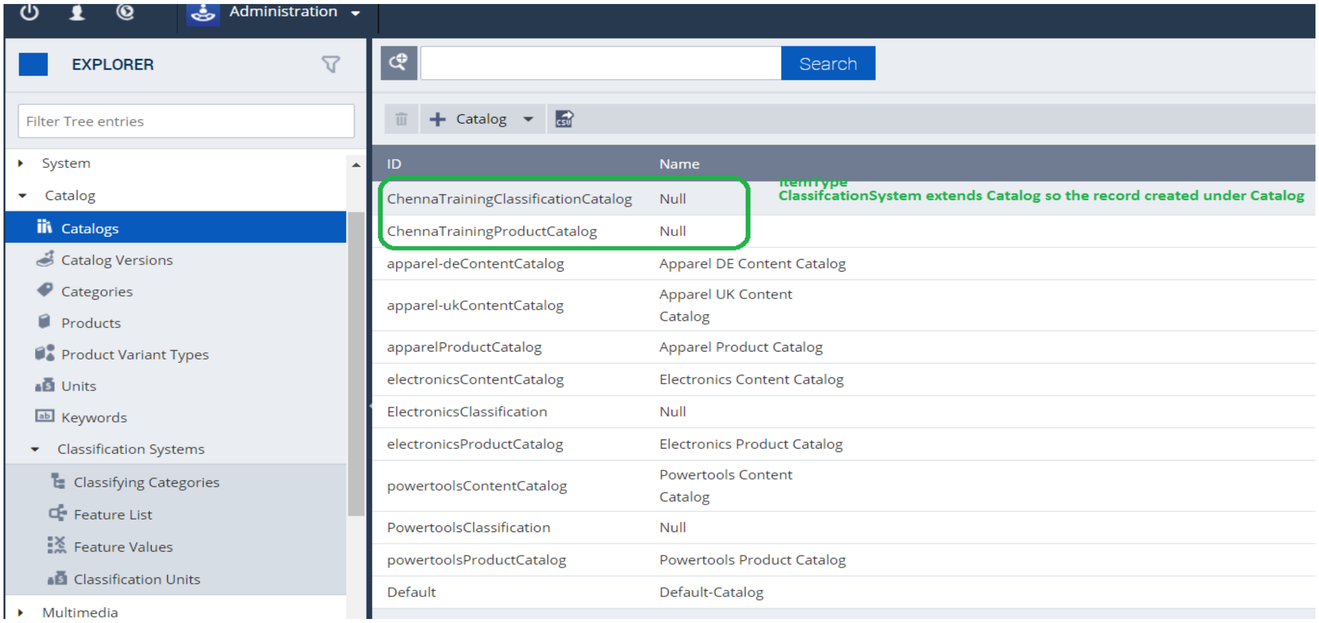
Enable code execution ☐

Distributed mode ☐

Direct persistence ☐

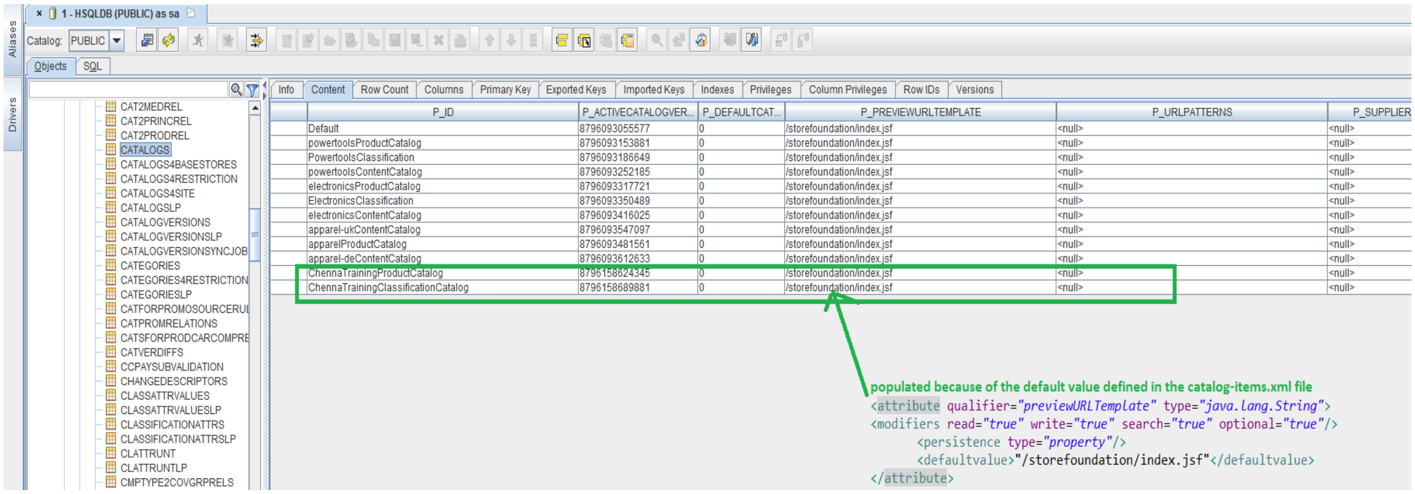
Contact us for more information → chennareddytraining@gmail.com (Java–Salesforce–SAP Portal–UI5/Fiori–Hybris)

Step 3 = See the the data changes in back office and database



ID	Name
ChennaTrainingClassificationCatalog	Null
ChennaTrainingProductCatalog	Null
apparel-deContentCatalog	Apparel DE Content Catalog
apparel-ukContentCatalog	Apparel UK Content Catalog
apparelProductCatalog	Apparel Product Catalog
electronicsContentCatalog	Electronics Content Catalog
ElectronicsClassification	Null
electronicsProductCatalog	Electronics Product Catalog
powertoolsContentCatalog	Powertools Content Catalog
PowertoolsClassification	Null
powertoolsProductCatalog	Powertools Product Catalog
Default	Default-Catalog

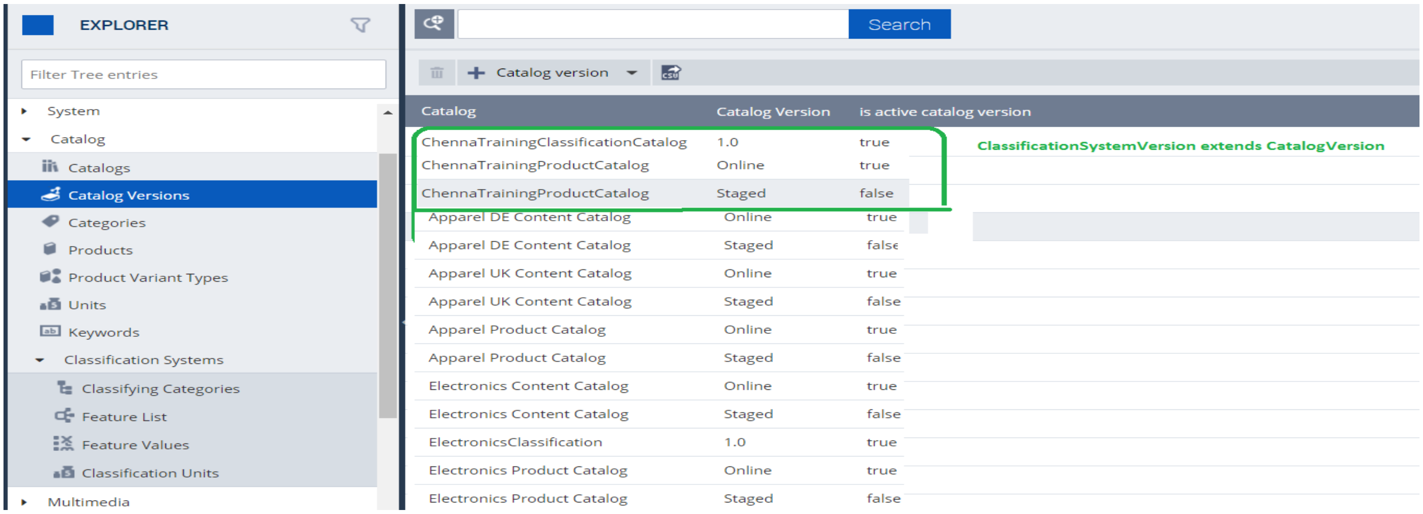
ItemType ClassifcationSystem extends Catalog so the record created under Catalog



P_ID	P_ACTIVECATALOGVER...	P_DEFAULTCAT...	P_PREVIEWURLTEMPLATE	P_URLPATTERNS	P_SUPPLIER
Default	8796093055577	0	/storefoundation/index.jsf	<null>	<null>
powertoolsProductCatalog	8796093153881	0	/storefoundation/index.jsf	<null>	<null>
PowertoolsClassification	8796093186649	0	/storefoundation/index.jsf	<null>	<null>
powertoolsContentCatalog	8796093252185	0	/storefoundation/index.jsf	<null>	<null>
electronicsProductCatalog	8796093317721	0	/storefoundation/index.jsf	<null>	<null>
ElectronicsClassification	8796093350489	0	/storefoundation/index.jsf	<null>	<null>
electronicsContentCatalog	8796093416025	0	/storefoundation/index.jsf	<null>	<null>
apparel-ukContentCatalog	8796093547097	0	/storefoundation/index.jsf	<null>	<null>
apparelProductCatalog	8796093481561	0	/storefoundation/index.jsf	<null>	<null>
apparel-deContentCatalog	8796093612633	0	/storefoundation/index.jsf	<null>	<null>
ChennaTrainingProductCatalog	8796158624345	0	/storefoundation/index.jsf	<null>	<null>
ChennaTrainingClassificationCatalog	8796158689881	0	/storefoundation/index.jsf	<null>	<null>

populated because of the default value defined in the catalog-items.xml file

```
<attribute qualifier="previewURLTemplate" type="java.lang.String">
<modifiers read="true" write="true" search="true" optional="true"/>
        <persistence type="property"/>
        <defaultvalue>"/storefoundation/index.jsf"</defaultvalue>
</attribute>
```

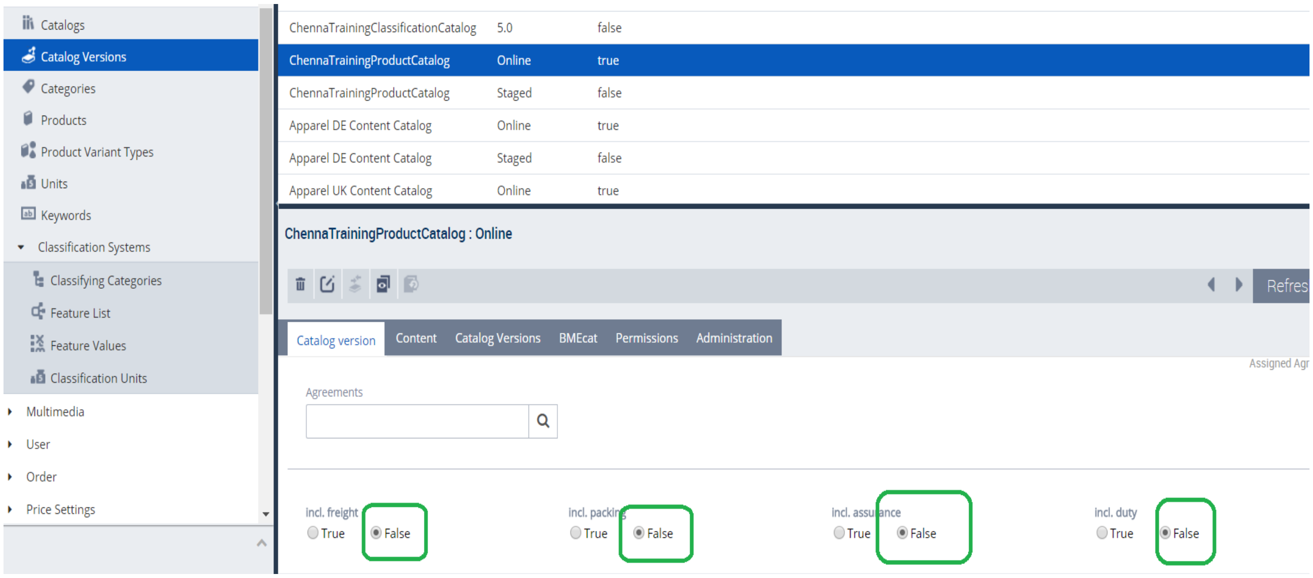


Catalog	Catalog Version	is active catalog version
ChennaTrainingClassificationCatalog	1.0	true
ChennaTrainingProductCatalog	Online	true
ChennaTrainingProductCatalog	Staged	false
Apparel DE Content Catalog	Online	true
Apparel DE Content Catalog	Staged	false
Apparel UK Content Catalog	Online	true
Apparel UK Content Catalog	Staged	false
Apparel Product Catalog	Online	true
Apparel Product Catalog	Staged	false
Electronics Content Catalog	Online	true
Electronics Content Catalog	Staged	false
ElectronicsClassification	1.0	true
Electronics Product Catalog	Online	true
Electronics Product Catalog	Staged	false

ClassificationSystemVersion extends CatalogVersion

Contact us for more information → chennareddytraining@gmail.com (Java–Salesforce–SAP Portal–UI5/Fiori–Hybris)

Note – Observe the default values



ChennaTrainingClassificationCatalog	5.0	false
ChennaTrainingProductCatalog	Online	true
ChennaTrainingProductCatalog	Staged	false
Apparel DE Content Catalog	Online	true
Apparel DE Content Catalog	Staged	false
Apparel UK Content Catalog	Online	true

ChennaTrainingProductCatalog : Online

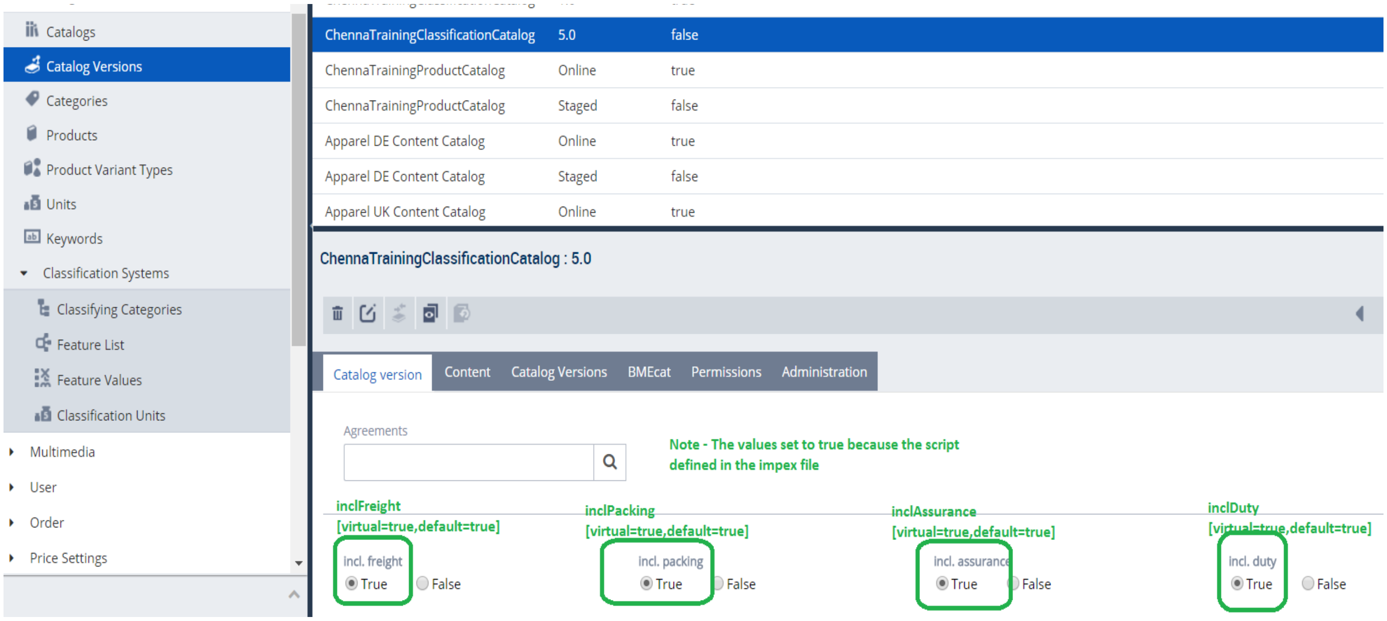
Agreements

Incl. freight ○ True ● False

Incl. packing ○ True ● False

Incl. assurance ○ True ● False

Incl. duty ○ True ● False



ChennaTrainingClassificationCatalog	5.0	false
ChennaTrainingProductCatalog	Online	true
ChennaTrainingProductCatalog	Staged	false
Apparel DE Content Catalog	Online	true
Apparel DE Content Catalog	Staged	false
Apparel UK Content Catalog	Online	true

ChennaTrainingClassificationCatalog : 5.0

Agreements

Note - The values set to true because the script defined in the impex file

inclFreight [virtual=true,default=true]

Incl. freight ● True ○ False

inclPacking [virtual=true,default=true]

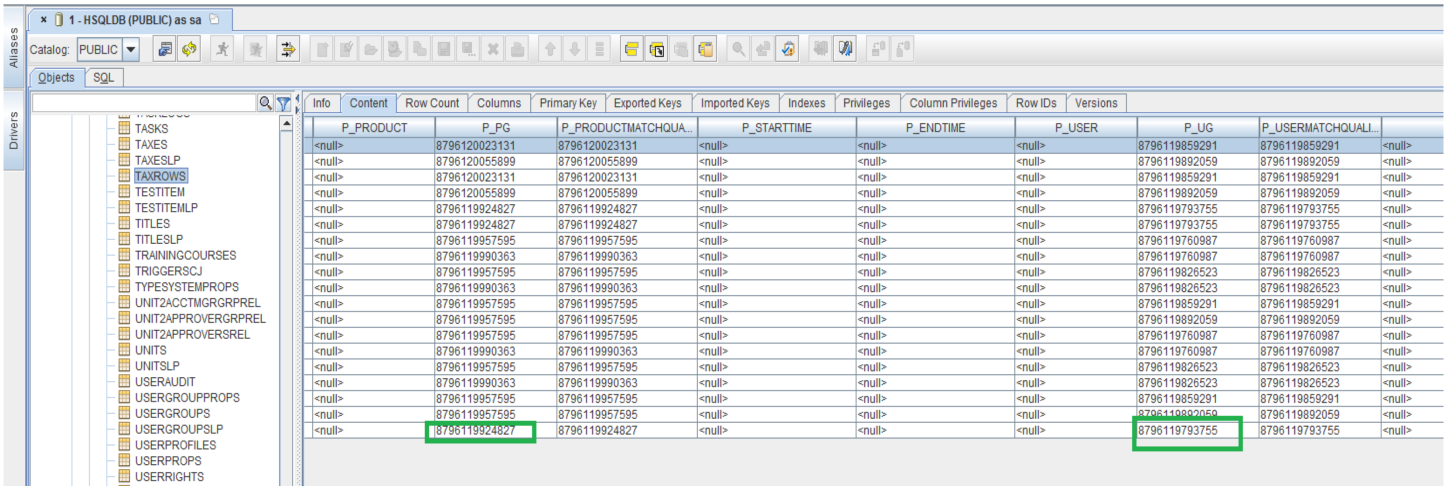
Incl. packing ● True ○ False

inclAssurance [virtual=true,default=true]

Incl. assurance ● True ○ False

inclDuty [virtual=true,default=true]

Incl. duty ● True ○ False

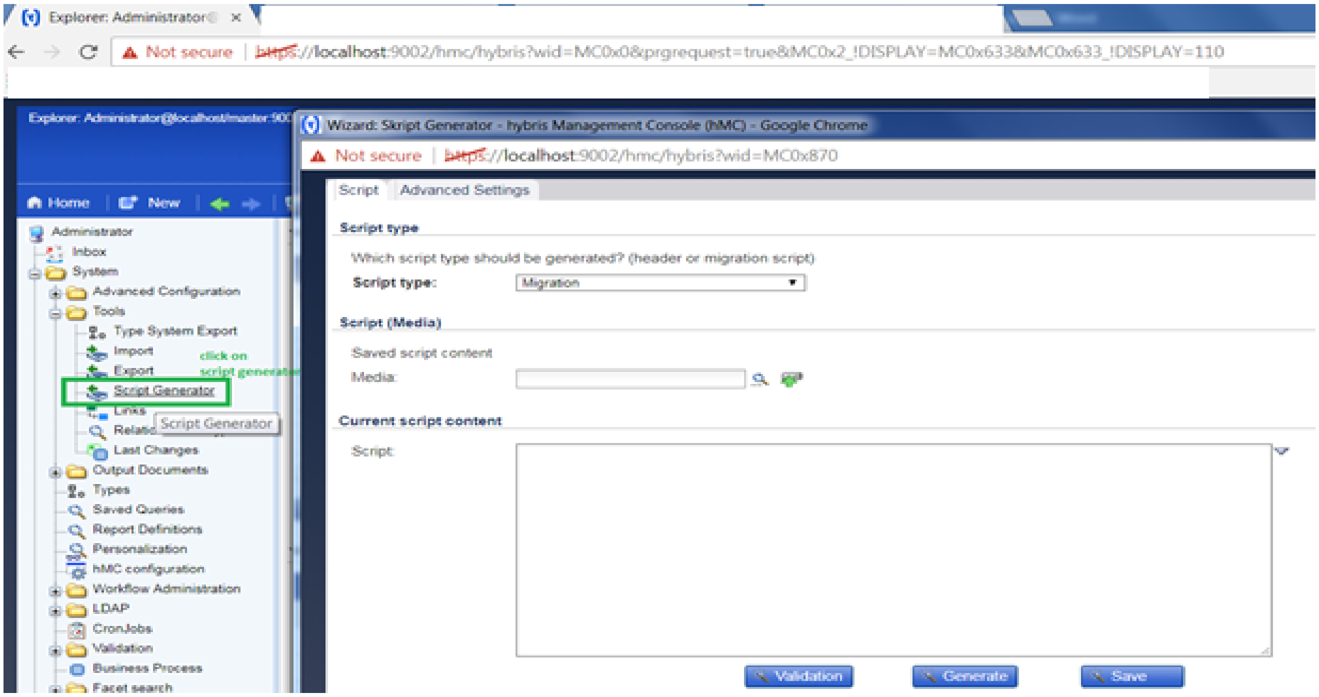


P_PRODUCT	P_PG	P_PRODUCTMATCHQUA...	P_STARTTIME	P_ENDTIME	P_USER	P_UG	P_USERMATCHQUALI...	
<null>	8796120023131	8796120023131	<null>	<null>	<null>	8796119859291	8796119859291	<null>
<null>	8796120055899	8796120055899	<null>	<null>	<null>	8796119892059	8796119892059	<null>
<null>	8796120023131	8796120023131	<null>	<null>	<null>	8796119859291	8796119859291	<null>
<null>	8796120055899	8796120055899	<null>	<null>	<null>	8796119892059	8796119892059	<null>
<null>	8796119924827	8796119924827	<null>	<null>	<null>	8796119793755	8796119793755	<null>
<null>	8796119924827	8796119924827	<null>	<null>	<null>	8796119793755	8796119793755	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119760987	8796119760987	<null>
<null>	8796119990363	8796119990363	<null>	<null>	<null>	8796119760987	8796119760987	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119826523	8796119826523	<null>
<null>	8796119990363	8796119990363	<null>	<null>	<null>	8796119826523	8796119826523	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119859291	8796119859291	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119892059	8796119892059	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119760987	8796119760987	<null>
<null>	8796119990363	8796119990363	<null>	<null>	<null>	8796119760987	8796119760987	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119826523	8796119826523	<null>
<null>	8796119990363	8796119990363	<null>	<null>	<null>	8796119826523	8796119826523	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119859291	8796119859291	<null>
<null>	8796119957595	8796119957595	<null>	<null>	<null>	8796119892059	8796119892059	<null>
<null>	8796119924827	8796119924827	<null>	<null>	<null>	8796119793755	8796119793755	<null>

Q: How to generate impex script and corresponding data for one table?

Scenario – Let say there is new table created and now need to create the impex script for that table. Instead of creating manually (which is hard), you can generate the script using hmc.

Step 1 = Goto hmc → System → tools → Script Generator & open

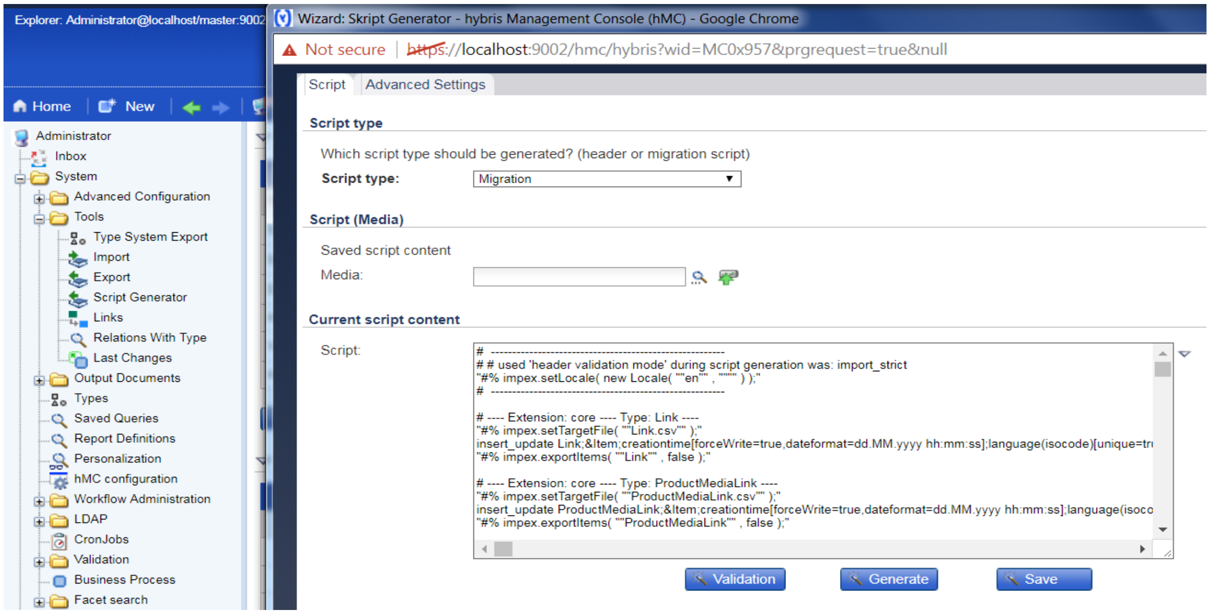


Script type

Which script type should be generated? (header or migration script)

Script type: Migration

Step 2 = Click Generate button to generate the script. This will generate the script for all the tables.



Script type

Which script type should be generated? (header or migration script)

Script type: Migration

Script:

```
#  -----------------------------------------------------
# # used 'header validation mode' during script generation was: import_strict
"#% impex.setLocale( new Locale( ""en"" , """" ) );"
#  -----------------------------------------------------

# ---- Extension: core ---- Type: Link ----
"#% impex.setTargetFile( ""Link.csv"" );"
insert_update Link;&Item;creationtime[forceWrite=true,dateformat=dd.MM.yyyy hh:mm:ss];language(isocode)[unique=tru
"#% impex.exportItems( ""Link"" , false );"

# ---- Extension: core ---- Type: ProductMediaLink ----
"#% impex.setTargetFile( ""ProductMediaLink.csv"" );"
insert_update ProductMediaLink;&Item;creationtime[forceWrite=true,dateformat=dd.MM.yyyy hh:mm:ss];language(isoco
"#% impex.exportItems( ""ProductMediaLink"" , false );"
```

Contact us for more information → chennareddytraining@gmail.com (Java–Salesforce–SAP Portal–UI5/Fiori–Hybris)

Step 3 = Copy the script for the item type you are looking into textpad / notepad

Example – I want copy the script for Courses item type code (here is the generated script)

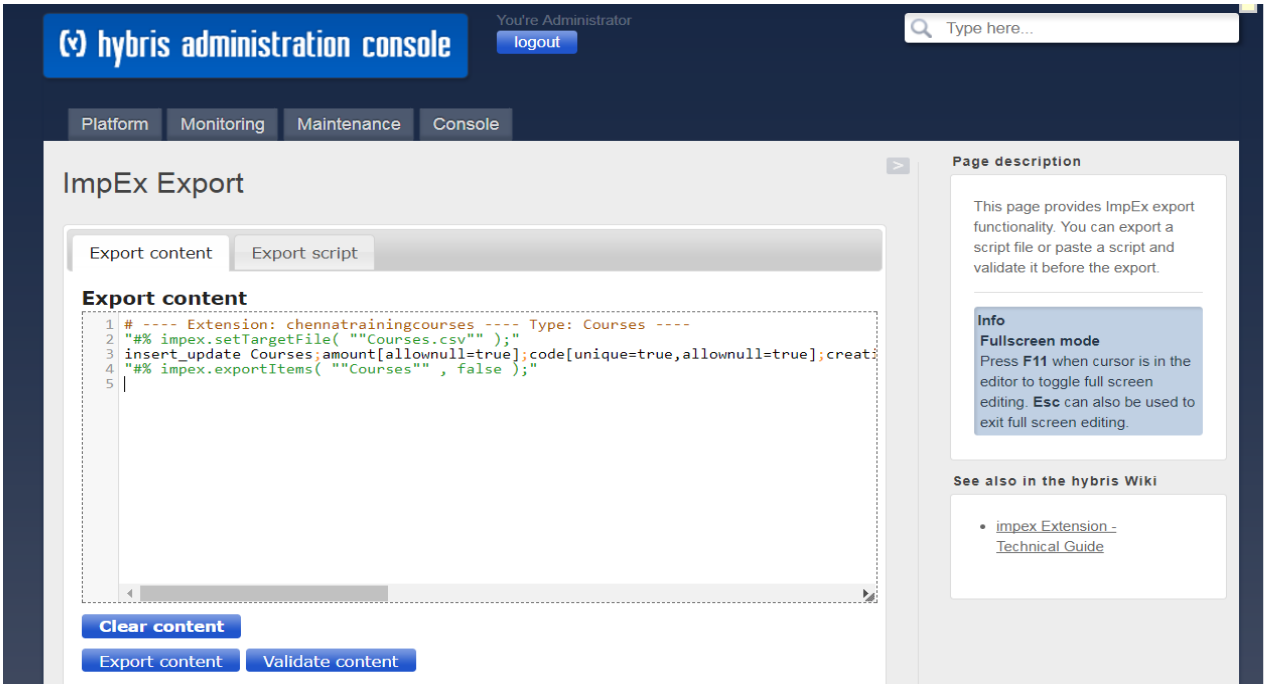
Note = Remove forceWrite=true in the creationtime because creation time can't be changed for jalo classes

```
# ---- Extension: chennatrainingcourses ---- Type: Courses ----
"#% impex.setTargetFile( ""Courses.csv"" );" → where to export
insert_update
Courses;&Item;amount[allownull=true];code[unique=true,allownull=true];creationtime[forceWrite=true,dateformat=dd.MM.yyyy hh:mm:ss];duration[allownull=true];modifiedtime[dateformat=dd.MM.yyyy hh:mm:ss];name[allownull=true];owner(&Item) → How to export
"#% impex.exportItems( ""Courses"" , false );" → what to export
```

Script after removing forceWrite=true, Copy this script into the Console → ImpEx Export → Export Content tab

```
#-----------------------------------------------------------
insert_update
Courses;&Item;amount[allownull=true];code[unique=true,allownull=true];creationtime[dateformat=dd.MM.yyyy hh:mm:ss];duration[allownull=true];modifiedtime[dateformat=dd.MM.yyyy hh:mm:ss];name[allownull=true];owner(&Item)
"#% impex.includeExternalDataMedia( ""Courses.csv"" , ""UTF-8"", ';',  1 , -1 );"
#-----------------------------------------------------------
```

Step 4 = Goto hac → Console → Impex Export → Export Content & paste the modified item type script



```
# ---- Extension: chennatrainingcourses ---- Type: Courses ----
"#% impex.setTargetFile( ""Courses.csv"" );"
insert_update Courses;amount[allownull=true];code[unique=true,allownull=true];creati
"#% impex.exportItems( ""Courses"" , false );"
```

This page provides ImpEx export functionality. You can export a script file or paste a script and validate it before the export.

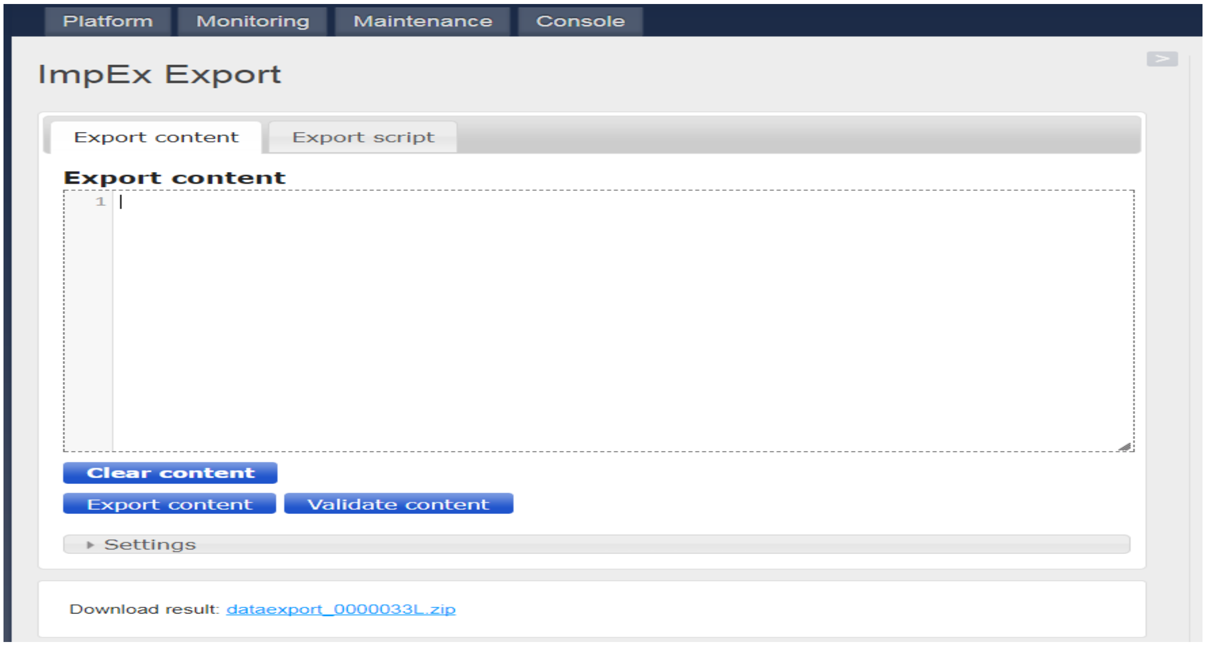
Info
Fullscreen mode
Press **F11** when cursor is in the editor to toggle full screen editing. **Esc** can also be used to exit full screen editing.

See also in the hybris Wiki
impex Extension - Technical Guide

Contact us for more information → chennareddytraining@gmail.com (Java–Salesforce–SAP Portal–UI5/Fiori–Hybris)

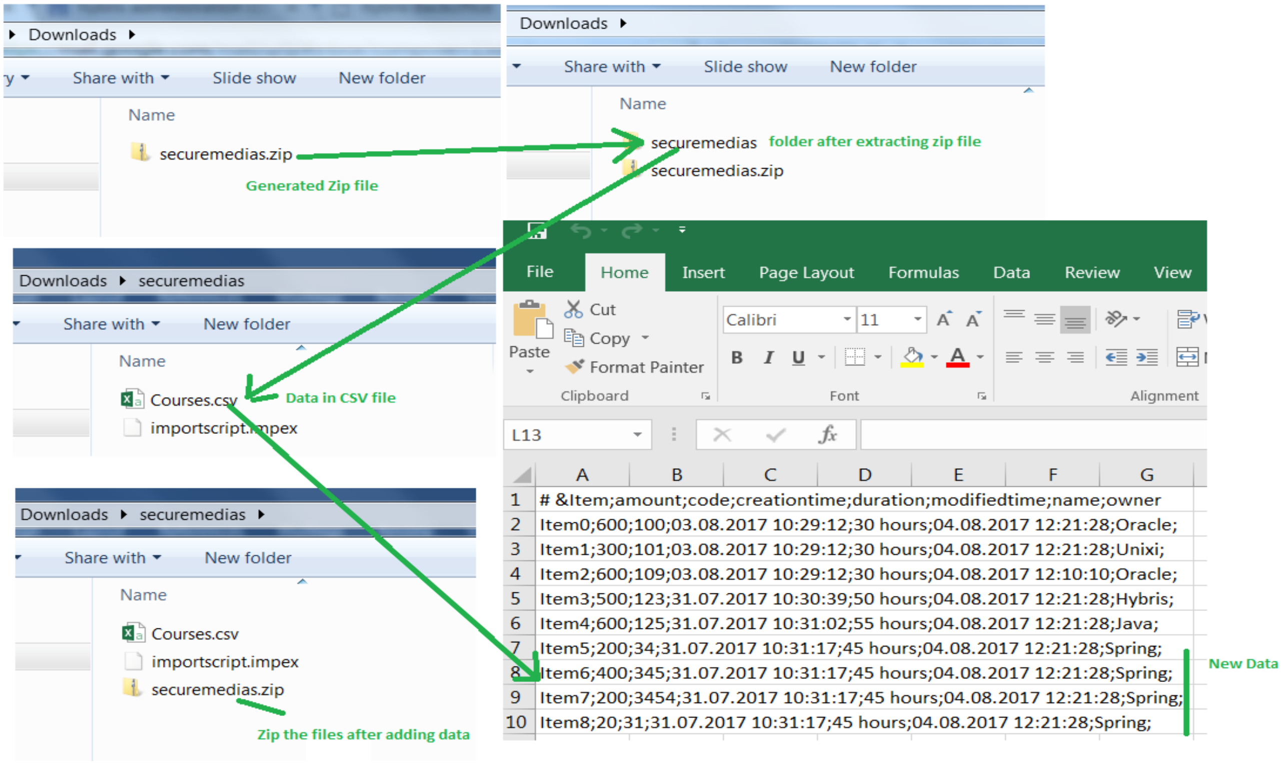
Step 5 = Click on Export Content and save the file. The file is saved as zip file.

Note = You can use the zip file to import the data or you can copy the script and the data into Export content tab and run.



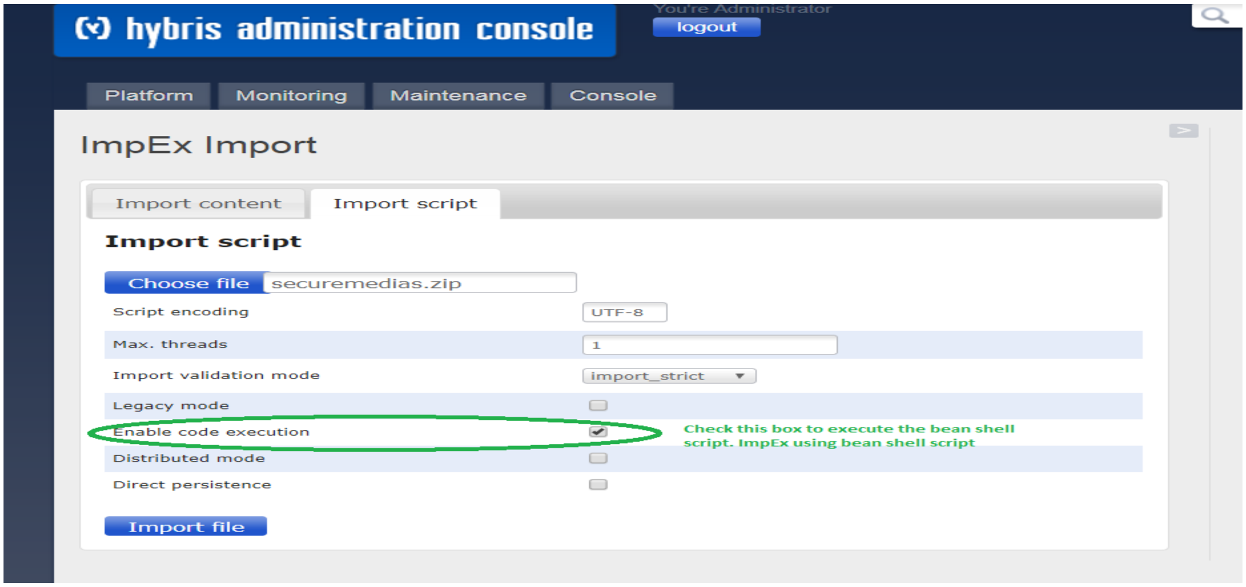
Download result: dataexport_0000033L.zip

Step 6 = Extract the zip file and add the new data in the "Courses.csv" file and then zip the file



```
   A         B         C         D         E         F         G
1  # &Item;amount;code;creationtime;duration;modifiedtime;name;owner
2  Item0;600;100;03.08.2017 10:29:12;30 hours;04.08.2017 12:21:28;Oracle;
3  Item1;300;101;03.08.2017 10:29:12;30 hours;04.08.2017 12:21:28;Unixi;
4  Item2;600;109;03.08.2017 10:29:12;30 hours;04.08.2017 12:10:10;Oracle;
5  Item3;500;123;31.07.2017 10:30:39;50 hours;04.08.2017 12:21:28;Hybris;
6  Item4;600;125;31.07.2017 10:31:02;55 hours;04.08.2017 12:21:28;Java;
7  Item5;200;34;31.07.2017 10:31:17;45 hours;04.08.2017 12:21:28;Spring;
8  Item6;400;345;31.07.2017 10:31:17;45 hours;04.08.2017 12:21:28;Spring;
9  Item7;200;3454;31.07.2017 10:31:17;45 hours;04.08.2017 12:21:28;Spring;
10 Item8;20;31;31.07.2017 10:31:17;45 hours;04.08.2017 12:21:28;Spring;
```

Step 7 = Goto hac → Console → Import Script → Choose the zip file and then click on import (this will import the new data into the database)



ImpEx Import

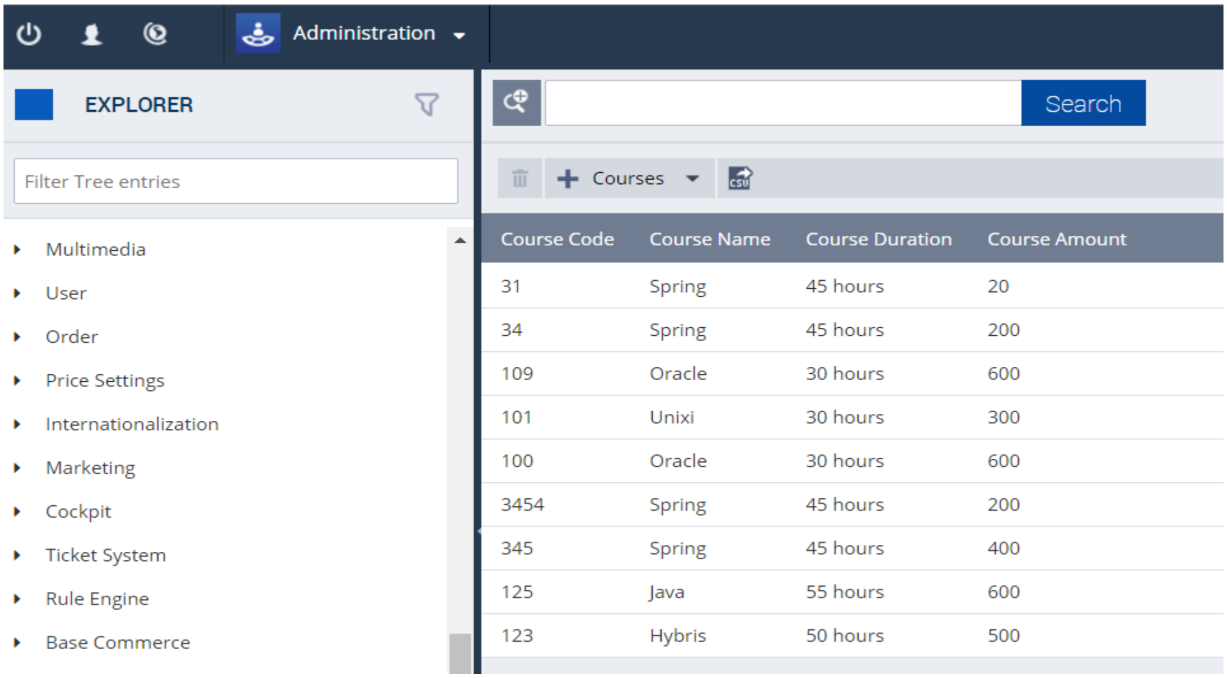
Import script

Choose file: securemedias.zip

Script encoding	UTF-8
Max. threads	1
Import validation mode	import_strict
Legacy mode	□
Enable code execution	☑
Distributed mode	□
Direct persistence	□

Check this box to execute the bean shell script. ImpEx using bean shell script

Step 8 = You can validate data in back office / in the database



Course Code	Course Name	Course Duration	Course Amount
31	Spring	45 hours	20
34	Spring	45 hours	200
109	Oracle	30 hours	600
101	Unixi	30 hours	300
100	Oracle	30 hours	600
3454	Spring	45 hours	200
345	Spring	45 hours	400
125	Java	55 hours	600
123	Hybris	50 hours	500

Q: Explain Header Level Attribute modifiers?

– alias for export ([alias=theAlias])

– allownull ([allownull=true])

– collection-delimiter, ([collection-delimiter=;])

– dateformat ([dateformat=dd-MM-yyyy])

– forceWrite ([forceWrite=true), not compatible with the service layer

– ignoreKeyCase ([ignoreKeyCase=true])

– ignorenull ([ignorenull=true]), ignore null for collection

– lang ([lang=en])

– numberformat ([numberformat=#.###,##])

– path-delimiter ([path-delimiter=:])

– unique ([unique=true]) used to mark this attribute

– virtual ([virtual=true,default=value]) needs to have a default modifier as well

– cacheUnique ([cacheUnique=true])

– impex.legacy.mode ([impex.legacy.mode=true])

– batchmode ([batchmode=true]), used with update / remove. Allows to modify >1 item that matches query

Q = What is distributed Impex?

- ✓ A new ImpEx engine that enables you to import large volumes of data using power of the whole cluster.
- ✓ Distributed ImpEx engine enables you to import Platform items from huge & complex external files (**Eg,** files that contain many dependencies between items), and at the same time it delivers exceptional performance. Read more about distributed ImpEx below: -

  https://help.hybris.com/6.7.0/hcd/3e0138c9bfc642349cad227cfcd72d9f.html

Q = Where is OOTB ImpEx code?

- ✓ The impex code located in c:\softwares\HYBRISCOMM62\hybris\bin\platform\ext\impex folder
- ✓ There is an impex engine under bin folder (impexserver.jar)
- ✓ ImpEx engine will use Apache POI library (responsible to read data from excel & to write into excel etc.)

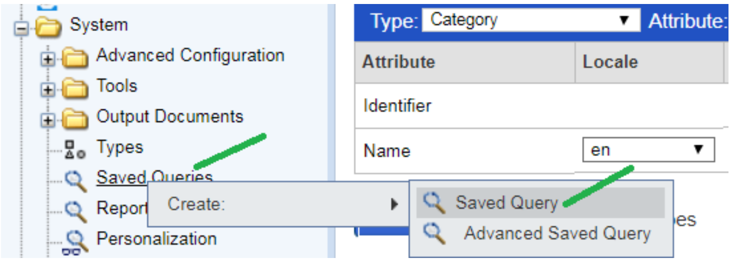
Q = What is Saved Query and how to create Saved Query?

- ✓ Saved Query used to persist the search criteria for future reuse.
- ✓ Saved Queries can be created using ImpEx or hMC

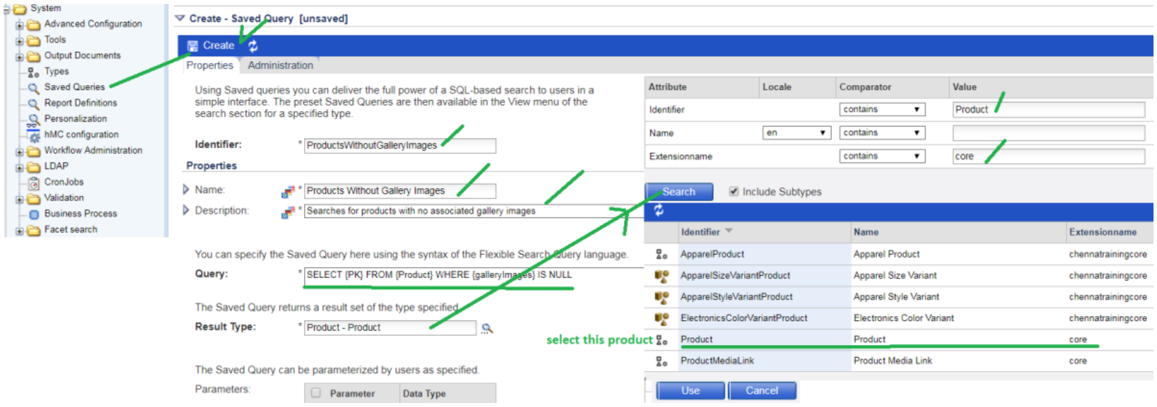
Scenario = Let say the user wants to view all their Products that do not have Gallery Images.

Note = There is no OOTB search criteria for this so you need to create saved query.

Step 1 = Goto hMC → System → Saved Queries, right-click and "Create" a "Saved Query".



Step 2 = Fill the properties



Create - Saved Query [unsaved]

Using Saved queries you can deliver the full power of a SQL-based search to users in a simple interface. The preset Saved Queries are then available in the View menu of the search section for a specified type.

Identifier: * ProductsWithoutGalleryImages

Properties

Name: * Products Without Gallery Images

Description: * Searches for products with no associated gallery images

You can specify the Saved Query here using the syntax of the Flexible Search Query language.

Query: * SELECT {PK} FROM {Product} WHERE {galleryImages} IS NULL

The Saved Query returns a result set of the type specified

Result Type: * Product - Product

The Saved Query can be parameterized by users as specified.

Parameters: □ Parameter | Data Type

Attribute	Locale	Comparator	Value
Identifier		contains	Product
Name	en	contains	
Extensionname		contains	core

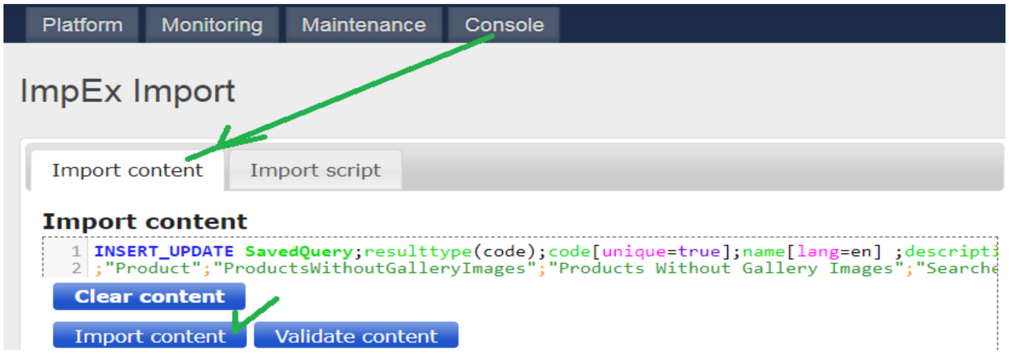
☑ Include Subtypes

Identifier	Name	Extensionname
ApparelProduct	Apparel Product	chennatrainingcore
ApparelSizeVariantProduct	Apparel Size Variant	chennatrainingcore
ApparelStyleVariantProduct	Apparel Style Variant	chennatrainingcore
ElectronicsColorVariantProduct	Electronics Color Variant	chennatrainingcore
Product	Product	core
ProductMediaLink	Product Media Link	core

select this product

Note = The above saved query can also be created using ImpEx. Execute the below impex from hAC to Create saved query.

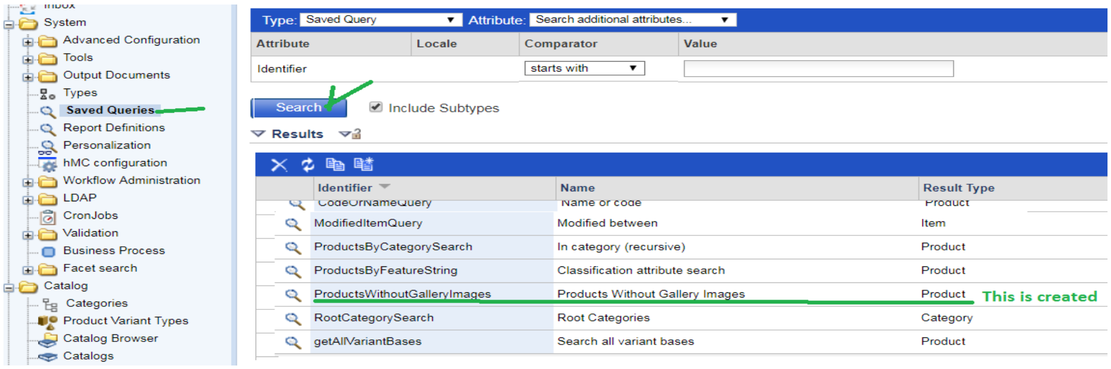
INSERT_UPDATE SavedQuery;resulttype(code);code[unique=true];name[lang=en] ;description[lang=en];query ;params(key,value(code))[map-delimiter=|]; ;"Product";"ProductsWithoutGalleryImages";"Products Without Gallery Images";"Searches for products with no associated gallery images";"SELECT {PK} FROM {Product} WHERE {galleryImages} IS NULL";;



Import content

```
INSERT_UPDATE SavedQuery;resulttype(code);code[unique=true];name[lang=en] ;descripti
;"Product";"ProductsWithoutGalleryImages";"Products Without Gallery Images";"Searche
```

Step 3 = Verify the created Saved Query in hMC

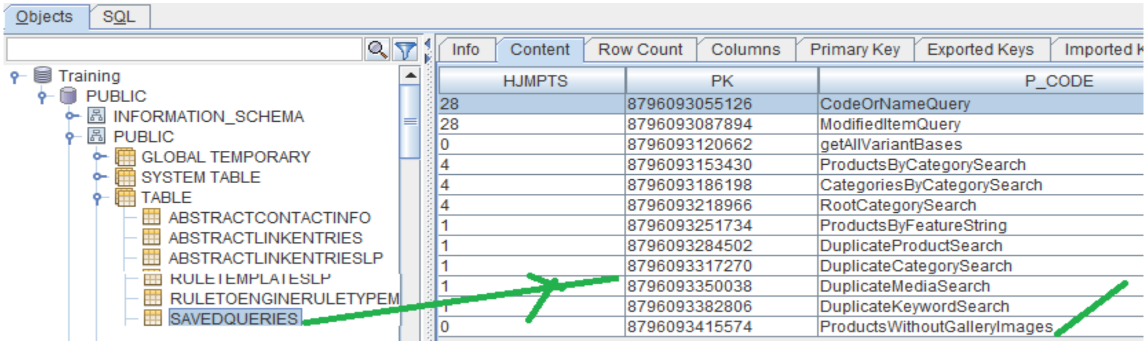


Attribute	Locale	Comparator	Value
Identifier		starts with	

Identifier	Name	Result Type
CodeOrNameQuery	Name or code	Product
ModifiedItemQuery	Modified between	Item
ProductsByCategorySearch	In category (recursive)	Product
ProductsByFeatureString	Classification attribute search	Product
ProductsWithoutGalleryImages	Products Without Gallery Images	Product
RootCategorySearch	Root Categories	Category
getAllVariantBases	Search all variant bases	Product

This is created

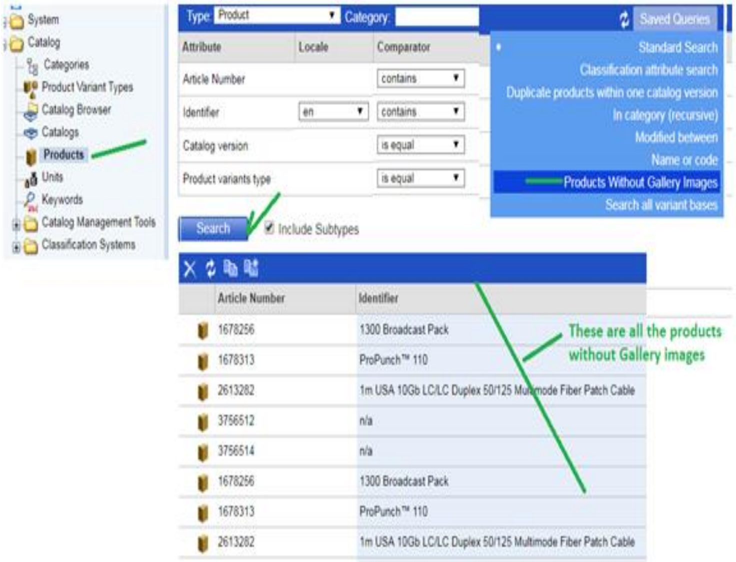
Note = The queries are saved in the **SavedQueries** database table.



HJMPTS	PK	P_CODE
28	8796093055126	CodeOrNameQuery
28	8796093087894	ModifiedItemQuery
0	8796093120662	getAllVariantBases
4	8796093153430	ProductsByCategorySearch
4	8796093186198	CategoriesByCategorySearch
4	8796093218966	RootCategorySearch
1	8796093251734	ProductsByFeatureString
1	8796093284502	DuplicateProductSearch
1	8796093317270	DuplicateCategorySearch
1	8796093350038	DuplicateMediaSearch
1	8796093382806	DuplicateKeywordSearch
0	8796093415574	ProductsWithoutGalleryImages

Step 4 = Run the saved query on products

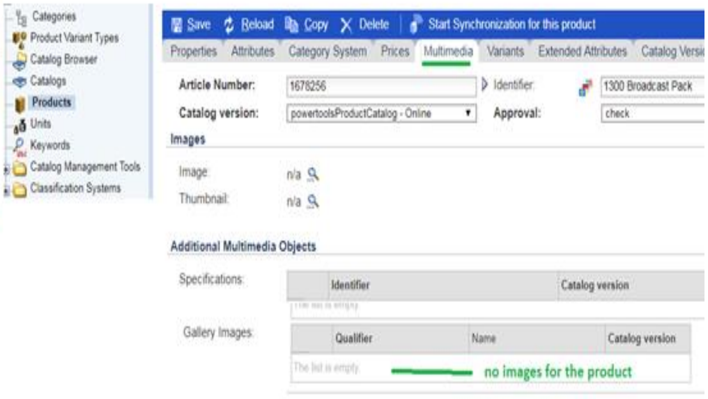
Goto hMC → Catalog → Products and use the Saved Query from the "Saved Queries" button on the top-right of the Search Pane. Click the "Products Without Gallery Images" option.



Attribute	Locale	Comparator
Article Number		contains
Identifier	en	contains
Catalog version		is equal
Product variants type		is equal

Article Number	Identifier
1678256	1300 Broadcast Pack
1678313	ProPunch™ 110
2613282	1m USA 10Gb LC/LC Duplex 50/125 Multimode Fiber Patch Cable
3756512	n/a
3756514	n/a
1678256	1300 Broadcast Pack
1678313	ProPunch™ 110
2613282	1m USA 10Gb LC/LC Duplex 50/125 Multimode Fiber Patch Cable

These are all the products without Gallery images



Article Number: 1678256
Identifier: 1300 Broadcast Pack
Catalog version: powertoolsProductCatalog - Online
Approval: check

Images

Image: n/a
Thumbnail: n/a

Additional Multimedia Objects

Specifications:

Identifier	Catalog version
The list is empty	

Gallery Images:

Qualifier	Name	Catalog version
The list is empty		

no images for the product

Contact us for more information → chennareddytraining@gmail.com (Java–Salesforce–SAP Portal–UI5/Fiori–Hybris)