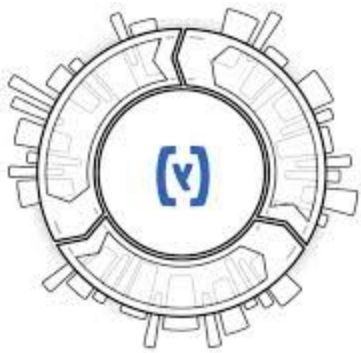

BY
Vishal Sharma
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13015

*Version:1.02

*Changes Include new Sections , links and certain Code modification.
Note: Use Web Browsers like Chrome or Firefox to open this PDF File.

SAP HYBRIS INTEGRATION

Hi and Welcome to SAP Hybris Integration. This Documentation will Guide you through steps and Procedure involved in setting your Hybris system to Interact with your SAP ERP. The Document is divided into two parts.

Part - I

It is used to set up Datahub system only.

Part -II

Explains the process involved in Setting up System to transfer data between your hybris - Datahub - SAP ERP

In Part II there are two ways of transferring Data between. The first is Asynchronous and second is Synchronous. The Asynchronous method involves the use Of Datahub while the Synchronous method involves direct interaction between your Hybris and SAP system without any interface of your DataHub.

Legends

In this document the following Conventions are used

“BOLD” - Highlights Important points

“www.abc.xyz” - Highlights Links

“`code` ” - Highlights Code and properties used in your Application.

“(**OPTIONAL**)” - This field can be skipped up to user Choice.

“{EXAMPLE}” - Necessary Fields to be Filled by the Reader.

{ip_address} - if you are setting up on different machine then place your machine ip else if you are using your own machine then replace it with **localhost**.

NOTE: While making this Documentation the Hybris Suite Available was 5.7.0.3 . For versions 5.6 and above the following documentation is suitable. For versions below 5.6 some functionality will be missing.

PART - I

SAP HYBRIS INTEGRATION

DATAHUB INSTALLATION

Installation Requirements

1. Java JDK 8
2. Hybris suite 5.6 and above
3. MYSQL Database
4. Apache Tomcat version 7.xx (Note: Data Hub will not be supported for version 8 and 9 reason will be explained in one of the below steps)
5. Download link https://tomcat.apache.org/download-70.cgi
6. Windows and Linux OS .
7. Memory Requirement if you are running both Hybris and DataHub Server on same machine then its is recommended to run on 16GB Ram running on 8GB Ram will slow down your system.

Before starting please refer the architecture and design of datahub or you won't be able to understand the implementation part defined below. The following links provide entire Overview of datahub and SAP Integration
https://wiki.hybris.com/pages/viewpage.action?spaceKey=release5&title=hybris-SAP+Solution+Integration

NOTE: Please make sure you follow all the steps mentioned below skipping any step will not run your Datahub Server. So carefully and vigilantly follow each and every step.

UNKNOWN ISSUE:-Please use Web Browsers to open this pdf files. While Copying any codes that contains '-' symbol from Adobe Pdf viewer cannot be copied to your Text file.

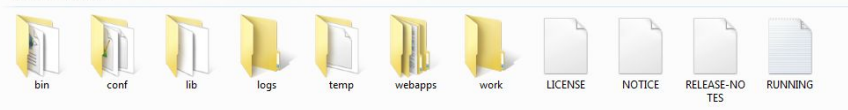
Step 1:

Download Apache Tomcat in the above specified link. Create a Folder and extract Tomcat server that you have downloaded. For Explanation purpose I have created a folder called Datahub. In this Folder I have Extracted the Tomcat Files

If you want to know more about the process I am about to write below please access the wiki hybris link for more information https://wiki.hybris.com/display/release5/Getting+Started+with+the+Data+Hub

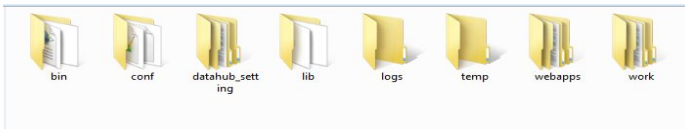
Step 2:

In your Data Hub Tomcat Location got to webapps dir and delete all the files present in the folder.
EXAMPLE:
Your newly extracted Tomcat Folder looks something like below image



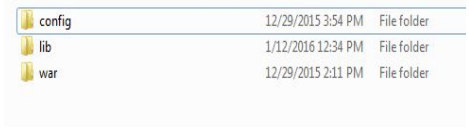
webapps folder content

Delete all the **webapps** folder contents not the **webapps** folder **itself**. The reason for deleting them is that they will not be used by datahub and may take up some memory for compiling.



Step 3:

Create a Folder Called datahub_setting inside the DataHub Folder. Here all your Data hub related files and libraries will be kept. Inside the Folder create three new folders called config,lib and war. In cofig folder your local.properties and encryption files will be kept in your lib your mysql jar files and other files used by datahub will be added finally in your war folder your datahub-webapp-5.X.X.X-RCX.war file will be kept.



Note: Based on suite version the war file name may vary.

P.S: Till now only folders are created we haven't added any libs or files yet Just the purpose of each folder is explained.

Step 4: Configuring Tomcat(i.e your DataHub Server)

Before Configuring the datahub Goto your Hybris Suite > **bin** > **ext-integration** > **datahub** > **web-app** > **datahub-webapp-5.X.X.X-RCX.war**. Copy the war file and paste it in your tomcat location **datahub** > **datahub_setting** > **war** paste inside the **war** folder

In your Tomcat folder goto **Conf** Folder If you have previously run Tomcat server than a folder called **Catalina** would have already have been created If you have till now not run your tomcat server(just to see if it is running or not) then create a folder called **Catalina.** Inside the Folder create another folder called **localhost**. Inside localhost folder create an xml file called **datahub-webapp.xml** .

datahub-webapp.xml contents (Avoid copying with Adobe pdf viewer use your Web Browser)

```
<Context antiJARLocking="true"

docBase="/${catalina.home}/datahub_setting/war/datahub-webapp-5.7.0.2-RC1.war"
         reloadable="true">
      <Loader className="org.apache.catalina.loader.VirtualWebappLoader
      virtualClasspath"=
                      "/${catalina.home}/datahub_setting/config/;
            /${catalina.home}/datahub_setting/lib/*.jar"/>
</Context>
```

If you are unable to copy the above lines of code please copy from the wiki link provided below:
https://wiki.hybris.com/display/release5/Downloading+the+Data+Hub+and+Configuring+It+for+Standalone+Use+with+Tomcat#DownloadingtheDataHubandConfiguringItforStandaloneUsewithTomcat-InstallationoftheDataHubonaTomcatServer

Important Note: I was using Hybris suite 5.7.0.3 and it came with datahub 5.7.0.2 version It will vary from version to version so please make sure in your xml file in the **docBase="/${catalina.home}/datahub_setting/war/datahub-webapp-5.X.X.X-RCX.war"** location put your war file name.

Loader className="org.apache.catalina.loader.VirtualWebappLoader in your xml file is not supported in Tomcat version 8 and above hence please use only 7.XX tomcat version.

Step 5:

Create a **new Schema** in your database named of your Choice (**Optional**).

Now that you have created an xml file got to your tomcat folder > **datahub_setting** > **config** > create local.properties file

local.properties content

#Mysql Settings change your database name and password based on your db configuration

```
dataSource.className=com.mysql.jdbc.jdbc2.optional.MysqlDataSource
```

#Replace {Schema_name} with your created Schema

```
dataSource.jdbcUrl=jdbc:mysql://localhost/{Schema_Name}?useConfigs=maxPerformance&
rewriteBatchedStatements=true
dataSource.username=root
dataSource.password=root
```

#Encrytion file location

```
datahub.encryption.key.path=${catalina.home}/datahub/config/encryption-key.txt
```

#datahub Export link

```
datahub.extension.exportURL=http://{ip_address}:{port_number}/datahubadapter
datahub.extension.userName=admin
datahub.extension.password=nimda
datahub.server.url=http://{ip_address}:{port_number}/datahub-webapp/v1
```

#Initialize Datahub Db every time you start datahub server
 # To change value remove create-drop and replace with update

```
kernel.autoInitMode=create-drop
```

#Target Hybris Sytem

```
targetsystem.hybriscore.url=http://{ip_address}:{port_number}/datahubadapter
targetsystem.hybriscore.username=admin
targetsystem.hybriscore.password=nimda
```

 # Please ask Sap people for the following properties if you're testing datahub for first time then #please don't add below lines just comment them

```
targetsystem.saperp.url=
targetsystem.saperp.username=
targetsystem.saperp.password=
targetsystem.saperp.receivername=
```

For more properties refer ur hybris suite sap b2c or b2b gradle file because some properties are not added.

Step 6:

In the same folder as above step create a txt file named **encryption-key.txt**

encryption-key.txt contents
05D8D6D47419CCD6A2C21F7830832A2C

For masking Rest API Calls please refer wiki hybris link below (**OPTIONAL**)
https://wiki.hybris.com/display/release5/Setting+Up+the+Data+Hub+Encryption+Configuration

Also to add SSL Certificate(for https protocol). to create SSL certificate please refer (**OPTIONAL**)
https://tomcat.apache.org/tomcat-6.0-doc/ssl-howto.html

Step 7:

Go to your suite **bin** > **ext-integration** > **datahub** > **extensions** > **sap** > copy sapproduct raw,canonial and traget saporder raw,canonical and target sapcustomer raw , canonical and target sappricing raw,canonical and target sapidocconiguration party canonical sapcoreconfiguration and paste it in **datahub** > **datahub_setting** > **lib** folder.

Also copy your mysql jar file in the same location. Mysql jar should be **5.1.X** version only.

Configuring Port Number in Tomcat Server: in your Tomcat/Datahub Home Directory goto **conf** > **server.xml** change the following default port number 8080 with port number of your choice.
Note: Find the Below lines in the File and replace the Port number only.

```
<Connector port="{port_number}" protocol="HTTP/1.1"
               connectionTimeout="20000"
               redirectPort="8443" />
```

```
<Connector port="{port_number}" protocol="AJP/1.3" redirectPort="8443" />
```

Step 8:

Goto your tomcat home directory and create a **datahubserver.bat** file. If you are unable to copy the lines below find the following code in the given link.
https://wiki.hybris.com/display/release5/Downloading+the+Data+Hub+and+Configuring+It+for+Standalone+Use+with+Tomcat#DownloadingtheDataHubandConfiguringItforStandaloneUsewithTomcat-InstallationoftheDataHubonaTomcatServer

datahubserver.bat contents (Avoid copying with Adobe pdf viewer use your Web Browser)

```
rem @echo off
rem Explanation of settings in CATALINA_OPTS:
rem * Set the minimum memory to 2gb
rem * Set the maximum memory to 4gb
rem * Use the ParNew garbage collector for the young generation heap
rem * Use the ConcurrentMarkSweep garbage collector for the old generation
rem     heap
rem * Tell the JVM to touch all memory pages during JVM initialization
rem * Disable explict garbage collection (i.e., via the System.gc() method)
set CATALINA_OPTS=-Xms4096m -Xmx4096m -XX:+UseConcMarkSweepGC -XX:+UseParNewGC
-XX:+AlwaysPreTouch -XX:+DisableExplicitGC
setlocal
if not ""%1"" == ""run"" goto mainEntry
if "%TEMP%" == "" goto mainEntry
if exist "%TEMP%\%~nx0.run" goto mainEntry
    echo Y>"%TEMP%\%~nx0.run"
if not exist "%TEMP%\%~nx0.run" goto mainEntry
    echo Y>"%TEMP%\%~nx0.Y"
    call "%~f0" %* <"%TEMP%\%~nx0.Y"
    rem Use provided errorlevel
    set RETVAL=%ERRORLEVEL%
    del /Q "%TEMP%\%~nx0.Y" >NUL 2>&1
    exit /B %RETVAL%
:mainEntry
del /Q "%TEMP%\%~nx0.run" >NUL 2>&1
rem Guess CATALINA_HOME if not defined
set "CURRENT_DIR=%cd%"
echo "CATALINA_HOME=%CATALINA_HOME%"
if not "%CATALINA_HOME%" == "" goto eof
    set "CATALINA_HOME=%CURRENT_DIR%"
if exist "%CATALINA_HOME%\bin\catalina.bat" call
"%CATALINA_HOME%\bin\catalina.bat" run
:eof
```

After creation Run the bat file to start datahub server

DATAHUB FUNCTIONALITY TESTING

To check if IDOC receiver is working or not. Copy the following URL in your Browser or Rest Client API.
http://{ip_address}:{port_number}/datahub-webapp/v1/idoc/receiver

Please refer the below link to test sample apparel catalogs that comes with your hybris suite
https://wiki.hybris.com/display/release5/Data+Hub+Solution+Book

Note: Publication will not work unless you start your Hybris system

For testing your datahub please refer following links
https://wiki.hybris.com/display/release5/Testing+Data+Import+into+the+Data+Hub
https://wiki.hybris.com/display/release5/Testing+Composition+in+the+Data+Hub
https://wiki.hybris.com/display/release5/Testing+Publication+in+the+Data+Hub

PART-II

Before moving with your hybris installation Process and Datahub Configuration hybris has Provided a set of Rapid Deployment Solution. This will Enable you to quickly configure both your SAP ERP and Hybris Configuration without any Delay.Although the same process will be done below but I would prefer if you could follow the documentation. Please download the document in the provided link and share it with both your SAP team and Hybris team as it explains configuring both your systems.
https://wiki.hybris.com/display/release5/Rapid+Deployment+Solution+for+SAP+ERP+Integration

Asynchronous Order Management

Additional DataHub Settings

Please add the following properties to your local.properties in the datahub file.For Understanding SAP Control Header Please refer the following link
https://wiki.hybris.com/display/release5/sapidocoutboundadapter+Data+Hub+Extension
NOTE: Some of these properties were already added in PART- I just modify or replace them local.properties contents (Try writing each properties in one line)

#please ask Client, username, password and receiver name from SAP Team members

```
targetsystem.saperp.url=http://{ip_address}:{port_number}/sap/bc/idoc_xml?sap-client={client}
targetsystem.saperp.username={user}
targetsystem.saperp.password={password}
targetsystem.saperp.receivername={SAP_ERP_LOGICAL_SYSTEM}
```

#Enable dynamic offset for IDoc numbers - deactivate in case of a persistent DB!

```
sapidocoutboundadapter.usedynamicidocnumberoffset=true
sapidocoutboundadapter.receivername={SAP_ERP_LOGICAL_SYSTEM}
sapidocoutboundadapter.senderport={PORT_FROM_WHICH_SAP_WILL_SEND_IDOC_TO_YOUR_DATA HUB}
sapidocoutboundadapter.sendername={SAP_ERP_PARTNER_NAME}
```

#enable automatic composition & publication, 5000ms interval (Try writing each properties in one line)

```
sapcoreconfiguration.autocompose.pools=GLOBAL,SAPCONFIGURATION_POOL,SAPCUSTOMER_INBOUND_POOL,SAPCONSUMER_INBOUND_POOL,SAPCONSUMER_OUTBOUND_POOL,SAPORDER_INBOUND_POOL,SAPORDER_OUTBOUND_POOL
sapcoreconfiguration.autopublish.targetsystemsbypools=GLOBAL.HybrisCore,GLOBAL.SapErpSystem,SAPCUSTOMER_INBOUND_POOL.HybrisCore,SAPCONSUMER_INBOUND_POOL.HybrisCore,SAPCONSUMER_OUTBOUND_POOL.SapErpSystem,SAPORDER_OUTBOUND_POOL.SapErpSystem,SAPORDER_INBOUND_POOL.HybrisCore
sapcoreconfiguration.autopublish.sleeptime:5000
sapcoreconfiguration.autopublish.initialsleeptime:5000
```

#Pool holding SAP configuration settings

```
sapcoreconfiguration.pool=SAPCONFIGURATION_POOL
```

Hybris Installation process

The below process explained means that you understand the basic concepts of Hybris and also you understand the setup of hybris suite through gradle recipe file . If not please refer hybris wiki on how to setup hybris through gradle method.

Create your own recipe file in your **build.gradle** file add the following properties
Note: The below method is for **b2c** accelerator make adjustments to run on **b2b** accelerator. Also the following is For Asynchronous in later Release we will add Synchronous, CPQ and c4c systems.

build.gradle contents

```
localProperties {
        /* please adapt the number ranges according to the settings in the ERP backend */
      property 'keygen.customer.sap_customer_id.start', '0000490000'
      property 'keygen.customer.sap_contact_id.start', '0000490000'

      /* config async order management - order number */
      property 'keygen.order.code.start', '0006200000'

      property 'sapcustomerexchange.outbound.datahub.feed', 'SAPCONSUMER_OUTBOUND_FEED'

      /* config sapcoreconfiguration */
      property 'sapcoreconfiguration.datahuboutbound.enabled', 'true'

      /*  config async order management */
      property 'numberseries.cache.size.order_code', '1'
      property 'saporderexchange.orderoutbound.maxRetries', '3'
      property 'log4j.logger.de.hybris.platform.sap.orderexchange', 'debug'
     /*Config datahub setting*/
      property 'datahubadapter.datahuboutbound.url','http://{ipaddress}:{portnumber}/datahub-webapp/v1'

}

extensions {
                    …
                    …
                    …
                    …
                    …
                    …

                    scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/core'
                     scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/masterdata'
```

```
        scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/asynchronousOM'
        scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/availability'
        scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/creditCheck'
        scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/adtreco'
        scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/sapprodreco'
        scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/pointofsale'
        scanPathWithAutoLoad '${HYBRIS_BIN_DIR}/ext-integration/sap/testsupport'

        extName 'datahubadapter'
        extName 'datahubbackoffice'

}

task setup << {

    apply plugin: 'installer-platform-plugin'
    apply plugin: 'installer-addon-plugin'

    def thePlatform = platform(config)
    thePlatform.setup()

        thePlatform.project.addons {
            names "sapcoreaddon,sapprodrecoaddon,sapcarintegrationaddon"
            template "{ENTER_YOUR_STOREFRONT_NAME}"
            storeFronts  "{ENTER_YOUR_STOREFRONT_NAME}"
        platform thePlatform
        }
}
```

Before Initialization your hybris suite.
Goto **hybrissuite** > **bin** > **ext-integration** > **datahubbackoffice** > **resources** > **impex** > **essentialdata-datahubbackoffice.impex**

#Modify only this Line

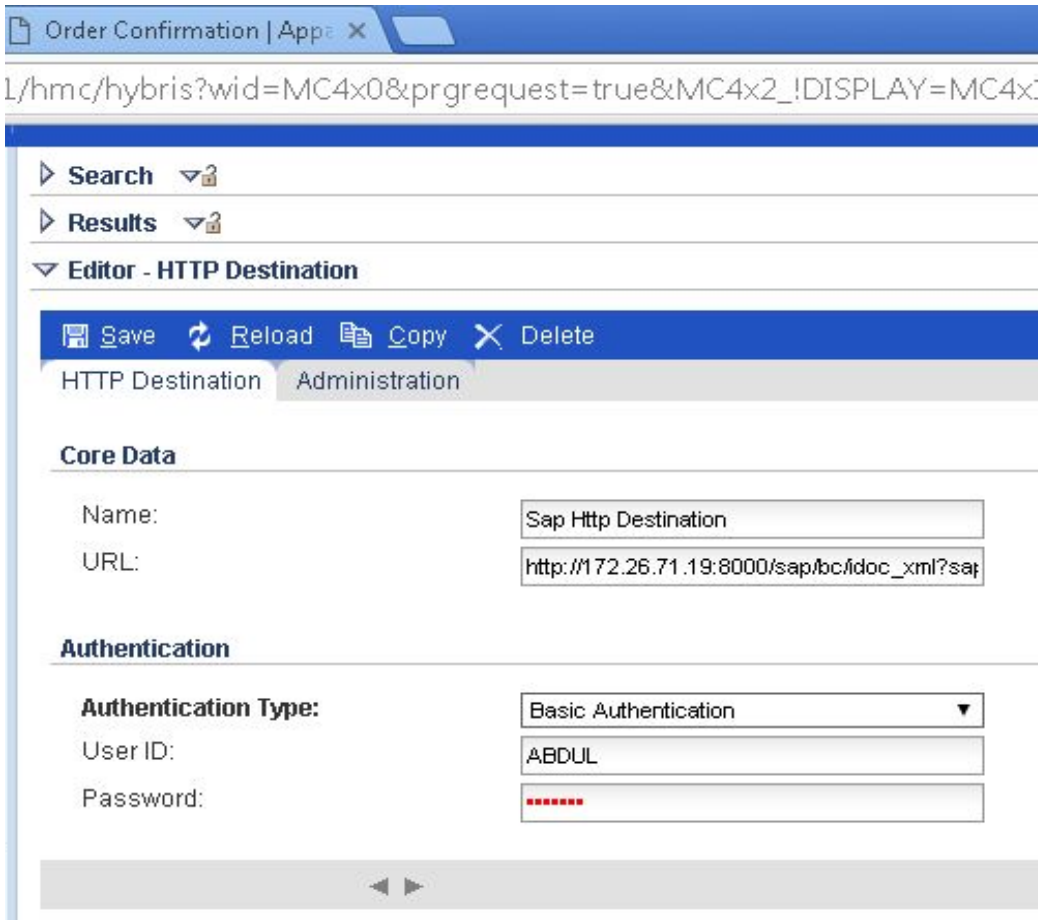
```
INSERT_UPDATE DataHubInstanceModel;instanceName[unique = true];instanceLocation
;{anyname};http://{ip _address}:{port_number}/datahub-webapp/v1;
```

Initialize and Start the server as well as datahub server

Hybris Configuration

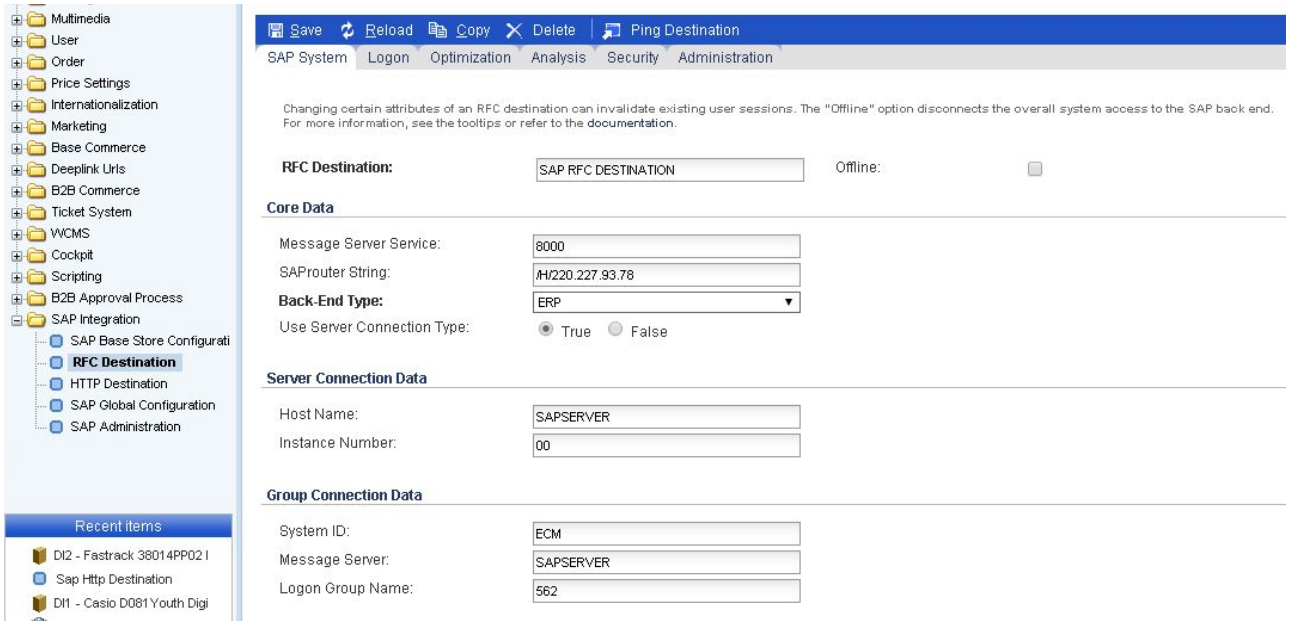
CREATE HTTP DESTINATION

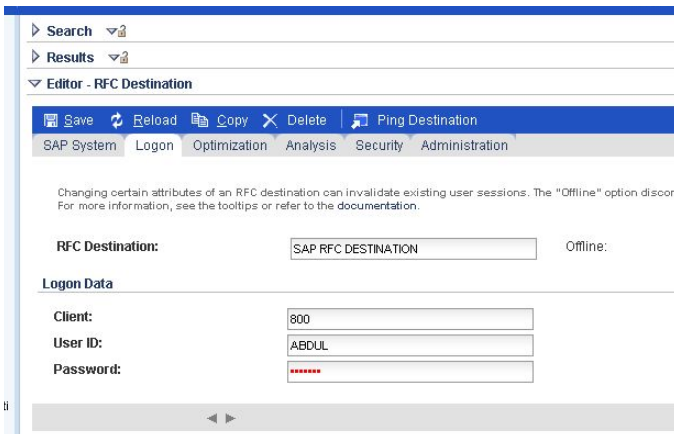
The below Steps can also be Performed in Back office as well.
The below Pictures are for **Representational Purpose Only** based on your Requirement do the Customization.



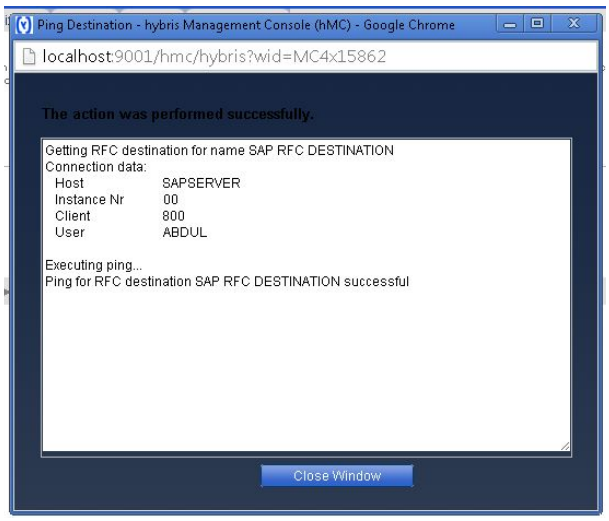
SAP HYBRIS INTEGRATION

CREATE RFC DESTINATION



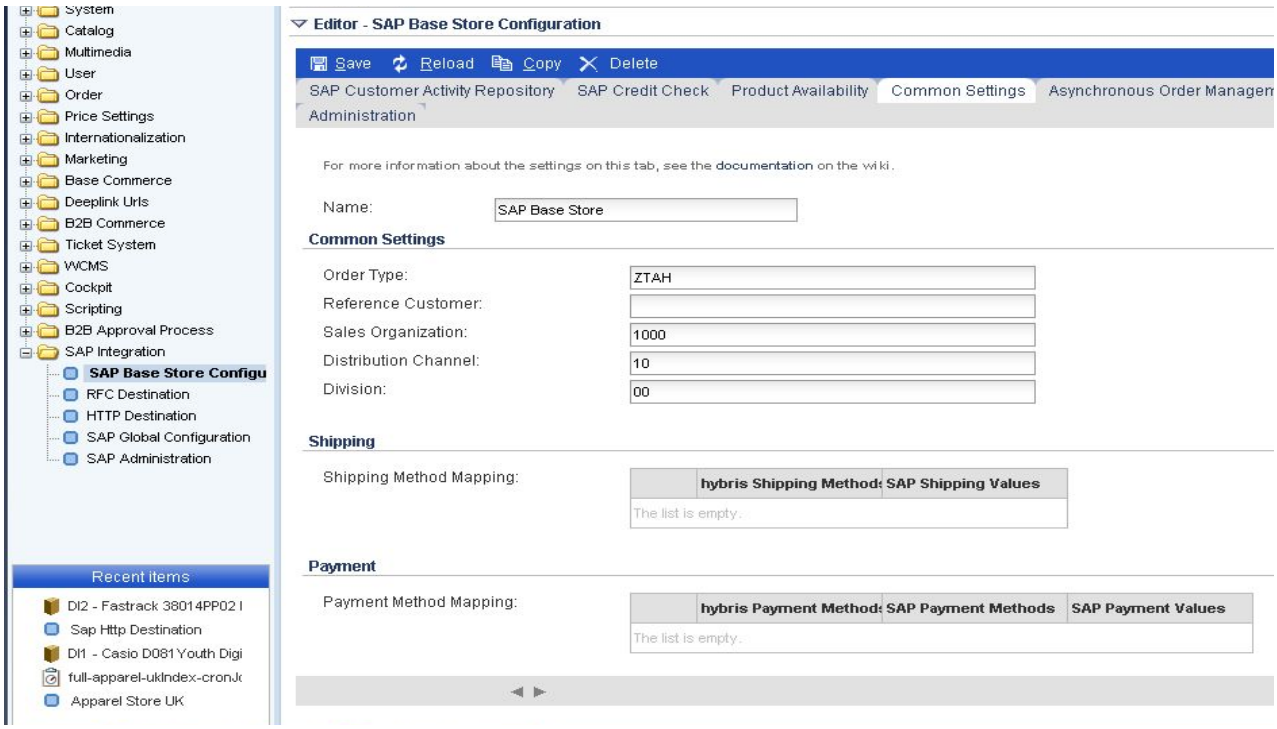


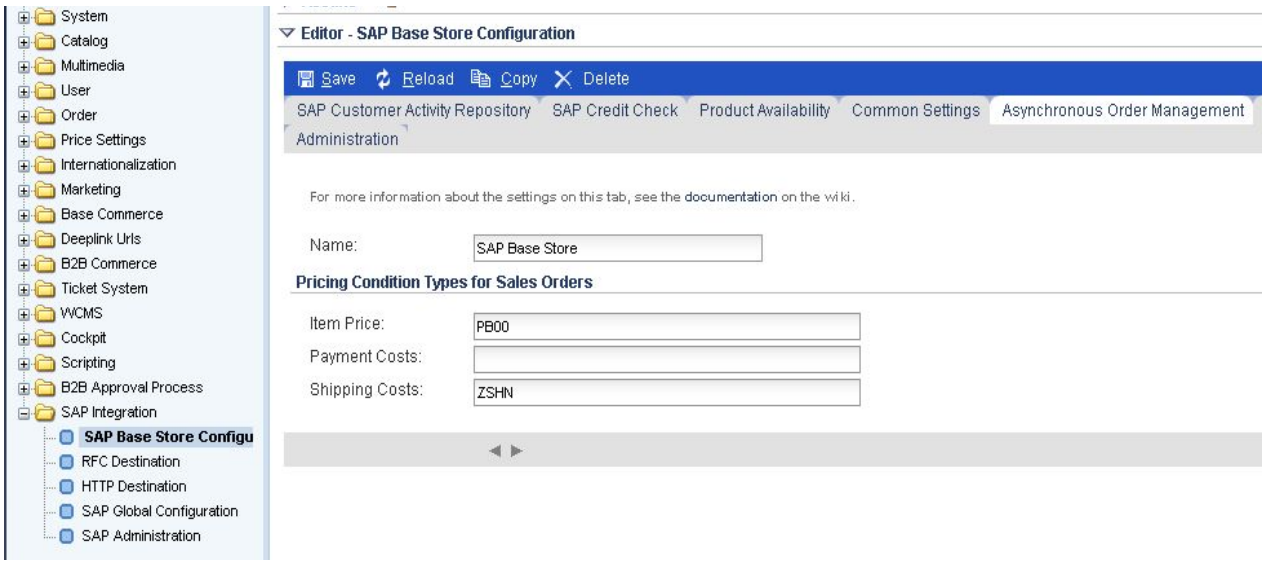
NOTE: To Verify Connection Click on Ping Destination Tab



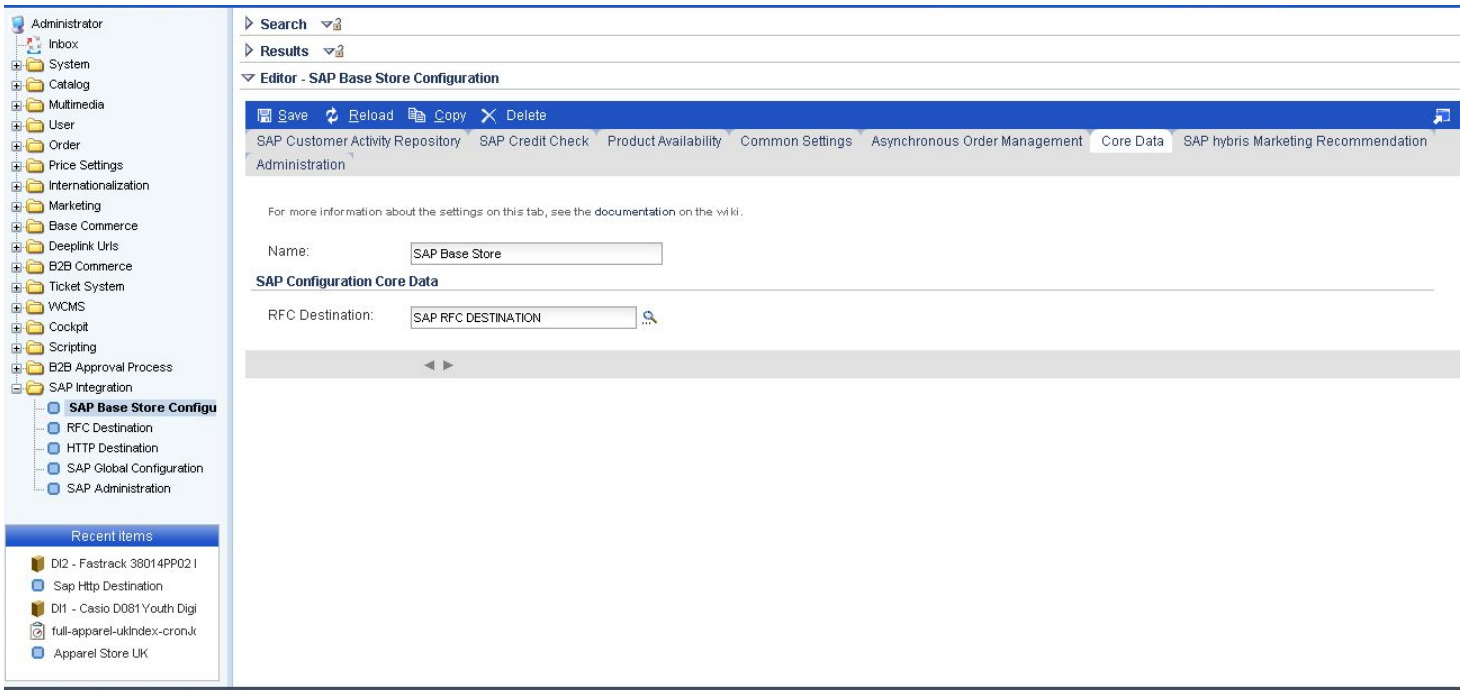
SAP HYBRIS INTEGRATION

Creating SAP Base Store Configuration

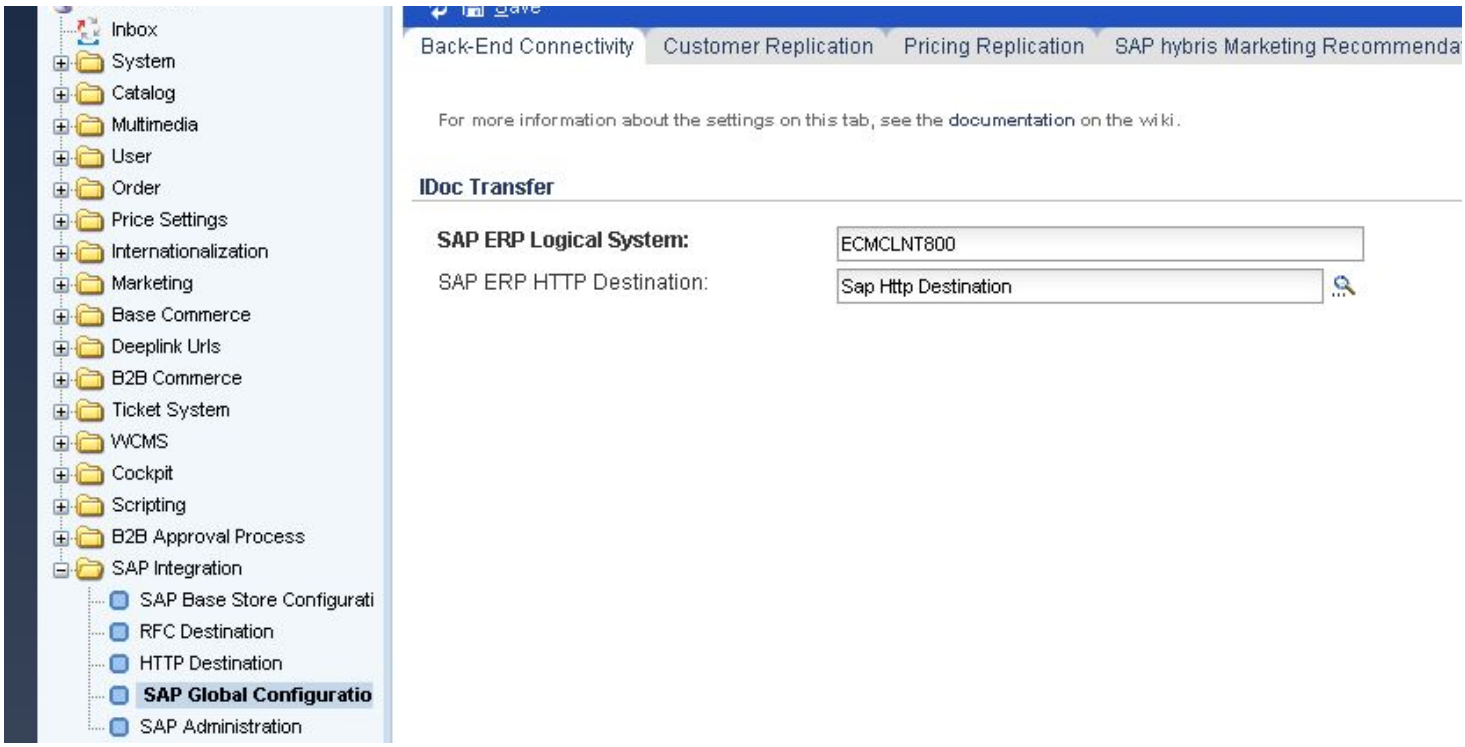




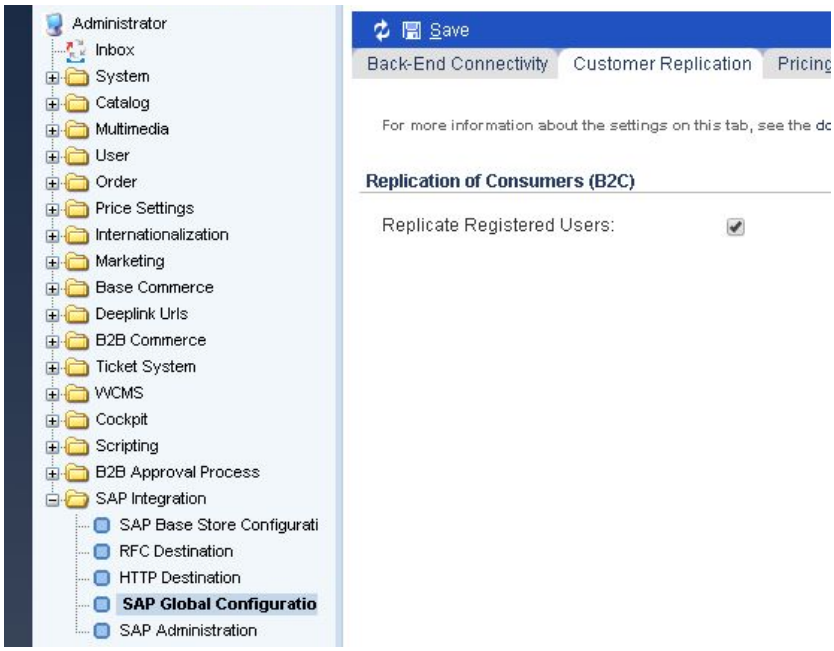
SAP HYBRIS INTEGRATION

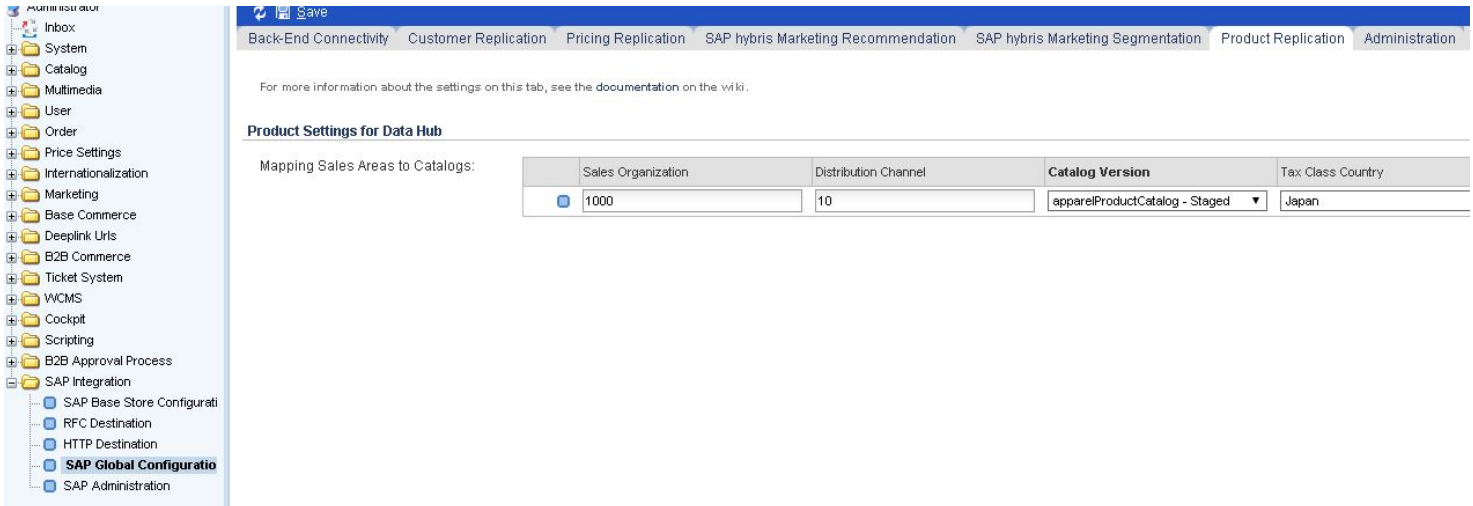


SAP GLOBAL CONFIGURATION

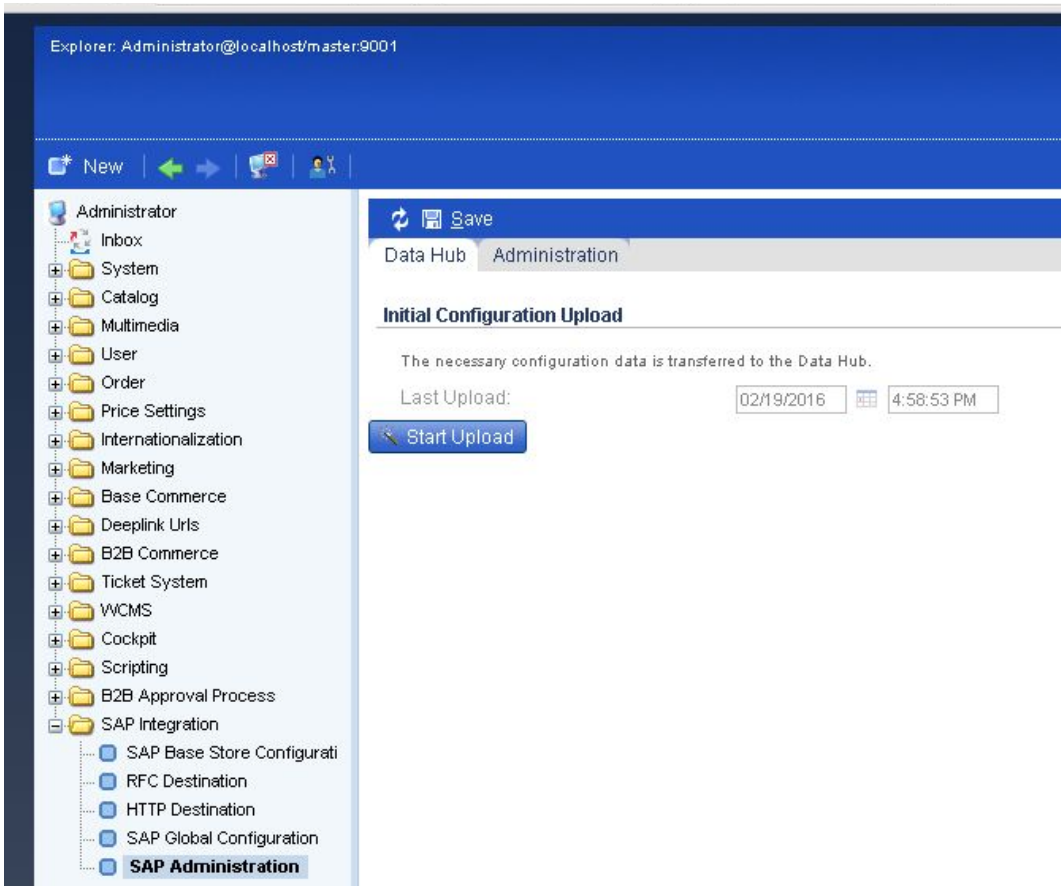


SAP HYBRIS INTEGRATION





UPLOAD SETTINGS TO DATAHUB



NOTE: Incase Start Upload Button is Disabled then Click on the save it will be enabled.