This Document describes how to install the ITGS, IAS, DB installation and configuration.

ITGS, IAS Installation & Configuration

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1. Pre-requisites:

- Java 1.5 and Above (Don't use Openjdk)
- iTGS Server Package
- Need ip address and port of the NPCI, CBS and iAS
- iAS server package
- postgresql-9.1 and MySQL-5.1.2
- iCsyncFP_Upload-1.7.0 package

2. ITGS Server Architecture:

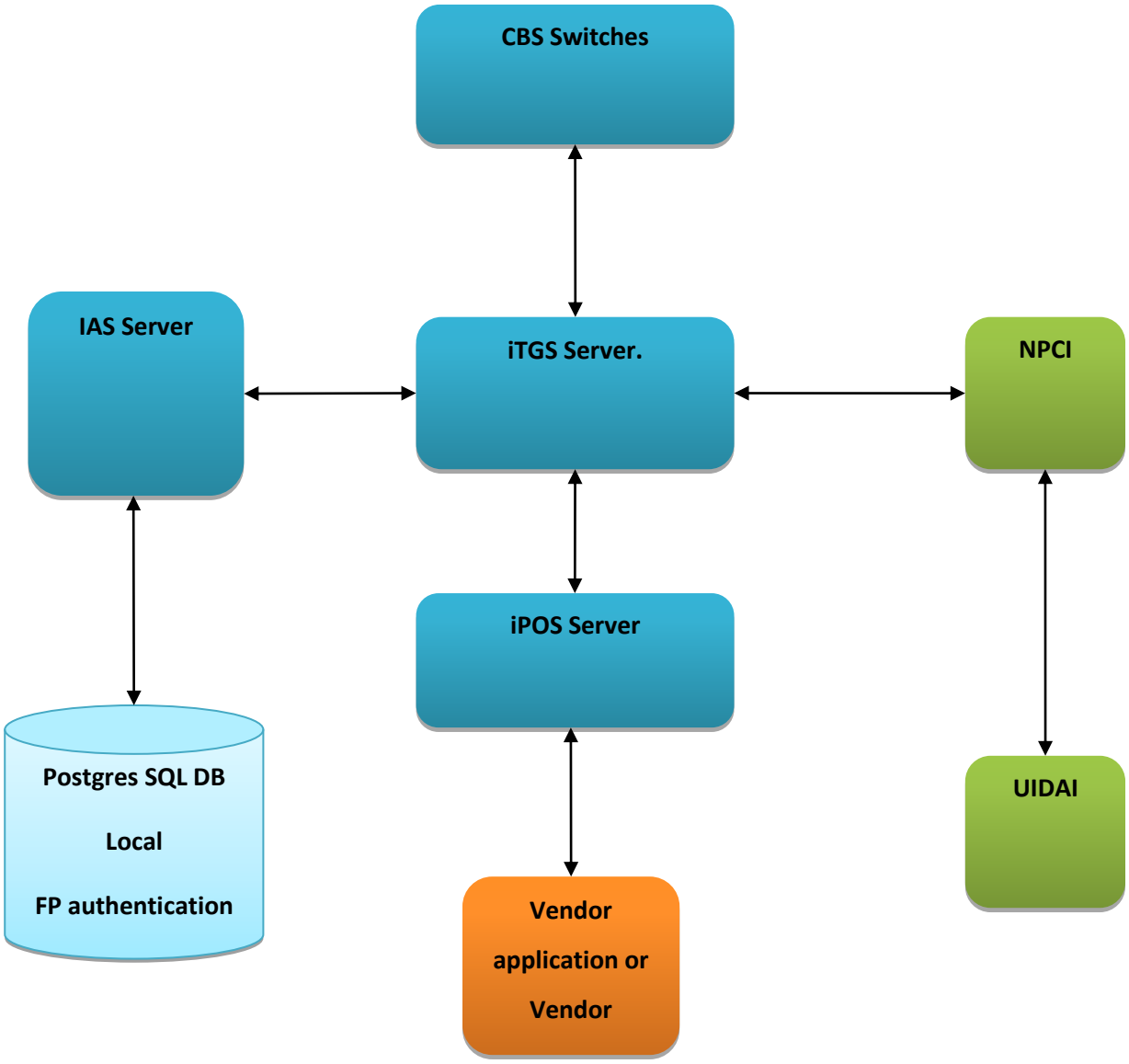

Figure 1: ITGS Architecture and Work flow

3. Java Configuration:

Before going to download, need to check the bit and version of the servers, which means 32 bit or 64 bit. After that you can download as per the system requirement.

Copy the java...tar.gz file into /usr/java/ and extract it

After that follow the steps as below.

#cd /etc/alternatives/
rm -f java javac keytool
ln -s /usr/java/jdk1.5.0_06/bin/java .
ln -s /usr/java/jdk1.5.0_06/bin/javac .
ln -s /usr/java/jdk1.5.0_06/bin/keytool .
#vi .bash_profile
export JAVA_HOME=/usr/java/jdk1.5.0_06 (Note* :- last don't give slash)
:wq!
java -version (Enter) (Here you can see java latest version what you installed.)
source .bash_profile
echo $JAVA_HOME

4. iTGS Server Configuration:

Absolute path of the iTGS Server folder : /home/ITGS/iTGS-Server1.0.010/
Just copy the iTGS Server Folder put it in a particular user home folder. After that need to edit the .properties file. Need to edit all ip address and port no as per the bank configuration.
In this folder have important .properties files as follows.

Here in the iTGS server folder has ITG.jar file, it will be provided by our development team.

Note: Please make a separate IP & Port for TEST/PRODUCTION. We can't able to do the test and production in the same time. Testing IP is different (only for testing purpose). Production IP is different it's totally

4.1. ITGS Directory Structure:

In iTGS Server folder has 4 folders are very important.

Tdr :

transaction data record: it contains what are the transaction happened via iTGS server
It has two kind of files is there one is .STV.zip .STC.zip
.STC.zip – send to destination or send to cbs.
.STV.zip – send to source or send to vendor.

This file format is

<gateway Ref No>-<Transaction key Ref No>-<timestamp>ID.zip

In this format for every transaction both .STV.zip .STC.zip file will create. As per the successful FI transaction there are 6 files will create in .tdr file (.STC.zip file 3 and .STV.zip file is 3).
The both .STV and .STC .zip file contain two files there are .jason and .tdr file.
.jason file is plain text file some portion of the transaction details.
.tdr file is a key value pair from .STC.zip file, it is also contains transaction details, like transaction time, time stamp, unique id etc.

Log: In every transaction should be stored in log folder.

Stat: Statistics folder, which is used to store the statistics details about the iTGS server.

iTGS_Lib:

Library files, which contains all supported library files for iTGS and iAS server.
It is very important as per the requirement our development team will give new .jar file to replace old one.

4.2. ITGS Property Details:

4.2.1. iTGS.PROPERTIES:

Property values	Remarks
PORT	Transaction Port number. You have to mention as per the instruction
CONNECT_TIMEOUT	Max 30 sec
ALLOWED_IP_LIST	Need to insert the vendor ip address as well as our iAS
CODEC_FACTORY_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
PROTOCOL_HANDLER_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
STATISTICS_ENABLED	It should be "true". It's checking all the iTGS statistics(information about the iTGS server running statistics)
STATISTICS_OUTPUT_PATH	You have to mention the path properly otherwise it won't work. If you have copied the iTGS application in /home then no need to change anything. Default path is /home/iTGS-Server1.0.0.10/stat
STATISTICS_INTERVAL	Interval time for statistics update. Here default is 120 seconds
SSL_ENABLED	Default is false. If bank wants to do transaction using ssl after that we are going to use this is true. And bank will provide ssl keys (Private & public).
SSL_KEYSTORE_PASS	Leave, as it is
SSL_TRUSTSTORE_PASS	Leave, as it is
ACCOUNT_VERIFICATION_ENABLED	As of now it's false. It will be using in future. Leave, as

	it is
DB_ENVIRONMENT_PATH	Leave, as it is
ACCOUNTS_DATA_FILE	Leave, as it is
VENDORCODE_IP_VERIFICATION_ENABLED	Default is false. Leave, as it is.
VENDORCODE_IP_MAPPING	Leave, as it is

4.2.2. CLIENT1.PROPERTIES

Property values	Remarks
HOSTNAME	Here need to mention CBS Switch ip address(Bank will provide)
PORT	Here need to mention CBS Switch port no (Bank will provide)
CONNECT_TIMEOUT	Default is 20 seconds.
ROUTING_KEY	Routing key Bank's 6 digit IIN no (Bank will provide)
ACQUIRER_INSTITUTION_ID	Acquirer Institution id is 6 digits (Bank will provide)
SUCCESS_RESPONSE_CODE	Usually success response should be 000 as per the CBS switch
NPCI_CBS_POOL_ACCOUNT	Bank has to provide
CODEC_FACTORY_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
NPCI_CBS_MESSAGE_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
IFIS_CBS_MESSAGE_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.

LOCAL_PORT	Default local port should be -1, No need to change. OS should take care of the local port if we give -1.
ISO_FORMAT_FILE_PATH	We have to give the .xml file path, to phrase the message to CBS switch (Which means ISO8583 format has to send bitwise using .xml file.) Usually these files are ISO8583_Bankname.xml.
UNIQUE_ID_ISO_BIT_POS	Unique id iso bit position will vary from one bank to another bank. As per the bank it should be 11 or else 37.
ITGS_PRIVATE_DATA_ISO_BIT_POS	iTGS private data iso bit position will vary too, as per the itgs it should be 125 or 127.
RESPONSE_CODE_MAPPER	Response code mapper should mapping CBS switching response code with two digit response code as per the NPCI.
IS_REVERSAL_ENABLED	Default is false. If in the CBS switch reversal enabled, we can make it true. Otherwise no need to change default settings.

4.2.3. IFIS.PROPERTIES

Property Values	Remarks
HOSTNAME	IP address of the iAS server
PORT	Port number of the iAS server
CONNECT_TIMEOUT	Default is 10 seconds
ROUTING_KEY	Routing key should be 000001. Don't change different number.
CODEC_FACTORY_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
LOCAL_PORT	Default local port should be -1, No need to change. OS should take care of the local port if we give -1.
ISO_FORMAT_FILE_PATH	We have to give the .xml file path, to pharse the message from iTGS to iAS server (Which means ISO8583 format has to send bitwise using .xml file.) Usually this file is ISO8583_IFIS.xml.
UNIQUE_ID_ISO_BIT_POS	Default is 37, no need to change.
ITGS_PRIVATE_DATA_ISO_BIT_POS	Default is 125, no need to change.
IS_REVERSAL_ENABLED	Default is false. If in the CBS switch reversal enabled, we can make it true. Otherwise no need to change default settings.

4.2.4. NPCI.PROPERTIES

Property Values	Remarks
HOSTNAME	IP address of the NPCI Test/Production.
PORT	Port number of the NPCI Test/Production.
CONNECT_TIMEOUT	Default is 20 seconds
ROUTING_KEY	Default routing key is 000000. Don't change.
CODEC_FACTORY_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
LOCAL_PORT	Default local port should be -1, No need to change. OS should take care of the local port if we give -1.
ISO_FORMAT_FILE_PATH	We have to give the .xml file path, to phrase the message from iTGS to NPCI server (Which means ISO8583 format has to send bitwise using .xml file.) Usually these files are ISO8583_NPCI.xml.
UNIQUE_ID_ISO_BIT_POS	Default is 37, no need to change.
ITGS_PRIVATE_DATA_ISO_BIT_POS	Default is 125, no need to change.
ECHO_TIME	Default 180 seconds. It's heartbeat checking I'm alive. Every 180 sec it will send the echo message like I'm alive.
LOGON_TIME	Default 300 seconds. It's a logon time from iTGS to NPCI.
IS_REVERSAL_ENABLED	Default is false. If in the CBS switch reversal enabled, we can make it true. Otherwise no need to change default settings.

4.2.5. PROTOCOLHANDLER.PROPERTIES

Property Values	Remarks
NO_OF_CLIENTS	No of client means how many CBS switch is using in Bank! According that we have to create the ClientX.properties. If we have only one CBS switch we have to create Client1.properties.
TDR_ENABLED	Transaction data received should be true. In this folder we can see the .STC (Send to Destination) and .STV (Send to Source) transaction details.
TDR_LOG_PATH	Where we have to save this tdr files. We have to give the path of tdr.
NO_OF_TDR_PER_FOLDER	We have to mention how many tdr files should store in the folder. Default is 5000
ITGS_INSTANCE_ID	As of now it's 99. it's for future usage. It's all about Cluster level.
IS_NPCI_INTERFACE_ENABLED	If you mention as false it won't communicate with NPCI. If you mention as true it will communicate with NPCI.
IS_IFIS_INTERFACE_ENABLED	If you mention as false it won't communicate with IAS server. If you mention as true it will communicate with IAS server.
IS_DB_CONNECTION_REQUIRED	If you mention as false it won't communicate with DB. If you mention as true it will communicate with DB

4.2.6. DBCONNECTION.PROPERTIES

Property Values	Remarks
DataSourceName	Data source name should be "BioDataStore"
ServerName	Server name should be where you have installed the DB server
PortNumber	DB server port number
DatabaseName	DB name
UserName	DB username
Password	Password
InitialConnections	How many connection you need initially
MaxConnection	Max connection 10
DriverClassName	Driver class no need to change.

In iTGS-Server1.0.0.10 folder has 3 .xml should be there.

- ISO8583_BankName.xml
- ISO8583_IFIS_Format.xml
- ISO8583_NPCI_format.xml

The ISO8583_BankName.xml should be given by our development team.
Using this .xml iTGS server parse the ISO8385 to CBS, this .xml files contain bit positions of the ISO8385 format. It can be vary from bank to bank why because the CBS switch is different for every Bank.
For example:

Vijaya bank is using: Finical.
Canara bank is CBS using: Flex Cube.

5. IAS Server Installation & Configuration:

5.1. IAS Architecture:

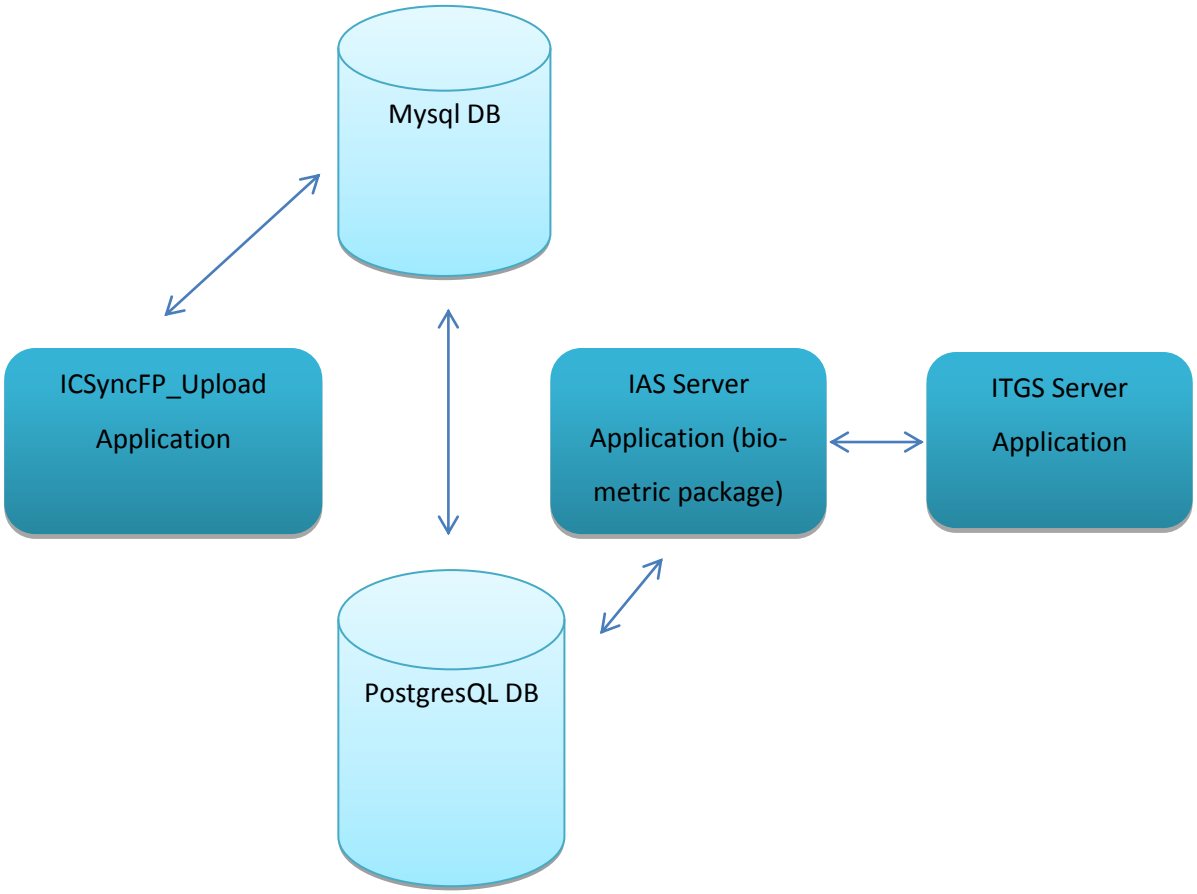

Figure 2 IAS server Architecture and work flow

5.2. iAS package Pre-requisite

a. MySQL DB
b. Postgresql
c. Bio-metric package
d. iCsync_FPUpload package.

5.3. What is IAS Server:

What is iAS server. iAS Server is an integra Authentication Server for FI transaction. Using this Package we have stored all the account holders' geographic details and bio-metric details are updated using iCsync_FPupload package. What is iCsync_FPupload package does? This package is parsing the .FPP, .FMR, .FBR files into postgresql database. For this package we need to install two databases MySQL, Postgresql.

5.3.1. What is Bio-metric package?

Need to compare the bio-metric information what we have stored in our database with what they are going to send when FI transaction. This is also called offline bio-metric matching engine.

5.3.2. How to do that configuration:

After installation go to ANSI_ISO_SDK_Linux folder → bin and then type ./gethwid, It will show the System hardware id. After that copy this file and get the licence for this server.

Licence key should be like .lic file. After that make a directory in /etc/idkit/ and copy this file into it. And make a directory in the root home directory as hidden file like ~/.idkit and copy this .lic file into it. Make a directory in the user home folder as a hidden file like /home/username/.idkit and copy this .lic file into it.

We have to check the licence key is working or not. Before that we have to run the samples.

Go to ANSI_ISO_SDK → samples → java →. /compile after that ./run. It will show the details about the sample authentication score it should be success.

5.3.3. Pre-requisite for the Biometric License Key.

1. ANSI_SDK_LINUX_32bit.tar or ANSI_SDK_LINUX_64bit.tar
2. Java 1.5 and above.

5.3.4. Getting the Hardware ID:

After extracting the Biometric software. Go to bin directory and get the Hardware id like below.

"./gethwid > bankname_servername_osversion.hwid"

After that need to get the licence from Biometric website.

The licence key should be like "iengine.lic"

After that follow the steps below.

mkdir -p /etc/idkit/
#cp -rf iengine.lic /etc/idkit/
#mkdir ~/.idkit
#cp -rf iengine.lic ~/.idkit

if you are running from different user you have to create the "./idkit" file to his home folder.

#mkdir -p /home/user/.idkit/
#cp -rf iengine.lic /home/user/.idkit/

After that make a file "iengine.conf" in /etc/id.so.conf.d/
open the "iengine.conf" file and type "/usr/lib" and save this file.
Run "ldconfig -v"

After that we have to check our licence key is working properly or not.

Go to Biometric folder → sample → java/cpp → if java "./compile" and "./run"
if Cpp "make" or "make STATIC=1" after that run the ./sample file it will show the score.

If the license is valid it will show the score's about the finger print. Incase it shows any error... you have to do following things.

Copy "libiengine_ansi_iso.so.1.56.0" this file into "/usr/lib/" folder incase it's 64 bit you should copy into "/usr/lib64" folder. After that
cd /usr/lib/
#ln -s libiengine_ansi_iso.so.1.56.0 libiengine_ansi_iso.so.1
#ln -s libiengine_ansi_iso.so.1.56.0 libiengine_ansi_iso.so

Make like that in that folder.

After that try to run the sample files it will run definitely.

Incase it's not running please go to the iAS_Server folder run the "./iAS_Server.sh" file.
If the licence is not valid it won't run. If the licence is valid it is running continuously. With the message like below.

"DEBUG [main] (FPMatch.java:68) - Initializing the Fingerprint match engine.

DEBUG [main] (FPMatch.java:70) - Successfully Initialized the Fingerprint match engine.

INFO [main] (AuthServerISO8583ProtocolHandler.java:153) - Configure the timeout thread.

INFO [main] (AuthServerISO8583ProtocolHandler.java:156) - Timeout thread configuration successful.

INFO [main] (AuthServer.java:394) - Protocol handler configuration successful.

INFO [main] (AuthServer.java:396) - Configuring the Codec Factory ....

DEBUG [main] (AuthServer.java:404) - Found the constructor: public org.integra.auth.codec.iso8583.DefaultAuthISOMsgCodecFactory(org.integra.tg.codec.iso8583.Iso8583 Parser)

INFO [main] (AuthServer.java:410) - Codec factory confuguration successful.

INFO [main] (AuthServer.java:415) - Binding the Auth Server to port....

INFO [main] (AuthServer.java:417) - Auth Server Listening on port 1240

5.3.5. iCSync_FP_Upload Configuration:

In iCsync_FP_Upload folder icsync.properties file need to configure with MYSQL DB, after that need to run that application to configure postgresql. This will parse the .FPP, .FMR, .FBR, .JPG this files into postgresql using MySQL.

5.4. IAS Properties Details.

This section is going to explain how to configure the property files of IAS server.

5.4.1. iAS.properties:

Property Values	Remarks
PORT	Here need to give Listening port for iAS server
CONNECT_TIMEOUT	Connection time out should be 30 sec
CODEC_FACTORY_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
PROTOCOL_HANDLER_CLASS_NAME	This is from development team no need to change anything. In future Development team will provide details for any change.
STATISTICS_ENABLED	It should be "true". It's checking all the iTGS statistics(information about the iTGS server running statistics)
STATISTICS_OUTPUT_PATH	You have to mention the path properly otherwise it won't work. If you have copied the iTGS application in /home then no need to change anything. Default path is /home/iTGS-Server1.0.0.10/stat
STATISTICS_INTERVAL	Interval time for statistics update. Here default is 120 seconds
SSL_ENABLED	Default is false. If bank wants to do transaction using ssl after that we are going to use this is true. And bank will provide ssl keys (Private & public).
SSL_KEYSTORE_PASS	Leave, as it is
SSL_TRUSTSTORE_PASS	Leave, as it is

5.4.2. DBCONNECTION.PROPERTIES

Property Values	Remarks
DataSourceName	Data source name should be "BioDataStore"
ServerName	Server name should be where you have installed the DB server
PortNumber	DB server port number
DatabaseName	DB name
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InitialConnections	How many connection you need initially
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DriverClassName	Driver class no need to change.

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Property Values	Remarks
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IS_IFIS_INTERFACE_ENABLED	If you mention as false it won't communicate with IAS server. If you mention as true it will communicate with IAS server.
IS_DB_CONNECTION_REQUIRED	If you mention as false it won't communicate with DB. If you mention as true it will communicate with DB

6. User Enrollment:

6.1. User enrollment by using ikuuki script.

Pre-requisite:

- Create user figs
- ikuuki script

Creating a user figs:

Before running the init_ikuuki_new.sh script we have to create one user name figs. And copy the script in the /root folder. After that ./init-ikuuki-new.sh script.

And install the inotify_x86_32.rpm or inotify_x86_64.rpm has to update as per the server requirement. After that need to edit the the "init_ikuuki-new.sh" script. We have mention "Bank ID" it should be given by bank which is "BIIN issued by NPCI" ID. The Bank ID of the Vijaya Bank is "607075", and need to give vendor code. How many vendors approaching this bank it's 2 digit code. For example TCS vendor id is 05, Integra id is 17, after editing this details run the ./init-ikuuki_new.sh script.

In this script creates "From_vendor, From_Bank, To_Vendor, To_Bank" the folder as well as user. For example: If the vendor wants to push .ACC, .FMR, .FPP, .FBR, .JPG files into our DB, before that they have to login their credentials. "FROM_VENDOR" username vu_<vendorID> and password is like vu_<vendorID>. Same thing for the "FROM_BANK" username bu_<bankID> and password is also same.

TCS vendor ID →05 Bank ID →607075

FROM_VENDOR →upload from their home folder the .ACC .FPP, .FMR, .FBR, .JPG using username vu_05 and password vu_05 (vu →vendor upload). .ACC file will go to TO_BANK folder.

TO_BANK →download the vendor .ACC file from bank home folder which is bd_607075 username and password bd_607075 (bd_607075 →bank download) credentials

FROM_BANK → upload the .RES file to their home folder using the bu_607075 username and password is bu_607075 (bu →bank upload) credentials.

TO_VENDOR → vendor download the .RES file from here using the vd_05 username and password is vd_05 (vd → vendor download) credentials.