SOP – DataCash Payment Gateway

Prepared For

Iptor IP1

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Introduction

DataCash is an online payment management gateway system used by businesses worldwide. IP1 customers that use DataCash for their online credit card payment processing can use this document to install Payment Handler and setup and configure Web and IP1 application systems to process payments.

All the installation, setup and configuration including prerequisites and troubleshooting information required for credit card processing using DataCash Payment gateway is included in this SOP document.

It details various DataCash and IP1 configurations and setups and links to DataCash user documentation for detailed information on specific setups.

You can create a test account and test transactions before changing settings to go live with live transactions.

Purpose

The purpose of this document is to assist Iptor consultants' install, setup and configure appropriate business rules in IP1 and DataCash at a customer site for DataCash Payment processing.

It also includes information the customer will need to assist with provisioning of necessary infrastructure & networking pre-requisites.

Infrastructure prerequisites

Communication between servers

This section outlines the communication flow between servers. Note that the arrows (<->) indicate if inbound, outbound or both. The customer will need to ensure that the infrastructure is in place to allow the communication between servers as outlined here.

iSeries -> browser

- When user selects to pay by DataCash c/c, IP1 will 'bounce' to the user's browser, passing a HTML string that will activate the Payment Handler.
- Apart from the Payment Handler URL address, this string includes additional parameters to indicate the IP1 environment, type of transaction (pre-auth vs immediate settlement), amount, currency, merchant reference number, merchant ID, and the IP1 customer or process number. Example: http://PHServerName/ph/DCGateway?en=EBT&t=1&a=1.00&c=GBP&r=1235601&m=99000001&cn=40002026&e=norep@eml.com

Payment Handler Web server <-> DataCash server

- The Payment Handler application will formulate the request into an XML request to activate DataCash Hosted Pages Solution (HPS) for entry of credit card details via a secure web page.
- DataCash will then send a response message back to the Payment Handler application indicating success or failure, but also including token & reference details which can be used for subsequent processing.
- Note that we are using the Card Tokenisation features in DataCash to allow multiple pre-authorisations & settlements to occur for a single order.

Payment Handler Web server -> iSeries

- The Payment Handler application will call a program on the iSeries to login & setup the appropriate environment library list.
- It will then call another Payment Manager program in IP1 to send back the response data from DataCash.

iSeries <-> DataCash server

- In cases where further transactions are required against this credit card (e.g. Pre-authorisations, Settlements, Refunds on a customer order), the iSeries will directly call a DataCash API to process this transaction utilising previously stored token & reference data.

Web Payment Handler Prerequisites

General prerequisites

Following are guidelines on the requirements for the windows server for Web Payment Handler.
Please refer to the appendix for FAQ's on WPH prerequisites.

Windows server

1. Operating system should be Windows Server 2008 R2 or later

2. We recommend 4G RAM minimum as OS needs some.
3. This server may be a Virtual Machine. It does not have to be dedicated physical server.
4. Space on the server required by Web Payment Handler (WPH) will be less than 10MB.
5. Iptor needs a temporary admin account to configure and install the web app.
6. Notepad or Wordpad required for editing configuration files.
7. TLS or SSL Certificate maybe required for DataCash.
8. This server must have access to the IP1 iSeries environment(s) being used for c/c processing.
9. The server firewall must allow outbound and inbound access to DataCash Payment Gateway. (You may need to check with the DataCash Payment Gateway support team for specific IP addresses).

Firewall

DataCash

The Payment Handler Web server will need both inbound & outbound access to the DataCash servers. Following is a list of the DataCash server IP addresses and URLs which must be allowed. This is current as of April 2017.

Server	Environment	Datacentre (Reading)	Datacentre (Docklands)	URL
Mars	Production	92.43.40.20	92.43.42.20	https://mars.transaction.datacash.com/Transaction
Venus	Production	92.43.40.18	92.43.42.18	https://venus.transaction.datacash.com/Transaction
Testserver	Staging	92.43.40.64	92.43.42.64	https://testserver.datacash.com/Transaction

iSeries

The Payment Handler Web server will need outbound access to the iSeries. This is typically done via port 8475.

Install SSL / TLS

DataCash security requirements currently (at time of writing this SOP document) indicate that they require SSL Certificate to be installed to allow safe communication between client and DataCash servers.
Refer to below links for DataCash SSL Certificates. These include both the download and instructions, as well as information on DataCash' replacement schedule.

Payment Gateway SSL Certificate Replacement Schedule (DPG / DataCash):
https://datacash.custhelp.com/app/answers/detail/a_id/1204/kw/SSL/session/L3RpbWUvMTQ5MjUwNzQ4Mi9zaWQvOWREbnNvZ24%3D

Downloading the current DataCash Certificates:
https://datacash.custhelp.com/app/answers/detail/a_id/1278

However, if you have TLS 1.1 and 1.2 protocols activated, then this makes the SSL Certificate requirement redundant.

- Using TLS there is no need to install an SSL security certificate.
- In the initial Handshake the TLS call asks the DataCash server for authentication. The DataCash server sends back a verified certificate (which the user has to accept) and the verified Certificate is stored on the server.
- If the set-up is migrated to a new server then the initial call with again get the certificate.
- So, with this method there is no need for the stand alone install of SSL certificate.

- TLS1.1 and TLS 1.2 are enabled by default on Win server 2012 and above, so this requirement should be met unless client's IT support team have specifically disabled these securities.

Note: DataCash security requirements could change over time, so it is the client's responsibility to check DataCash support site to ensure they comply with the latest requirements

iSeries

Firewall

DataCash

As with the Payment Handler Web Server, the iSeries also needs both inbound & outbound access to the DataCash servers.

WPH Server

The iSeries needs to allow inbound access from the Payment Handler Web server. This is typically done via ports 8472 and 8475.

Install SSL / TLS

As with the Payment Handler Web Server, the iSeries also needs security layer to communicate with the DataCash servers.

iSeries Userid

The Payment Handler application needs a dedicated iSeries user profile to be created to support communication of DataCash response data back to the iSeries. This is covered in the iSeries Configuration section of this document.

Java Agent

Each user who enters credit cards in IP1 will need to have the Java Agent installed and running to facilitate the 'bounce' from iSeries to the browser to bring up the DataCash HPS page.

Setup & Configuration

Business rules for DataCash Payment Gateway must be setup with support from Iptor consultants.

Note: The following configurational setups & business rules has to be setup for DataCash Hosted Page Solutions. This document does not cover customised setup tasks of specific companies. Deviations from this setup should be covered by setup tasks written by individual companies.

Hosted Page Solutions (HPS)

Card Token replaces sensitive card information in HPS. HPS will create Card Token on initial authorization and sale. Once the Payment Token has been created, any consequent transactions for the same order will use the existing token in IP1 to post those transactions to DataCash. The Card Token will be stored in IP1 server.

To understand how HPS interact with third party landing page or web service, check:
http://www.mastercard.com/gateway/implementation_guides/Hosted-Pages-Solution.html

Create Merchant Account

A merchant account must be created by DataCash, via their sales team.
To create a merchant account, go to http://www.mastercard.com/gateway/contact/index.html
Find the phone number under Sales Team and contact them to create a merchant account for your company.
Typically, each customer will require at least one test and one production merchant account (vtID), but in some cases, the customer may have multiple accounts.

Web Page Design and Upload

DataCash allow clients to design their own payment detail entry page.
Iptor have some special requirements to allow send & return environments, merchant id and cardholder information.
Iptor can provide a basic template which could be modified by the customer or Iptor to meet the customer's needs, provided these special requirements are still met. This might be as simple as including the customer's logo or altering the screen layout design.

Refer Appendix - Sample Data Entry Web Page for an example entry screen which Iptor could provide.

Once the entry page has been developed, then either the client or IP1 consultants can request DataCash support team to upload the web page onto DataCash server and activate it for the selected merchant account(s). DataCash will also allocate a specific page number for each merchant vtid which then needs to be configured in dc.properties file (refer setup instructions later). There are also other settings in dc.properties to identify the field number of each field which must correspond with the HPS setup.

For any questions, please contact Iptor IP1 team or DataCash support team.

In addition, the Iptor web payment handler itself has a receipt & response page which will display before & after bouncing to the DataCash page. These receipt & response pages can be amended to show/hide relevant field information. Refer **Appendix - Customizing Receipt & Response web pages**.

Install the Payment Handler

1. You will need 2 installer files from your Iptor consultant:
   1.1. wlp.zip which contains the generic websphere liberty package.
   1.2. webapp.zip which contains Iptor's payment handler application.
   1.3. These can be placed in a temporary folder for installation purposes, such as c:\temp.

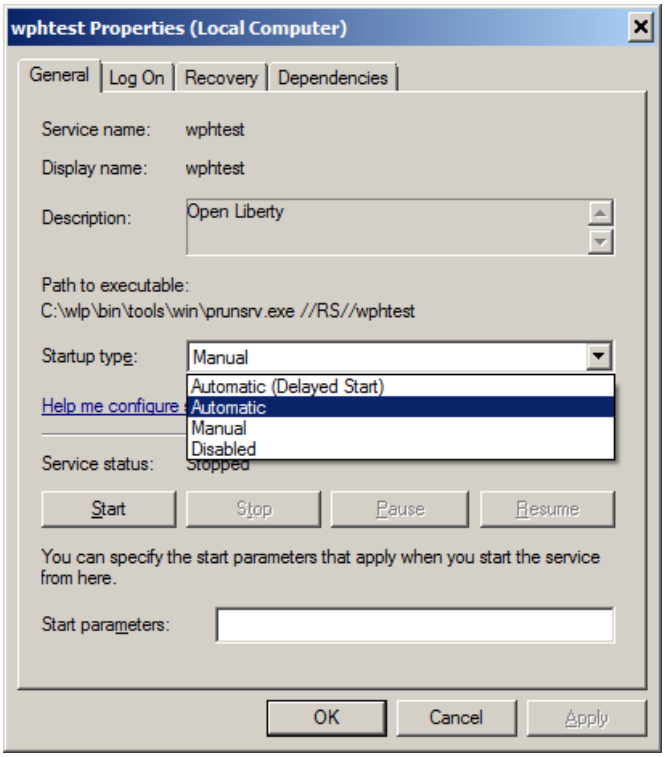
2. Extract all C:\temp\wlp.zip file to C:\ which will result in folder C:\wlp
   2.1. You may prefer to install to a different disk drive than C: and that is ok, though it is best to use default \wlp location (default for websphere). Else you will have to do other config amendments.

3. If installing to drive other than C:
   3.1. Go to \wlp\etc folder on that drive and open server.env file in notepad.
   3.2. Change this command to reflect the correct drive name. JAVA_HOME=C:/wlp/java

4. Create server(s):
   4.1. **IMPORTANT NOTES**:
      4.1.1. Note: The 'server_name' here will become the name of the service that runs
      4.1.2. If separate web payment handler service instances are going to be run on a single wintel server, then you must assign each one a unique server_name (*wphtest* and *wphlive* for example)
      4.1.3. If completely separate wintel servers are used for live vs QA vs Test, then it is probably simplest to use a common server_name for the web payment handler service (*wph* for example)

   4.2. Open command prompt as administrator and change directory to C:\wlp\bin
      4.2.1. Create server - **server create *server_name*** (where server_name is *wph* or *wphtest* for example as per notes above)
      4.2.2. Create Windows service - **server registerWinService *server_name***

   4.3. Using Windows Services configuration tool, set desired running mode to Automatic:
      4.3.1. **Note**: Don't actually start this service till after we've completed installation of Iptor wph app in steps below.
      4.3.2. You may change the Log On from Local System to another account if desired. This can be a domain or local account but must have the necessary privileges to read & write files within the /wlp/ folders.



4.4. If running separate instances for test vs live, then repeat steps 4.2 and 4.3 for the additional server_name (*wphlive* for example).

5. Install & configure web application.
   5.1. Copy files *server.xml* and *cybs.wsdd* from WebApp.zip into newly created C:\wlp\usr\servers*server_name*\ folder(s), overriding existing files if necessary

   5.2. Copy folder jph.war from WebApp.zip to C:\wlp\usr\servers*server_name*\dropins\ folder(s).

   5.3. CONTEXT ID – You can skip over this section if you are running a single wph instance with default jph context on this wintel server.
      5.3.1. The default installation will use jph.war folder with jph context id settings. This can be left as is if running just one *server_name* instance on this wintel server.
      5.3.2. However, if you are running multiple versions of application on one server (eg. wphtest & wphlive), then for the second instance, you must copy folder jph.war to a different name (like jpn.war) in the folder *dropins*, then update file web.xml, section `<display-name>` and file ibm-web-ext.xml, section `<context-root ...>` in the folder C:\wlp\usr\servers*server_name*\dropins\jpn.war\WEB-INF

      This will allow to run multiple applications in one server and use different URLs. Eg.

Server_name	**Context**
Wph	jph
Wphlive	jph
Wphtest	jpn

      The context id's used here must correlate with ********/PM-FLD URLL entry. For example, we would use following URLL entries for wphlive and wphtest based on example table above.

      http:// youwebservercomputername/jph/DCGateway
      http:// youwebservercomputername/jpn/DCGateway

5.4. Review DataCash system properties file (dc.properties). This file is located in each of the C:\wlp\usr\servers*server_name*\dropins\jph.war\WEB-INF\classes folder(s).

5.4.1. Following is example of “dc.properties” file contents. Open it with Notepad, you may see similar as below:

```
# values - test or live
env=test
# DCver = 0 default (no version)
env.test.DCver=2
# allow to override default (jdbc/jph) for the given env.
env.test.jndi.TS1=jdbc/TS1
env.test.jndi.TS2=jdbc/TS2
env.test.jndi.TS3=jdbc/TS3
env.test.DCurl=https://testserver.datacash.com/Transaction
# APAC
env.test.DCpwd.99007724=???????
env.test.DCpgs.99007724=3503
# DCCapf* = 0 no value
env.test.DCCapfNam.99007724=9
env.test.DCCapfCns.99007724=1
env.test.DCCapfEnv.99007724=0
env.test.DCCapfMch.99007724=0
# EMEA
env.test.DCpwd.99428400=???????
env.test.DCpgs.99428400=3091
env.test.DCCapfNam.99428400=1
env.test.DCCapfCns.99428400=7
env.test.DCCapfEnv.99428400=8
env.test.DCCapfMch.99428400=9
# Live section
env.live.DCver=2
env.live.jndi.LIV=jdbc/LIV
env.live.jndi.TS1=jdbc/TS1
env.live.jndi.TS2=jdbc/TS2
env.live.jndi.TS3=jdbc/TS3
env.live.DCurl=https://mars.transaction.datacash.com/Transaction
# APAC
env.live.DCpwd.12345678=???????
env.live.DCpgs.12345678=1
env.live.DCCapfNam.12345678=9
env.live.DCCapfCns.12345678=1
env.live.DCCapfEnv.12345678=0
env.live.DCCapfMch.12345678=0
# EMEA
env.live.DCpwd.12341234=???????
env.live.DCpgs.12341234=3091
env.live.DCCapfNam.12341234=1
env.live.DCCapfCns.12341234=7
env.live.DCCapfEnv.12341234=8
env.live.DCCapfMch.12341234=9
```

5.4.2. Modify these merchant configuration lines to match settings for your specific merchant vtId account(s).

<env>	Defines Payment handler test or live mode
<DCver>	DataCash XML document version. (2 – latest, 0 – no version, same as .NET payment handler)

<DCurl>	DataCash processing URL (following is test vs live URL)
	`https://testserver.datacash.com/Transaction`
	`https://mars.transaction.datacash.com/Transaction`

<jndi>	Link to iSeries connection(s) definition in server.xml If this payment handler instance is only ever linked to a single IP1 environment, then you can leave this with the default jdbc/jph setting. If you need to link with multiple environments (eg. TS1, TS2, TS3, etc), then you should create separate entries for each IP1 environment and corresponding <jndiname> entries in the server.xml file. Also note that TMSWWW/ENV-DFT must be set with correct IP1 env id corresponding to these.
<.NNNNNNNN>	This refers to the DataCash Merchant ID. DataCash refer to this as the vtID. It should match setting on ********/PM-FLD control table LOGIN field value.
<DCpwd>	This must match the password allocated by DataCash for this vtID
<DCpgs>	This is where you nominate the specific page set number for the credit card entry page to be used with this vtID. Refer to Web Page design and upload section.
<DCCapf????	This is user defined web page element number which links to IP1 field. Fields are: Nam – Payee name, Cns – Cancel URL, Env – Environment code, Mch – Merchant code. If number is zero – no mapping.

5.5. Review server.xml file(s) to connect with iSeries environments. This file is located in each of the C:\wlp\usr\servers*server_name*\ folder(s).

5.5.1. Ports for listening for requests from the iSeries:

5.5.1.1. By default, the *server.xml* contains following code which defines the listening ports that will be used for HTTP or HTTPS. It defaults to 80 and 443 respectively.

```
<httpEndpoint host="*" httpPort="80" httpsPort="443" id="defaultHttpEndpoint">
```

5.5.1.2. The ********/PM-FLD URLL settings in IP1 will typically use http, but you may prefer to use https. Obviously, this will impact which of the 2 port settings above are relevant.

5.5.1.3. Typically you will either use 80 or 9080 for http and 443 or 9443 for https

5.5.1.4. You may need to change the default port setting in *server.xml* if those default ports are already used by another application, or if you have multiple *server_name* instances of payment handler running on same wintel server (eg live vs test).

5.5.1.5. Use windows command prompt and netstat command to check if ports are being used. Eg.

5.5.1.5.1. netstat -aon | findstr 80

5.5.1.5.2. netstat -aon | findstr 443

5.5.1.6. For example, if you already have a live instance using ports 80 / 443, you could set the test instance to use 9080 / 9443 as follows:

```
<httpEndpoint host="*" httpPort="9080" httpsPort="9443" id="defaultHttpEndpoint">
```

5.5.1.7. Note: If migrating from old .Net version of Web Payment Handler on same server, then you will likely need to end the old .net website in IIS, then repeat step 5.5.2.5 to check ports are available.

5.5.1.7.1. Go into IIS
5.5.1.7.2. Click on the website(s) for wph (eg. Phlive, phtest)
5.5.1.7.3. On right hand side, click on the option to stop that service.

5.5.2. iSeries environment connection(s) settings

5.5.2.1. Within the *server.xml*, look for iSeries connection properties (eg. Search for jndiName). For example, you will find something like below.

```
<dataSource beginTranForResultSetScrollingAPIs="true" id="DefaultDataSource"
isolationLevel="TRANSACTION_READ_UNCOMMITTED" jdbcDriverRef="jtDrv"
jndiName="jdbc/jph" type="javax.sql.DataSource">
<properties.db2.i.toolbox dateFormat="iso" naming="system" password="TMS"
serverName="IBSBKDEV" timeFormat="iso" user="TMS"/>
</dataSource>
```

1.1.1.1. The user and password entries must correlate with a valid iSeries userid (refer separate section later on iSeries configuration).

1.1.1.2. If this payment handler instance is only ever linked to a single IP1 environment, then you can leave this with the default jdbc/jph setting (must match jndi setting in dc.properties file).

1.1.1.3. If you need to link with multiple environments (eg. TS1, TS2, TS3, etc), then you must create separate dataSource entries for each IP1 environment, where each <id> and <jndiname> corresponds with the <jndi> settings in dc.properties file. For example, replace jph default with following for TS1 env:

```
<dataSource beginTranForResultSetScrollingAPIs="true" id="TS1"
isolationLevel="TRANSACTION_READ_UNCOMMITTED" jdbcDriverRef="jtDrv"
jndiName="jdbc/TS1" type="javax.sql.DataSource">
<properties.db2.i.toolbox dateFormat="iso" naming="system" password="TMS"
serverName="IBSBKDEV" timeFormat="iso" user="TMS"/>
</dataSource>
```

1.1.1.4. If the iSeries user has default jobd/library list that includes the relevant object library containing XAS010 and XAS000* service programs, plus the relevant data library for this IP1 environment, then no additional configuration

1.1.1.5. If the iSeries user is not setup with library list including the appropriate IP1 environment data library and object library(s), then you will either need to revise that user to setup jobd with appropriate libl, or you can include additional libraries statement in the dataSource as per example below:

```
<dataSource beginTranForResultSetScrollingAPIs="true" id="TS1"
isolationLevel="TRANSACTION_READ_UNCOMMITTED" jdbcDriverRef="jtDrv"
jndiName="jdbc/TS1" type="javax.sql.DataSource">
<properties.db2.i.toolbox dateFormat="iso" naming="system" password="TMS"
serverName="IBSBKDEV" timeFormat="iso" user="TMS"
libraries="TMSBASE,TMSDTATS1,TMSOBJZX1"/>
</dataSource>
```

1.1.1.5.1. Note that the libl must include:
1.1.1.5.1.1. TMSBASE library containing SETUP command
1.1.1.5.1.2. Data library for this IP1 environment
1.1.1.5.1.3. Object library(s) containing XAS010 and XAS000* objects.

6. If you wish to customize the web payment handler receipt & response pages, refer Appendix - Customizing Receipt & Response web pages

7. For each server_name, you can now go and start the service. Follow instructions in section 'Restarting the Server'.

8. Configuration network connection

8.1. Ports listed in files server.xml should be opened and https connectivity configured to the relevant payment system.
8.2. SQL ports should be opened to iSeries (default ports are – 449,8470,8471,8475,8476).
8.3. See section ‘iSeries configuration’ for the user profile and SQL stored procedure requirements.

Restart the server

Instructions to restart services:

- There two ways to do it as outlined below.
- For either method, replace *server_name* as appropriate (eg. wph, wphtest, wphlive)

Method 1/

- Stop relevant Windows service with this *server_name*
- Check the log file (C:\wlp\usr\servers*server_name*\logs\messages.log) to make sure server has stopped and then start Windows service again.
- Unfortunately, Windows services option ‘restart’ can hang Java process quite badly, therefore it is necessary to do separate stop and start.

Method 2/

- Open command prompt as Windows administrator.
- CD c:\wlp\bin (or relevant folder where Open Liberty bin folder is).
- Use the following command to stop the server: **server stopWinService server_name**
- Check the log file (C:\wlp\usr\servers*server_name*\logs\messages.log) to make sure server has stopped and then start Windows service again.
- Use the following command to start the server: **server startWinService server_name**

iSeries configuration

User profile

The Payment Handler application needs a dedicated iSeries user profile to be created to support communication of DataCash response data back to the iSeries. The profile would only be used by the Payment Handler web server to log on, connect to correct environment and call programs. It should ideally be only used for this machine login, and not for human login.

Key requirements for this login are:

1. Password is *NONE . . . . . : *NO
2. Password expiration interval . . . . . : *NOMAX
3. User class . . . . . : *PGMR
4. Special authority . . . . . : *IOSYSCFG
   *SPLCTL
   a. Ok, but not necessary for other authorities to be given also (e.g. *ALLOBJ)
5. Group profile . . . . . : QPGMR
6. Owner . . . . . : *GRPPRF
7. Current library . . . . . : TMSBASE or IBSBASE
   a. Depending on IP1 implementation
   b. This library includes the SETUP command which is used to library list for the IP1 environment. If customer has their SETUP command included in an alternative library, then that library name must be used.
8. Job Description / Library List
   a. Ideally, this user profile should include full library list for the relevant IP1 environment.
   b. In cases where the web payment handler wintel server may need to talk to multiple IP1 environments, consider creating separate iSeries user ids for each environment with correct library list. This can be achieved by linking to an appropriate JOBD for that env.
   c. Alternatively, the server.xml configuration on wintel server can include libraries statement to identify the object & data libraries.
   d. Critical requirement is:
      - The base object library containing XAX000N e.g. TMSOBJZX1
      - The object library containing XAS010 if that is elsewhere.
      - The data library containing XACTD00P e.g. TMSDTATS1

XAX000 Stored Procedure

On the iSeries, create stored procedure using the following SQL statement:
This should be created in the primary data library for each environment used by web payment handler.
For customers already using IP1 web services, this should already be there!

```
CREATE PROCEDURE TMSDTAxxx/XAX000 (IN ENV CHAR(3),
IN JBUS CHAR(10),
IN JBID CHAR(10),
IN PGMN CHAR(10),
OUT STS CHAR(1),
IN XIN blob(2M),
OUT XOUT Blob(16M),
OUT XMSG Blob(64K))
LANGUAGE RPGLE
PARAMETER STYLE GENERAL
NOT DETERMINISTIC
DYNAMIC RESULT SETS 0
EXTERNAL NAME TMSOBJZX1/XAX000N
```

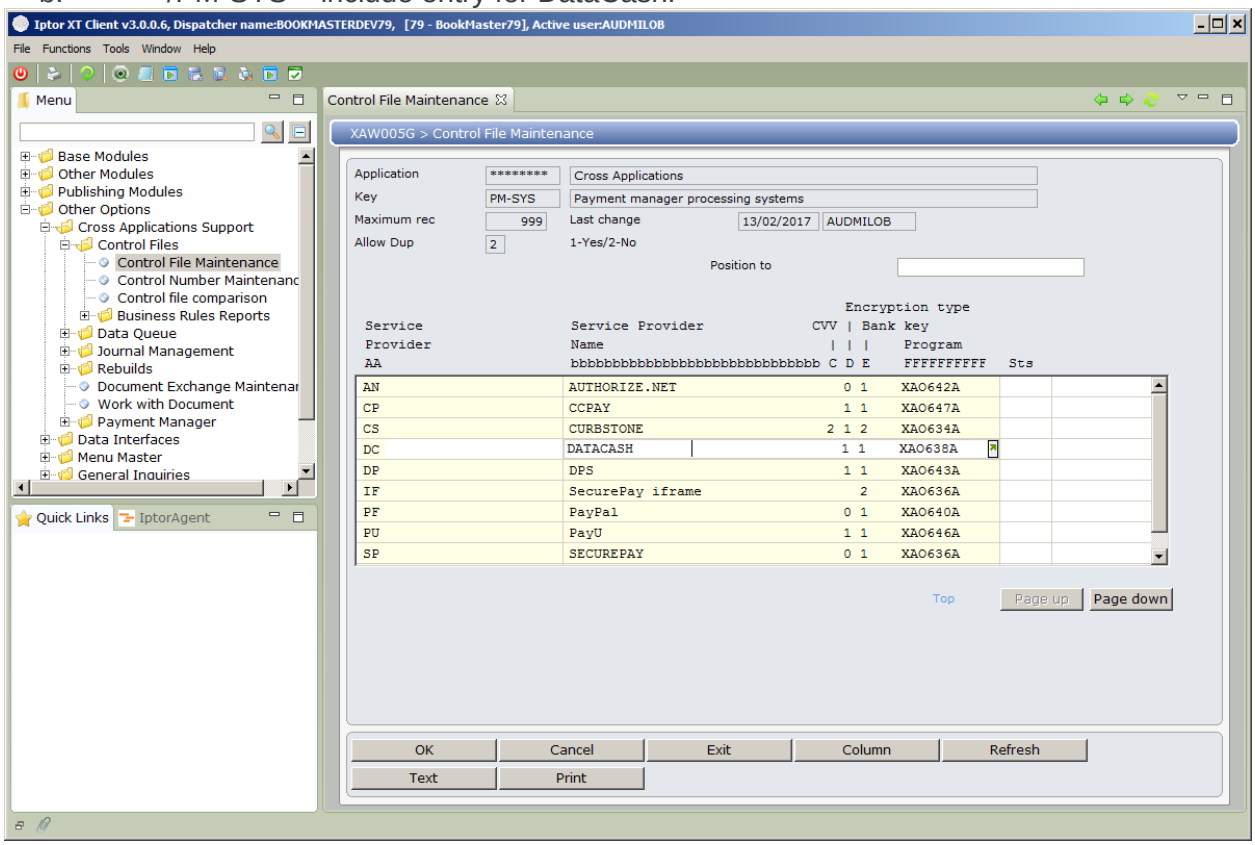
Names of the libraries (in red) should correspond to ones in your environment.
Make sure that stored procedure is unique.

IP1 Configuration

Change the web address of IP1 web invoke and web service call to the associated web location that is deployed.
If you installed SSL, make sure you use https from IP1.

1. Install Java Agent. For opening landing page URL XAO638 uses Java Agent.
2. Deploy RPG programs XAO668, XAO255AU and file XAPCD00P if not already deployed.
    a. Already there for MHE (using with .Net version already)

3. In IP1 create/update control file entries for the following control files:
    a. TMSWWW/ENV-DFT
        i. For each IP1 environment, this control file must contain the matching environment id.
        ii. This is used by the web payment handler to identify which jndi settings to use in dc.properties file.
        iii. This is particularly critical where single instance of web payment handler can talk to multiple IP1 environments!
    b. *******/PM-SYS – include entry for DataCash:



c. ******/PM-FLD – setup DataCash entries**

Critical field settings:

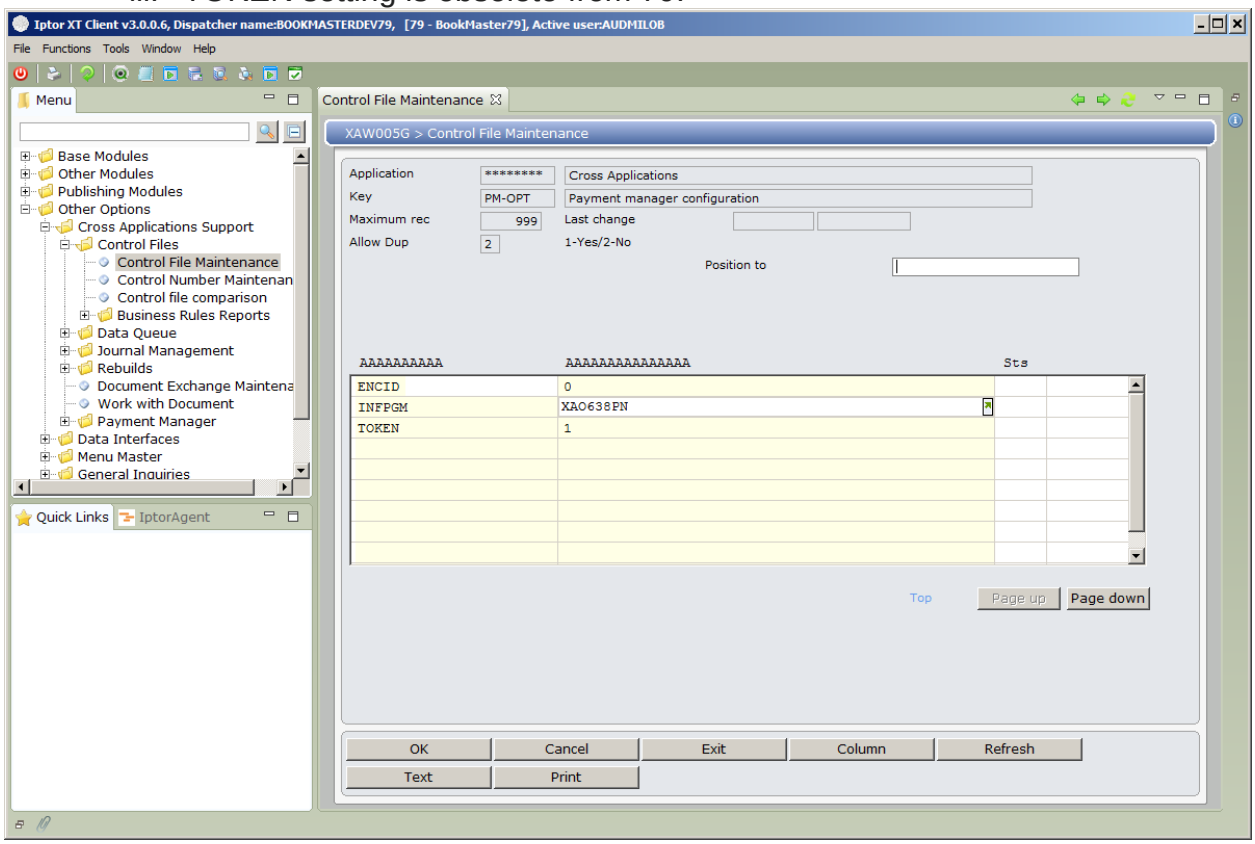
- LOGIN – This is your DataCash account number (vtID)
- PASSWORD – DataCash password for this vtID
- URL – The DataCash processing URL for test vs live processing.
  https://mars.transaction.datacash.com/Transaction
  https://testserver.datacash.com/Transaction

- URLL – The URL to access the Web Payment Handler. Typically, as follows, unless client has set up different context id's for each IP1 environment (refer Install the Payment Handler section of this document).
  http:// youwebservercomputername/jph/DCGateway

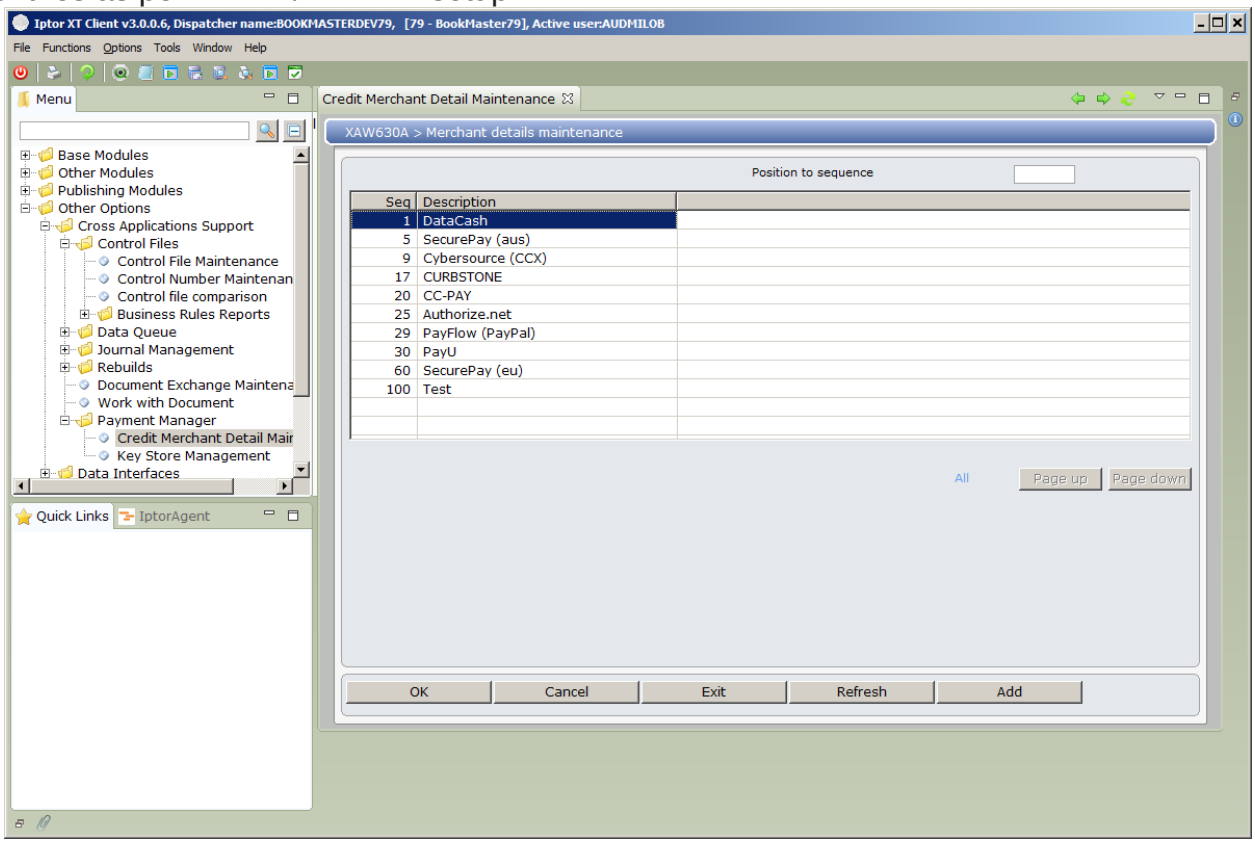
- PN = 1 (pass Process Number rather than Customer Number for additional Custom Data in Datacash reporting portal on secondary transactions)

```
Service Provider
|  Merchant Id
|  |         Field    Value
AA BBBBBBBB cccccccc DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
DC TEST     DEBUG    1
DC TEST     EMAIL    norep@eml.com
DC TEST     LOGIN    99428402
DC TEST     PAD1     Address1
DC TEST     PAD2     Address2
DC TEST     PAD3     City
DC TEST     PAD4     State
DC TEST     PAD5     Post_Code
DC TEST     PAD6     Country
DC TEST     PASSWORD sfweds
DC TEST     PN       1
DC TEST     URL      https://testserver.datacash.com/Transaction
DC TEST     URLL     http:// youwebservercomputername/jph/DCGateway
```

d. ********/PM-OPT:
   i. set INFPGM to XAO638PN to pass cardholder (payer) name on card to IP1
   ii. set ENCID to 0
   iii. TOKEN setting is obsolete from 79.



4. Configure Merchant Detail Maintenance (XAW630A) to use relevant DataCash account entries as per ********/PM-FLD setup:



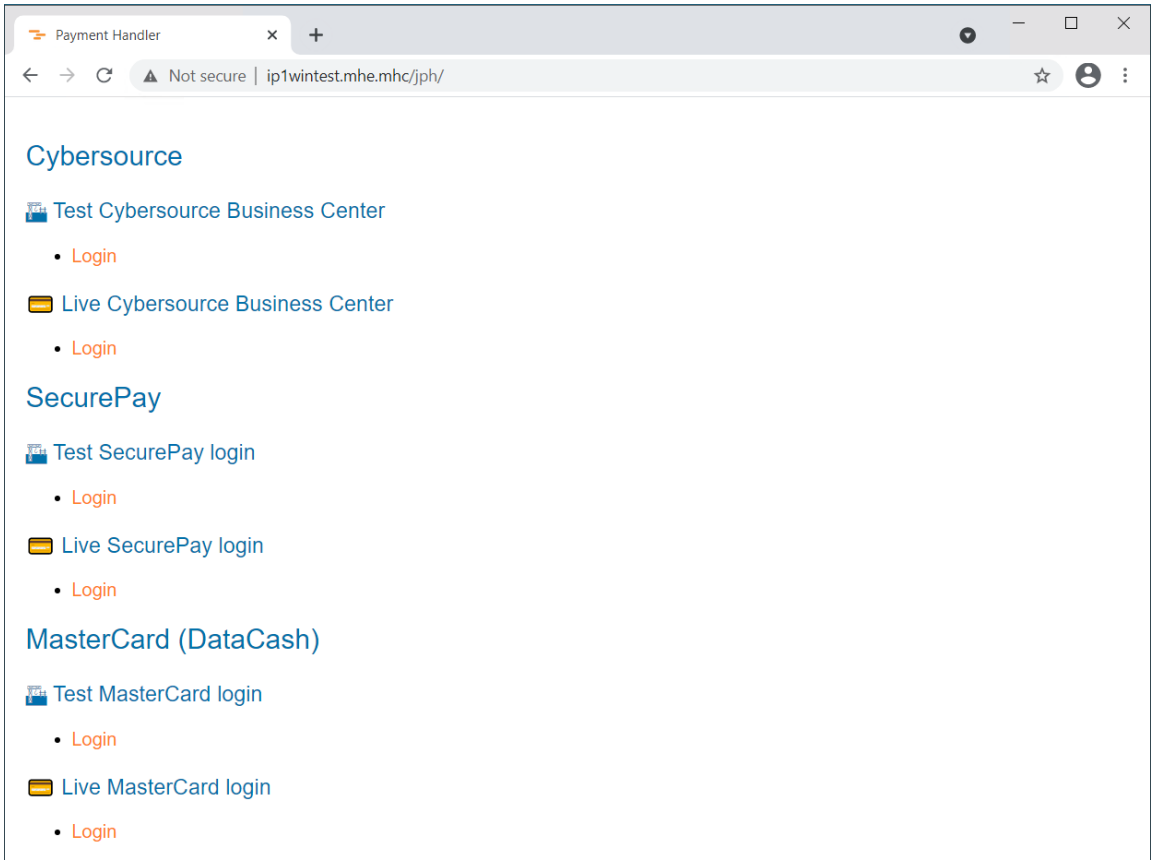
5. Increase 'XA-TRNID Credit card transaction ID' control number to higher round number (for example - '00100000').

Testing

Check WEB Payment Handler Install

1. Test ability to connect to Open Liberty
    a. After starting the service, on browser (from own PC if you are in same network or VPN as the payment handler wintel server), type URL to check if it gets a response.
        http://dnsservername:port/ or http://ip:port/
        i. Port number can be left off if using default http port 80
    b. This verifies that user can connect over the network/VPN to Open Liberty using the designated port.
    c. On successful connection you should see below:

2. Test ability to connect to the wph application
    a. Following above test, could include the /jph portion of URLL to also check that the wph application itself is running ok.
        http://dnsservername:port/jph/ or http://ip:port/jph
    b. On successful connection you should see screenshot below:
        i. Note that this is a static page in the wph application. Presence of this page simply proves the wph application is running ok.



3. HTTPS testing
    a. If you wish to use https instead of http for the connection from user's browser to the wph, then they will first need to install & setup certificate in Open Liberty.
    b. Refer following link for information on how to set this up. https://www.ibm.com/support/knowledgecenter/en/SSEQTP_liberty/com.ibm.websphere.wlp.doc/ae/twlp_sec_comm.html
    c. Then repeat test 1 & 2 above with https instead of http prefix.

Check iSeries link to/from wph

1. Setup Java Agent to link to relevant iSeries.
    a. If Java agent doesn't connect:
        i. On iSeries, type command NETSTAT *CNN
        ii. Look for an entry that shows port 4454 listening.
        iii. If not found, CALL XAO255C to start agent listener on iSeries (sign off & on before doing this command to clear libl. i.e. Don't want IP1 environment specific libl).
        iv. Then recheck NETSTAT *CNN to confirm port 4454 is now showing ok
        v. Retry starting the agent on PC.
2. On the iSeries
    a. Update ********/PM-FLD control file to new URL pathnames
    b. Do initial verification testing using XAO630T
        i. Notes:
            1. Can do this test with dc.properties unaltered from iptor_tst defaults (i.e. Using Iptor test merchant and keys). Should be able to get a valid acceptance response on card 4111111111111111
            2. This test verifies:
                a. All being well, should bring up the DataCash landing page, accept test card info, and pass valid response back to the iSeries.

b. If not, could imply one of following isn't correct.
c. ********/FLD URL* settings
d. Java agent setup on individual's PC or on iSeries
e. WPH software installation & config
f. Ports/firewall connections between WPH server & DataCash, and between WPH and iSeries.

3. You may need to create a dummy first sequence entry in Merchant Maintenance with catch all wildcard asterisks in criteria fields to force use of particular test merchant account since XAO630T doesn't know the company, payment type, etc.
4. XAO630T currently uses hard coded AUD currency, so this may cause failures with some overseas merchant ids.

ii. CALL XAO630T
iii. Key request TC or CC using default card and reference information.
iv. E.g. Card 4111111111111111, CVV 123, Expiry date after today's date. Amount=$10.08, Our Ref=date/timestamp value
v. Press Enter
vi. Should bring up landing page for your DataCash payment gateway.
vii. Key card information again.
viii. Check appropriate response comes back to the iSeries program.

End to end testing with IP1

1. Ensure appropriate AR Payment types and other configuration preferences are setup.
2. Ensure Merchant Maintenance links to appropriate test or live merchant setups in ********/PM-FLD
3. AR Entry test
    a. Key payment using appropriate AR Payment Type(s) for c/c link with relevant payment manager.
    b. After finalising allocation of amount, should bounce to relevant payment manager host page for entry of card details to pay matching amount requested on the IP1 screen.
    c. Response should be returned to ARE005 screen.
4. Order Entry tests
    a. Key order with prompt payment terms and select payment with appropriate AR Payment Type(s) for c/c link with relevant payment manager.
    b. Should bounce to relevant payment manager host page for entry of card details. Amount and method (preauthorization vs immediate payment) will depend on configurations.

Troubleshooting

1. If URL brings up an IIS screen, this indicates that the designated port is already allocated to an IIS website.
    a. You may need to change configurations to use a different port, or stop the website in IIS.

2. If URL brings up **error 404 – File or directory not found** error on browser.
    a. Check all installation steps have been completed on both windows and iSeries.
    b. Check that the relevant windows service is running.
    c. You may need to include specific port# in the ********/PM URL* field settings, rather than relying on default.
    d. If still issues, check log files in C:\wlp\usr\servers*server_name*\logs
        i. Messages log file has I, A and E entries. Look for E (error) messages.
        ii. For example, following error line indicates that the port configured in server.xml file could not be allocated.
        [1/5/21, 18:45:44:454 EST] 00000026 com.ibm.ws.tcpchannel.internal.TCPPort
        E CWWKO0221E: TCP Channel defaultHttpEndpoint initialization did not succeed. The socket bind did not succeed for host * and port 80. The port might already be in use. Exception Message: Address already in use: bind
    e. For port usage clash,
        i. Refer to the following for instructions to check which application(s) are using a port https://www.printsupportcenter.com/hc/en-us/articles/115003386949-Determine-which-program-uses-or-blocks-a-port
        ii. If clash exists, you may need to end the other applications using this port, or change server.xml and PM-FLD URL* to use a different port.

3. Unsuccessful response from payment gateway
    a. It is quite possible that the Receipt screen may show 'valid' errors in the normal course of entry (e.g. Expired card, invalid CVV, etc.). However, there may be other cases where problem exists in programming or setup.

4. Top left corner of response page shows ""&#x1F3D7 Receipt". What does this mean?
    a. This is Unicode character "Building Construction" (https://www.compart.com/en/unicode/U+1F3D7) showing we are in test mode
    b. It should show up as following image🏗 , however Internet Explorer can't show it.
    c. Other browsers display it ok, so try changing your default browser, or just ignore this.

5. Other checks – IP1 log files
    a. You may need to check & verify URL being called and the response received.
    b. Check XAPCA, XAPCB, XAPC files for payment handler.
    c. Check DataCash, log file - XAPCD00P.

DataCash HPS – Go Live

Once you are satisfied with the test, you can contact DataCash to arrange go live service and get access and authorization to go live. Before going live ensure the configuration is updated for live transactions as outlined under Install the Payment Handler and IP1 Configuration.

Appendix

FAQ – Web Payment Handler (WPH) prerequisites

a) Do we need separate installation & configuration for each Merchant Id (e.g. DataCash APAC live, DataCash APAC test, DataCash EMEA merchant for Live, DataCash EMEA merchant for test)?
Currently Iptor have only one deployment file which can be used for all supported Payment Gateway merchants. However, each merchant will require its own customised configuration file specifying client preferences and merchant id information.

b) Even though there is one deployment file, do we need to do multiple installs to handle the different merchant Ids, or can we handle multiple configurations/merchants within single installation?
This is up to client to decide. A single WPH server can handle multiple URLs, so it is possible to do one installation of the software but set up separate URLs for each Merchant account. Each URL would be linked to a separate copy of the WPH configuration file which is specific to that merchant account. This also means we can allow multiple iSeries environments with one deployment of the WPH software, as the configuration file for each URL will point back to the appropriate iSeries environment.

Generally, Iptor suggest that it is simpler to have a single WPH server and web payment handler software install, with different URLs & configuration files for test vs live or other separate merchant accounts.

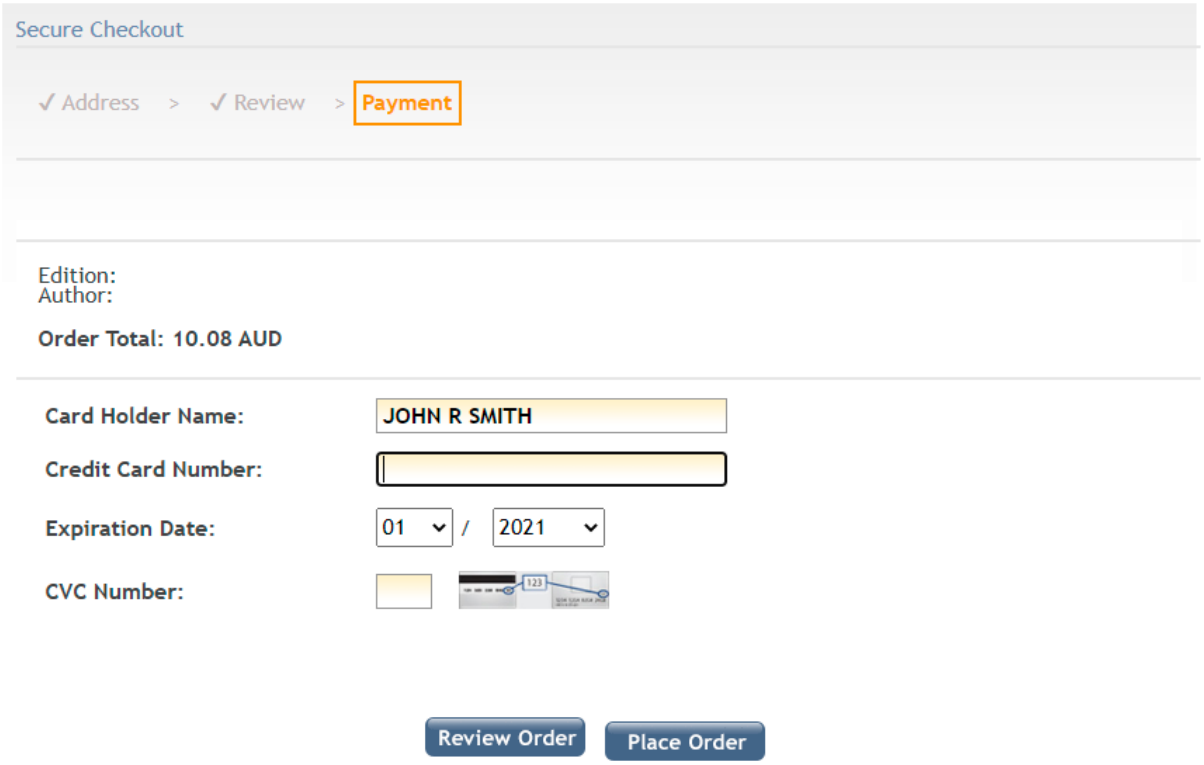
However, clients may prefer to install multiple copies of the application onto one server, or onto multiple servers.

c) Are there any requirements for number of ports?
No specific requirements, default HTTP is still using port 80, and SSL port uses 443. Ports can be customised by client's own IT department, and SSL can be added and specified by the clients also.

d) Would there be any problems if installed within same VM as other applications (e.g. Book Production file server), or do we suggest better to keep this WPH in separate VM?
Our landing page can be with any other applications, as it only consumes very little resource, and it has very high security features.

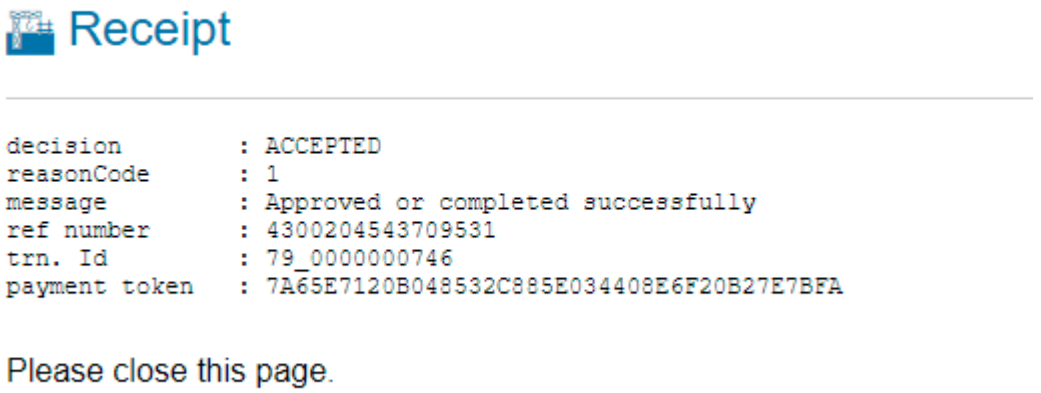
Sample Data Entry Web Page

Sample Data Entry web page used for Credit Card entering.



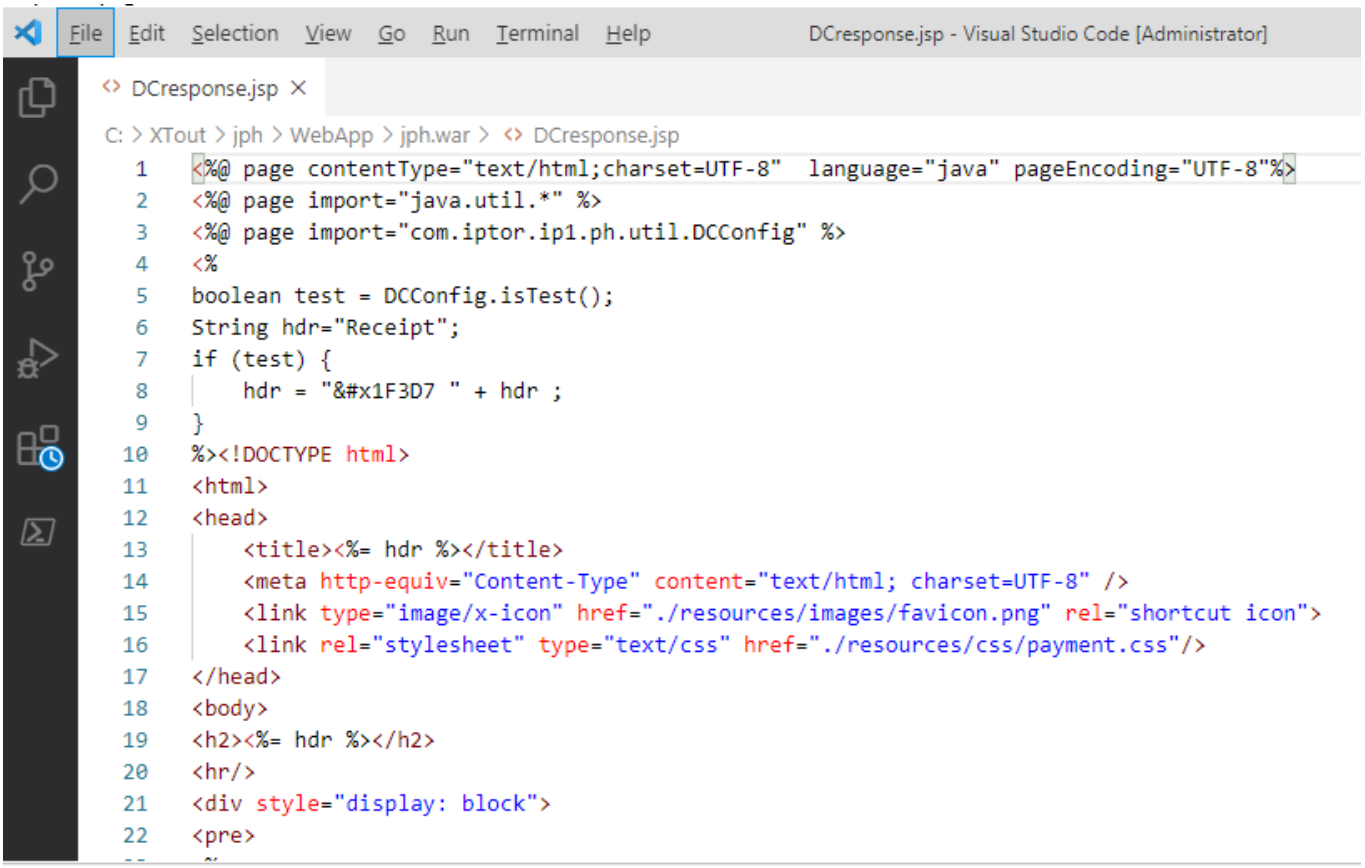
Customizing Response (Receipt) web page

1. Receipt / Response page -DCresponse.jsp
   1.1. This page will show response data from the payment gateway.
   1.2. If user is not interested in some of this information, they can simply close the browser tab.
   1.3. Unfortunately, we cannot completely prevent this screen showing or force auto close by the browser, however, you can edit the contents shown by editing the JSP.
   1.4. Following is an example of response from DataCash for a successful payment:



   1.5. Customizing to hide selected fields.
      1.5.1. Edit the DCresponse.JSP file with preferred editor.
      1.5.2. For example, you may wish to hide the payment token field.
      1.5.3. You can comment (use /* */) or just delete the lines altogether from the DCresponse.jsp

```
if (token != null)
    out.println("payment token   : " + token);
```



For unsuccessful response refer to the Troubleshooting section.

Other Tips

Installation summary if migrating from old .Net to new Java version of wph

1. Wintel setup
    a. As per Install the Payment Handler section in this document
2. iSeries
    a. You may already have a common user profile that you were using with the .Net version which can be used again here.
    b. Review if you need to amend user profile jobd/libl, or alternatively set the libraries keyword in the se in the server.xml
3. IP1 config
    a. New XAX000 stored procedure must be created in each IP1 environment.
    b. TMSWWW / ENV-DFT – must be set to matching IP1 environment code for each IP1 environment.
    c. ******** / PM-FLD
        i. Change all URLL entries for Datacash service provider
            1. Use /jph instead of /phlive or /phtest
            2. Other suffixes may be required if you used multiple Context Ids during the Payment Handler Install and configuration.
        ii. Eg.
        From
        http://dnsservername /ph/DCGateway
        to
        http://dnsservername /jph/DCGateway

UAT test plan suggestions

1. There are NO changes in secondary transaction processing with the migration from .Net to Java WPH. This is all handled directly between IP1 and Datacash servers, and there are no program changes on IP1 side at all.
2. Therefore, key requirement is simply to test the initial capture of card details via the Datacash Landing Page.
3. I.E. Only reason to check secondary transaction would be to ensure Java version has captured back correct token data into IP1 for secondary processing.

IP1 Test environment refresh from live (and using live vs test merchant/cards)

1. TMSWWW / ENV-DFT must be reset to relevant environment id
2. ******** / PM-FLD
    a. Suggest that it is best practice to include both LIVE and TEST merchant entries here, so that you can simply use Merchant Details Maintenance to point to relevant one for this environment.
3. To point IP1 environment to TEST instead of LIVE wintel & merchants…
    a. Go into menu opt 50,60. Credit Merchant Detail Maintenance
    b. Review each of the sequence entries for Datacash provider and swap the merchant id from LIVE to TEST.
    c. If you have multiple merchants, you may have something like xxTEST or xxLIVE merchants setup in ******** / PM-FLD
    d. Restart IP1 background processing jobs to ensure changes picked up
4. Of course, if you want to point test environment to live merchant/card, then simply revert the setups in step 3

Creation of new IP1 environment

1. If you create a new IP1 environment that you want to handle Datacash card payments, then you will need to:
2. Wintel server
    a. Add new IP1 environment entries into the dc.properties and server.xml files
    b. If this is a test IP1 environment, then suggest that you do this on both dev and prod wintel servers, so that you can point the IP1 environment to both test and live merchants.
    c. Restart wph services
3. IP1 config
    a. Ensure stored procedure XAX000 is created in this environment
    b. As noted on IP1 Test environment refresh from MAP

Object library change (eg. Upgrade to IP1)

1. If new versions of XAX000 or XAS010 service programs are created, then you will need to do following:
2. iSeries userid
    a. Check if jobd/libl needs updating
3. Wintel servers
    a. If server.xml <datasource> tags are currently using libraries="TMSBASE,TMSDTAxxx,TMSOBJZ78"
    b. You will need to change each <datasource> tag to the new object library (eg. TMSOBJZ78 may change to TMSOBJZXI).
    c. Restart the wph services
4. IP1
    a. Delete and recreate the XAX000 stored procedure, pointing the EXTERNAL NAME setting to appropriate library containing XAX000N object

```
EXTERNAL NAME TMSOBJZXI/XAX000N
```

Linking HPS landing page with merchant (pageset)

1. Iptor can assist with providing sample html pages
2. Send relevant html to Datacash support, asking them to link that with the particular merchant id (vtID)
3. They will provide a pageset number that they have allocated this html layout against for that merchant id (vtID)
4. Edit Dc.properties file(s) in test and/or live wintel servers to set env.live.DCpgs.setting. eg. Following sets the page set to 3933 for test merchant id 99007724
    a. env.test.DCpgs.99007724=3933
5. Note:
    a. Be careful if modifying the html layout that you don't change the field number settings, as these are important to how our WPH s/w passes appropriate information to Datacash. Our default html page uses field number settings:

        DCCapfNam =1
        DCCapfCns =7
        DCCapfEnv =8
        DCCapfMch =9

New Merchant ID

1. Ensure appropriate HPS landing page has been loaded with Datacash for the merchant id (vtID) and pageset number allocated
2. You will also need to know the password from Datacash for this vtID

3. Wintel servers
    a. Dc.properties
        i. If merchant id is not already in the file, then copy and modify from one of the existing merchants
        ii. Change the .nnnnnnnn portion to new merchant id
        iii. Set DCpwd to the new password for this vtID
        iv. Set DCpgs to the page set number that has been allocated to this vtID
        v. Double check each of the DCCap* settings (see notes in prev section about field numbers)