India Unified Payment Interface (UPI) User Guide **Oracle Banking Payments**

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TARGET Instant Payment Settlement User Guide Oracle Financial Services Software Limited

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1. About this Manual

1.1 Introduction

This manual is designed to help you to quickly get familiar with the India Unified Payments Interface (UPI) functionality of Oracle Banking Payments. It takes you through the various stages in processing a UPI payment transaction.

You can further obtain information specific to a particular field by placing the cursor on the relevant field and striking <F1> on the keyboard.

1.2 Audience

This manual is intended for the following User/User Roles:

Role	Function
Payment Department Operators	Payments Transaction Input functions except Authorization.
Back Office Payment Department Operators	Payments related maintenances/Payment Transaction Input functions except Authorization
Payment Department Officers	Payments Maintenance/ Transaction Authorization
Bank's Financial Controller/ Payment Department Manager	Host level processing related setup for Payments and PM Dashboard/Query functions

1.3 <u>Documentation Accessibility</u>

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

1.4 Organization

This manual is organized into the following chapters:

Chapter	Description
Chapter 1	About this Manual gives information on the intended audience. It also lists the various chapters covered in this User Manual.
Chapter 2	<u>Unified Payments Interface</u> provides a snapshot of the local payments or payments limited to a specific region.
Chapter 3	Function ID Glossary has alphabetical listing of Function/Screen ID's used in the module with page references for quick navigation.

1.5 Glossary of Icons

This User Manual may refer to all or some of the following icons:

Icons	Function
×	Exit
+	Add row
-	Delete row
٥	Option List

2. India Unified Payments Interface-UPI

This chapter contains the following sections

- Section 2.1, "Overview of UPI Pay Request"
- Section 2.2, "UPI Maintenances"
- Section 2.3, "UPI Pay Request Remitter Bank Request for Debit Processing"
- Section 2.4, "UPI Pay Request Beneficiary Bank Request for Credit Processing"
- Section 2.5, "UPI Non-Financial API List of accounts linked to Mobile Number"
- Section 2.6, "UPI Payments Message Browser"

2.1 Overview of UPI – Pay Request

2.1.1 **Financial API:**

- OBPM on receiving 'Pay Request to Debit (ReqPay Debit API)' on behalf of Remitter Bank in an xml format over HTTPS, it is able to process the debit request by debiting the Payer Account and send back response xml along with success/failure response codes to NPCI UPI.
- OBPM upon receiving 'Pay Request to Credit (ReqPay Credit API)' on behalf of Beneficiary Bank in an xml format over HTTPS, it is able to process the credit request by crediting the Payee Account and send back response xml along with success/failure response codes to NPCI UPI.
- OBPM generates Debit/Credit Notifications to Payer/Payee upon completion of accounting.

2.1.2 **Non-Financial API:**

OBPM upon receiving 'List Accounts API' request in an xml format on behalf of Remitter bank, it is able to identify account numbers and account branch IFSC Codes that are linked for the given customer mobile number and send back response xml to NPCI UPI.

2.1.3 **UPI System Connectivity:**

NPCI UPI system connectivity. For all request messages received from NPCI UPI, OBPM generates an acknowledgment message

2.2 **UPI Maintenances**

This section lists the key common maintenances that are required for processing of India UPI Payments.

- Source Maintenance (PMDSORCE)
- Account level Daily Limits (PMDACCPF)
- External System Maintenances for Sanctions, External Credit Approval and Accounting

For more details on above mentioned maintenance screens, refer to Payments Core User Guide.

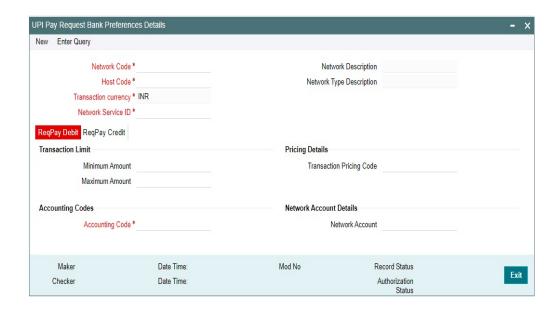
The other key maintenances are as follows:

2.2.1 <u>UPI Pay Request Bank Preferences</u>

You can maintain the UPI Pay Request Bank Preferences in this screen maintaining preferences such as transaction limit, pricing code, accounting codes, network account details. This is be referred when processing:

- Debit request API coming in from NPCI UPI when the bank is a 'Remitter Bank'
- Credit request API coming in from NPCI UPI when bank is a 'Beneficiary Bank'

You can invoke the 'UPI Pay Request Bank Preferences' screen by typing 'PVDBKPRF' in the field at the top right corner of the application toolbar and clicking the adjoining arrow button. Click 'New' button on the Application toolbar.



You can specify the following fields:

Network Code

Select the Network code from the list of values. If only one Network is maintained with payment type as 'UPI' for the host code, the same is defaulted in this field. In case multiple networks are found for the same combination, all applicable networks are listed. You can select the required network.

Network Description

System defaults the Description on the Network Code selected.

Network Type Description

System defaults the Network Type Description on the Network Code selected.

Host Code

System defaults the Host code of transaction branch.

Transaction Currency

Allowed Currency for UPI payment is 'INR' only. This is defaulted here.

Network Service ID

Specify the Network Service ID.

Transaction Limit

You can specify the Minimum and Maximum Transaction Limit. Transaction Min, Max limit is maintained per UPI Payment (only for Req Pay Debit Request) as required by the bank. Modifiable

Pricing Details, Accounting Codes and Network Account Details are maintained for Request Pay Debit & Request Pay Credit as below:

Transaction Pricing Code

You can select the Pricing Code from the list of values available. Pricing Code maintained in screen Pricing Code maintenance (PPDCDMNT) is linked here. Computation of Charges and Tax are based on the pricing code linked here.

Accounting Code

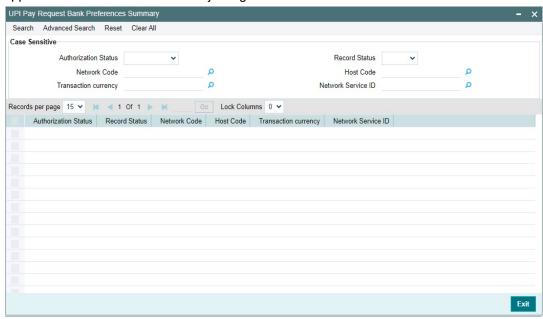
You can select the Accounting Code from the list of values available. It's a mandatory field.

Network Account Details

You can select the Network Account from the list of values available. While posting the debit / credit accounting, Clearing GL is replaced with Network account if maintained.

2.2.1.1 UPI Pay Request Bank Preferences Summary

You can view a summary of network using 'UPI Pay Request Bank Preferences Summary' screen. To invoke this screen, type 'PVSBKPRF' in the field at the top right corner of the application toolbar and click the adjoining arrow button.



You can search for the networks using one or more of the following parameters:

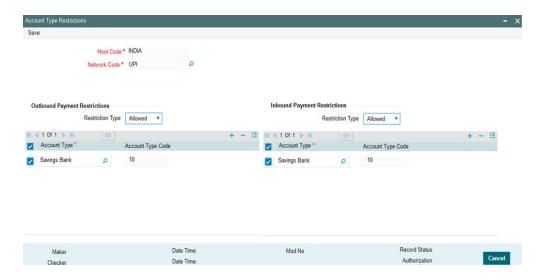
- Authorization Status
- Record Status
- Network Code
- Host Code
- Transaction currency
- Network Service ID

Once you have specified the search parameters, click 'Search' button. The system displays the records that match the search criteria.

2.2.2 Account Type Restrictions

You can maintain the Account type restrictions in this existing screen for UPI Payments. For UPI Payments allowed account types are Savings and Current.

You can invoke the 'Account Type Restrictions' screen by typing 'PJDACSTR' in the field at the top right corner of the application toolbar and clicking the adjoining arrow button. Click 'New' button on the Application toolbar.



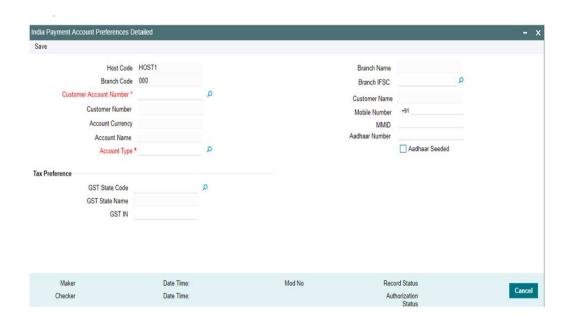
2.2.3 <u>India Payment Account Preferences</u>

The existing screen India Payment Account Preferences screen is modified and below new fields are added:

- Customer Number
- Account Name
- Customer Name

These fields are defaulted based on the customer account number selected.

Branch IFSC field is added as an LOV. This lists open and valid IFSC Codes maintained. You can select the appropriate branch IFSC code for the customer account.

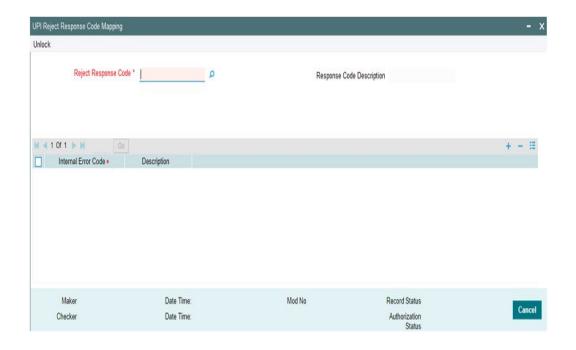


2.2.4 UPI Reject Response Code Maintenance

This screen has factory shipped values for reject response codes mapped to internal error code.

You can invoke the 'UPI Reject Response Code' screen by typing 'PVDRJMNT' in the field at the top right corner of the application toolbar and clicking the adjoining arrow button. Click 'Unlock' button on the Application toolbar.

- You are allowed to update the reject response code and internal error code mapping from here.
- Same error code cannot be linked to more than one valid reject response code.
- Auto reject of a payment request (ReqPay Debit, ReqPayCredit), if applicable,
- is initiated on encountering internal system error codes while processing incoming pay request APIs. Auto rejects are processed with the Reject response code linked to the error code.



2.3 <u>UPI Pay Request – Remitter Bank – Request for Debit Processing</u>

This section contains the following topics:

Section 2.3.1, "ReqPay Debit – API Processing"

2.3.1 ReqPay Debit - API Processing

- The response API returns transaction status confirmation.
- API Name: RegPay
- Transaction Type: Debit

API Name	Request Input to OBPM	Request from OBPM
APINAIIIE	Reduest libut to Obrivi	Reduest Ifolii Obrivi

ReqPay	Timestamp	Timestamp	
RespPay	Request Message ID	Response Message ID	
	Remarks (Note)	Remarks (Note)	
Type		Type (Outbound Transaction)	
	Payer VPA	Original Request Message ID	
	Payer Name	Result	
		Error Code	
		Payer VPA	
1 -		Transfer Amount	
	Payer Branch IFSC	Transfer Currency 'INR'	
	Transfer Amount	ApprovalRef (last 6-digit of UPI	
	Transfer Currency 'INR'	reference number)	
	Remarks	Payer Account Number	
	MPIN	Response Code	
	Payee VPA	Payee VPA	
	Payee Name	Transfer Amount	
	Payee Account Number	Transfer Currency 'INR'	
	Account Type	Payee Account Number	
	Payee Branch IFSC		

2.4 <u>UPI Pay Request – Beneficiary Bank – Request for Credit - Processing</u>

This section contains the following topics:

- I Section 2.4.1, "RegPay Credit API Processing"
- I Section 2.4.2, "ReqPay Credit Inbound Payments Processing"
- Section 2.4.3, "ReqPay Credit Inbound Payment View"

2.4.1 ReqPay Credit – API Processing

- System processes the incoming request for credit API 'ReqPay Credit'. This API has the Payer VPA, Payer Account, Payer Bank IFSC Code, Transaction Amount, Instruction Date, Payee VPA, Payee Account, Payee Bank IFSC code as input.
- System generates an acknowledgement message as below:
- <upi:Ack xmlns:upi="" api="" reqMsgld="" err="" ts=""/>
- The response API returns the transaction status confirmation (success / fail).
 - API Name: ReqPay
 - Transaction Type:Credit

API Name Request Ir	out to OBPM Request from OBPM	
---------------------	-------------------------------	--

ReqPay	Timestamp	Timestamp
		·
RespPay	Request Message ID	Response Message ID
	Remarks (Note)	Remarks (Note)
	Туре	Type (Inbound Transaction)
	Payer VPA	Original Request Message ID
	Payer Name	Result
	Payer Mobile Number	Error Code
	Payer Account Number	Payer VPA
	Account Type	Transfer Amount
	Payer Branch IFSC	Transfer Currency 'INR'
	Transfer Amount	ApprovalRef (echo)
	Transfer Currency 'INR'	Payer Account Number
	Remarks	Response Code (echo)
	Payee VPA	Payee VPA
	Payee Name	Transfer Amount
	Payee Account Number	Transfer Currency 'INR'
	Account Type	ApprovalRef (last 6-digit of UPI
	Payee Branch IFSC	reference number, as received)
		Payee Account Number
		Response Code

ReqPay Credit Inbound Payments Transaction Processing

2.4.1.1 Transaction Type Derivation:

• System parses the incoming message and derive the Transaction Type as' CREDIT' from the XML tag <Txn> type.

System generates an acknowledgement message

2.4.1.2 <u>Transaction Account Branch Derivation:</u>

• System derives the transaction account branch as below:

Payer Branch IFSC	XML Tag
Derive Based on IFSC Code present in	<payee.ac.detail> Name 'IFSC'</payee.ac.detail>
XML tag of ReqPay API	

- Once the above validations and derivations are done, the below mandatory fields checks are done:
 - Network Code: Validated against the static maintenance (PMDNWCOD) available.
 - Host Code: The Host Code linked to the transaction branch is derived from branch parameters (STDCRBRN)
 - Transaction Branch Code: This is a valid branch in core maintenance.

2.4.1.3 Initial Validations:

- The following processing are covered as part of initial validations:
 - Data enrichment Account / Bank Re-direction, Network character replacement
 - Account/Customer Validations based on core maintenance



- If Account re-direction or bank re-direction is maintained, then the account / bank details are replaced by that values.
- Network character replacement is done for characters not allowed by the network.
- Mandatory Fields / Referential data checks are done based on the details received in the payment request and the values populated by system
 - In case of validation failure for any of the above, transaction is rejected with proper error code.
 - Account Type Restrictions:
 - System validates if the creditor (Payee) account type is allowed for the Network Code as maintained in Account Type Restrictions screen (PJDACSTR) for the outbound payment. After the above step, If the creditor (Payee) account type is found to be '40' i.e. NRE account type, then system will apply Non NRE to NRE payments Check validation.
- Customer / Account Status validations:
 - Customer / Account Status checks is not performed in OBPM. EAC / DDA system performs these checks.

2.4.1.4 Duplicate Check:

- Based on the duplicate days and fields set, duplicate check for the transaction are done.
 If the transaction is identified as a duplicate transaction, the transaction is moved to the business override queue.
- The following parameters are available for duplicate check

- :Payer Account DBTR_ACC
 - Payee Account CRDTR_ACC
 - Transaction Amount TFR_AMT
 - Instruction Date VALUE DATE

Payer Bank IFSC Code DBTR_BANK_CODE

UPI Reference Number END_TO_END_ID

2.4.1.5 External Account Check

- Transaction details are to DDA system, for the validation of the credit account. If External Account Check is 'Approved', the transaction is marked as 'Processed' and response message (Response Code '00' is generated).
 - If the EAC status is 'Rejected', 'Interim', 'Pending' then the transaction is rejected and response message generated (Response Code: '<>00')

2.4.1.6 **Pricing / Tax**

• Internal pricing / GST tax calculations are performed for the inbound payment, if applicable.

2.4.1.7 Messaging:

 Every request message (ReqPay) received for 'Pay Request – Credit' is responded (RespPay) with a response message and Time stamp. Message is forwarded to NPCI UPI system. System generates Response Message and it is forwarded to NPCI UPI system.

2.4.1.8 Accounting Handoff

Accounting is handed off to the external system.

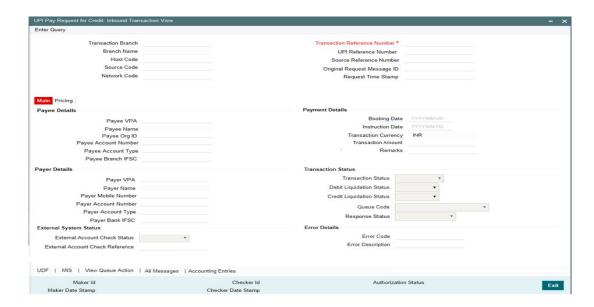
2.4.1.9 Notification

 Notification is generated to the Payee after the credit accounting is successfully posted (Transaction Status 'Processed', Event 'CRLQ').

2.4.2 RegPay Credit Inbound Payment View

You can view the ReqPay Credit Inbound transactions in this screen.

You can invoke 'ReqPay Credit Inbound Payment View' screen by typing 'PVDIVIEW' in the field at the top right corner of the Application tool bar and clicking on the adjoining arrow button.



 From this screen, click Enter Query. The Transaction Reference field gets enabled which opens an LOV screen.

Along with the transaction details, you can also view the details for the following:

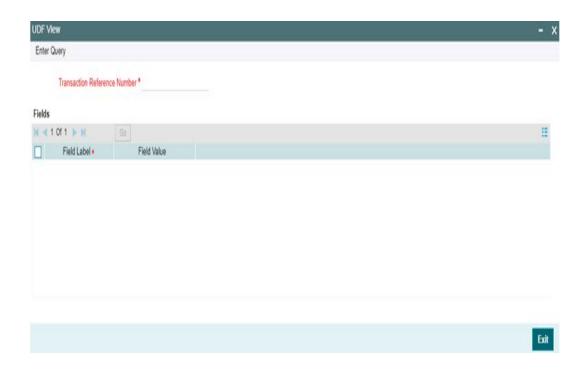
- Source code: For transactions received through Rest API services, the source code is populated as received in the request.
- External System Status
- Transaction Status

Click Execute Query to populate the details of the transaction in the Inbound Payments View screen. The system displays all the fields in the below mentioned tabs based on the transaction reference number selected.

For more details on Main, Payment Details and Pricing tabs refer to details above.

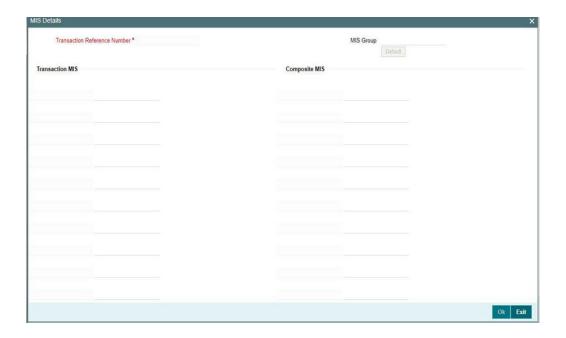
2.4.2.1 UDF Tab

You can invoke this screen by clicking UDF tab in the PVDIVIEW screen.



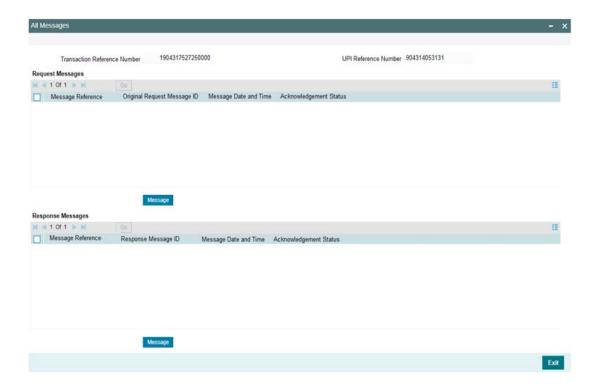
2.4.2.2 MIS Tab

You can invoke this screen by clicking MIS tab in the PVDIVIEW screen.



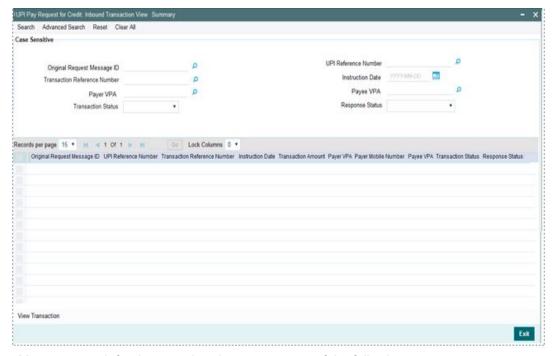
2.4.2.3 All Messages

On click of this button, the below screen is launched to view 'ReqPay Credit' message received from NPCI UPI and RespPay Credit' message sent to NPCI UPI.



2.4.2.4 ReqPay Credit Inbound Payments View Summary

You can view the summary in 'ReqPay Credit Inbound Transaction View Summary' screen. You can invoke the Inbound Payments Summary screen by typing 'PVSIVIEW' in the field at the top right corner of the Application toolbar and clicking on the adjoining arrow button.



You can search for the records using one or more of the following parameters:

- Transaction Reference
- Original Request Message ID
- Payer VPA
- Payee VPA
- **UPI Reference Number**
- Instruction Date
- Payer Mobile Number
- Response Status Transaction Status

Once you have specified the search parameters, click 'Search' button. The system displays the records that match the search criteria.

Double click a record or click 'View Transaction 'button to view the detailed screen.

2.5 UPI Non-Financial API – List of accounts linked to Mobile Number

This section contains the following topics:

- Section 2.5.1, "Request for Account List API Processing"
- Section 2.5.2, "UPI Non-FIN API Request- Inbound Message Browser"
- Section 2.5.3, "UPI Non-FIN API Response- Outbound Message Browser"

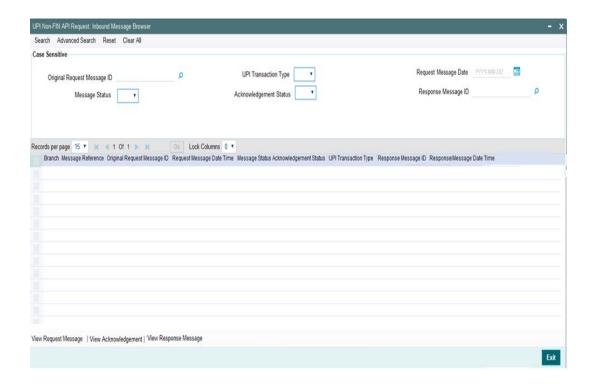
2.5.1 Request for Account List – API Processing

- Incoming request API 'ReqListAccount'. This API has the Bank Name, Customer Mobile Number as input. System generates an acknowledgement message on successful request.
- The response API returns customer account numbers linked to the mobile number along with account type and respective account branch IFSC codes. The account number is masked, except for the last four digits, in the response API 'RespListAccount'

2.5.2 **UPI Non-FIN API Request- Inbound Message Browser**

A new message browser screen 'UPI Non-FIN API Request - Inbound Message Browser' is available to view the list of accounts request messages and the linked acknowledgment / response messages.

You can invoke the "Non-FIN API Request Inbound Message Browser" screen by typing 'PVSNFBRW' in the field at the top right corner of the application tool bar and clicking on the adjoining arrow button.



You can search for the records using one or more of the following parameters:

- Original Request Message ID
- Message Status
- UPI Transaction Type
- Acknowledgement Status
- Request Message Date
- Response Message ID

You can view the Request, Acknowledgment and Response Messages as below:

- View Request Message: On click of this button, depending on the UPI transaction type, 'ReqListAccount' message received from NPCI UPI is displayed.
- View Acknowledgement: On click of this button, system the 'ACK
- / NAK' message sent to NPCI UPI is displayed.
- View Response Message: On click of this button, depending on the UPI transaction type, "RespListAccount' message sent to NPCI UPI is displayed.

2.6 <u>UPI Payments Message Browser</u>

- All Incoming Requests XML received over HTTPS are available in the UPI Payments browser along with the received message with OBPM generated reference, received date, processing status. An ACK / NACK message is generated and sent out immediately.
- After processing the transaction (Outbound Payment, Inbound Payment), response message is generated and populated into a JMS queue. From there, the response XML is sent over HTTPS

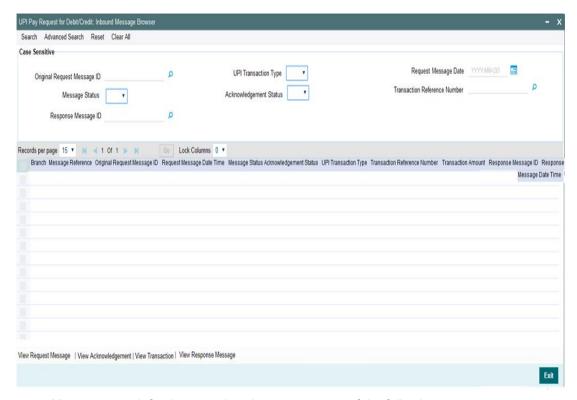
This section contains the following topics:

Section 2.6.2, "UPI Pay Request for Debit / Credit: Inbound Message Browser"

2.6.1 <u>UPI Pay Request for Debit / Credit: Inbound Message Browser</u>

A new message browser screen 'UPI Pay Request for Debit / Credit- Inbound Message Browser' is available to view all the inbound Debit request / Credit request messages and the linked acknowledgment / response messages.

You can invoke the "Inbound Message Browser" screen by typing 'PVSINBRW' in the field at the top right corner of the application tool bar and clicking on the adjoining arrow button.



You can search for the records using one or more of the following parameters:

- Original Request Message ID
- Message Status
- Response Message ID
- **UPI Transaction Type**
- Acknowledgement Status
- Request Message Date
- **Transaction Reference Number**

You can view the Request, Transaction, Acknowledgment and Response Messages as below:

- View Reguest Message: On click of this button, depending on the UPI transaction type, 'ReqPay Debit' or 'ReqPay Credit' messages received from NPCI UPI is displayed.
- View Acknowledgement: On click of this button, system the 'ACK / NAK' message sent to NPCI UPI is displayed.

 View Transaction: On click of this button, depending on the UPI transaction type, the 'UPI Pay Request for Debit Outbound Payment Transaction View or 'UPI Pay Request for Credit Inbound Payment Transaction View screens are launched View Response Message: On click of this button, depending on the UPI transaction type, 'RespPay Debit' or 'RespPay Credit' message received from NPCI UPI is displayed.

3. Function ID Glossary

P		PVDRJMNT	2-5
PJDACSTR	2-4	PVSBKPRF	2-3
PVDBKPRF	2-2	PVSINBRW	2-15
PVDIVIEW	2-10	PVSIVIEW .	2-12
		PVSNFBRW	2-13