

Systems Administration Guide

iPlanet Trustbase Payment Services

Version 2.0 Beta

July 2002

Rundate:

3:47, October 22, 2002

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List of Figures

Figure 1-1	Data Checkpoint List for the three corner model	26
Figure 1-2	TTM table Auditdata	27
Figure 1-3	iTTM table Auditparameters	28
Figure 1-4	iTTM table audit_text	28
Figure 1-5	iTTM table bill_data	29
Figure 1-6	iTTM table cert_data	30
Figure 1-7	iTTM table error	31
Figure 1-8	iTTM table error_codes	32
Figure 1-9	iTTM table error_parameters	33
Figure 1-10	iTTM table error_support	34
Figure 1-11	iTTM table identrus_data	35
Figure 1-12	iTTM table obsp_data	36
Figure 1-13	iTTM table obsp_requests	37
Figure 1-14	iTTM table obsp_responses	38
Figure 1-15	iTTM table raw_data	39
Figure 1-16	iTTM table smime_transport	40
Figure 1-17	iTTM table smtp_connection	41
Figure 1-18	iTTM table smtp_message	42
Figure 1-19	ITPS table cust_dn_mapping	43
Figure 1-20	iTPS table eleanor_reference_map	44
Figure 1-21	iTPS table error_map	45
Figure 1-22	iTPS table payments_log_email	46
Figure 1-23	iTPS table payments_raw_in	47
Figure 1-24	iTPS table payments_raw_out	48
Figure 1-25	iTPS table sc_currency_code	49
Figure 1-26	iTPS table sc_currency_code_list	49
Figure 1-27	iTPS table BIAB_Requests	50

Figure 1-28	iTPS table BIAB_Responses	51
Figure 1-29	Payment Main Menu	53
Figure 1-30	Payment Gateway Preferences Screen	54
Figure 1-31	Membership List	56
Figure 1-32	Member Details	58
Figure 1-33	Inter-Participant Timeouts Screen	60
Figure 1-34	Payments Mail Settings	61
Figure 1-35	Settlement Chain Main Menu	62
Figure 1-36	Currency Code Administration	64
Figure 1-37	Adding a currency code to the Settlement Chain	65
Figure 1-38	Recoverable Messages	67
Figure 1-39	Recovered messages	68
Figure 1-40	Payment Products screen	69
Figure 1-41	Condition Registry Screen	70
Figure 1-42	General Payment Settings	71
Figure 1-43	Asynchronous Acknowledge Management Screens	73
Figure 1-44	Subscriber Details	75
Figure 1-45	Subscriber Details Add Screen	76
Figure 1-46	Remittance Details	77
Figure 1-47	Payments Configuration Main Menu	78
Figure 1-48	Transaction Monitor Search Screen	79
Figure 1-49	Example Search	81
Figure 1-50	Transaction Monitor History Screen	82
Figure 1-51	Transaction Monitor Single Message Screen	84
Figure 1-52	Message type for a particular transaction.	85
Figure 1-53	Message XML details	86
Figure 3-1	TooledUp Main Menu	113
Figure 3-2	TooledUp Ltd Catalogs	114
Figure 3-3	TooledUp Category Selection	115
Figure 3-4	Add to Shopping Basket	116
Figure 3-5	Shopping Bag Details	117
Figure 3-6	Enter Delivery Details	118
Figure 3-7	Payment Type	119
Figure 3-8	Confirm Delivery Details	121
Figure 3-9	Payment Accepted	122
Figure 3-10	Order List	124
Figure 3-11	Bank in a Box Main Menu	127

Figure 3-12	Bank in a Box Admin Tool Homepage	128
Figure 3-13	BiaB Message Screens	129
Figure 3-14	BiaB message searching	130
Figure 3-15	BiaB Message Details	131
Figure 3-16	Acknowledging a message	132
Figure 3-17	An XML Message	133
Figure 3-18	Buyers Bank Website Homepage	134
Figure 3-19	Initiate Payment	135
Figure 3-20	Sign Payment	136
Figure 3-21	Payment Initiation completed successfully	138
Figure 3-22	List Payment	139
Figure 3-23	Conditional Payment Order	141
Figure 3-24	Approve Payment	142
Figure 3-25	A condition has been created	143
Figure 3-26	Payment Details	144
Figure 3-27	Payment Reference Details	145
Figure 3-28	Payment Reference	146
Figure 3-29	Make the Payment	148
Figure 3-30	Making a Payment Obligation	150
Figure 3-31	Biab Active Messages Screen	151
Figure 3-32	Send Acknowledgement	152
Figure 3-33	Send Obligation Acknowledgement Screen	153
Figure 3-34	Transfer Obligation	154
Figure 4-1	Four Corner Model in Operation	158

Contents

List of Figures 3

Introduction 11

Overall Layout	12
Related Documents	13
Software Requirements	14
Hardware requirements	15
Memory	15
Disk Space	15
Target Audience	16

Chapter 1 Configuration

Chapter 1 Configuration	17
--------------------------------------	-----------

Configuration Overview	18
------------------------------	----

Certificate Configuration	19
---------------------------------	----

Buyers Bank Certificates	19
--------------------------------	----

Sellers Website Tooled Up Certificates	19
--	----

iPlanet Trustbase Transaction Manager Certificates	19
--	----

iPlanet Trustbase Payment Services Certificates	19
---	----

BiaB Certificates	19
-------------------------	----

CPI certificates	19
------------------------	----

Secure properties (Optional)	20
------------------------------------	----

Database Table Definitions	21
----------------------------------	----

Database Check Points	25
-----------------------------	----

iTTM Tables	27
-------------------	----

Auditdata	27
-----------------	----

Auditparameters	28
-----------------------	----

audit_text	28
------------------	----

bill_data	29
-----------------	----

cert_data	30
-----------------	----

Error	31
-------------	----

error_codes	32
error_parameters	33
error_support	34
identrus_data	35
ocsp_data	36
ocsp_requests	37
ocsp_responses	38
raw_data	39
smime_transport	40
smtp_connection	41
smtp_message	42
iTPS Tables	43
cust_dn_mapping	43
eleanor_reference_map	44
error_map	45
payments_log_email	46
payments_raw_in	47
payments_raw_out	48
sc_currency_code	49
sc_currency_code_list	49
BIAB_Requests	50
BIAB_Responses	51
Configuration Pre-requisites	52
System Configuration	53
Payment Gateway Preferences	54
Scheme Membership List	56
Inter-Participant Timeouts	60
Payments Mail Settings	61
Settlement Chain	62
Payment Recovery	67
Payments Product Configuration	69
Condition Registry	70
General Payment Settings	71
Asynchronous Acknowledge Management	73
Subscriber Details	75
Remittance Details	77
Transaction Monitoring	78
Configuring Users (advanced)	87
Attributes	87
Roles	88
Users	89

Chapter 2 Configuring your Websites	91
Configuration prerequisites	92
Order for starting the system	92
iTTM First Time Start Procedure	93
iTTM Restart procedure	93
Steps to Configuring your websites	94
Chapter 3 Running the System	97
Starting the system	98
Oracle 8.1.7	99
nCipher	100
iMQ for Java 2.0	101
Bank in a Box back End	102
Bank in a Box administrator tool	103
iTPS	104
iWS 6.0 SP1 105	
iAS 6.0 106	
iTTM 3.0.1 107	
Enabling iMQ for Java	108
Buyer and Seller Web applications	109
Running the Models	111
Running the Three Corner Model	111
Running the Four Corner Model (SFIM)	111
Making a Payment via the Buyers Bank (BFIM)	112
Initiating Payment via Sellers Website TooledUp	113
Running Bank in a Box Back End	125
Running Bank in a Box Admin Tool	126
Initiating Payment via Buyers Bank Website	134
Condition Management Website	140
Obligation Management Website	149
Running the CPI Test program	155
Chapter 4 Running the Four Corner Model	157
Introduction	158
Setup for a 4 Corner model	159
CDP	159
Buyer	159
Seller	160
Buyer's Bank (BFI)	161
Seller's Bank (SFI)	164
Operational Steps in a 4 Corner Model	166
Payment Order	166
Payment Obligation	167

Certified Payment Obligation	169
Conditional Payment Order	171
Conditional Payment Obligation	173
Certified Conditional Payment Obligation	176
Chapter 5 Email Notification	181
Introduction	182
Email Location Retrieval	183
Signing Certificate	183
User Database	183
Message Contents	183
Message Types	184
Payment Order	184
Payment Obligation	186
Conditional Payment Order	187
Scenario A	188
Scenario B	190
Scenario C	191
Scenario D	193
Scenario E	194
.....	195
Glossary	197
Index	203

Introduction

The following chapter discusses all related documents to this guide.

Overall Layout

The complete documentation set for iPlanet Trustbase payment Services comprises of:

Installation Guide That explains how to install iPlanet Trustbase Payment Services and all its associated components.

System Administration Guide (This document) that explains how to configure and run iPlanet Trustbase Payment Services. It further illustrates how to make payments.

Developer and Integration Guide that provides a comprehensive example of how to deploy your own CPI application and how to integrate with your existing back end banking system.

The manual Covers:

- general Configuration features
- Configuration pre-requisites to running the system
- Running the system
- Running the four Corner Model

Detailed documentation can also be found on the iPlanet Trustbase Payment Services Website at

<http://docs.sun.com/?p=prod/s1.iptbpayment>

<http://docs.iplanet.com/docs/manuals/itps.html>

Related Documents

The following documents are considered pre-requisites to installing iPlanet Trustbase Payment Services (iTPS)

- Eleanor . iTPS is based on the Eleanor Technical Specification and as such you need to have familiarised yourself with this document.

<http://www.identrus.com>

Eleanor Scheme Technical Specification Version 1.0b

Eleanor Scheme Operating Rules

Eleanor Scheme Product Guide

Note This Website requires a Username and password that should have been given to you when you joined the Identrus Scheme

- Identrus Message Specifications. iTPS is based on the IDentrus four corner model and as such four servers configured as identrus Transaction Coordinators (TC) using iPlanet Trustbase Transaction manager (iTMM) are assumed to be up and running. See <http://www.identrus.com>

Identrus PKI Compliance (IT-PKI)

Transaction Coordinator requirements (IT-TCFUNC)

Identrus Smart Card Signing Interface Requirements (IT-SIR, ver 1.7)

Core messaging specification (IT-TCMPD)

Certificate Status Check Messaging specification (IT-TCCSC)

Identrus Digital Signature Messaging System Specification (IT-DSMSSP, ver 2.0).

Transaction Coordinator Certificate Status Check (CSC) Protocol Definition (IT-TCCSC, ver 2.0b)

Note In order to access the documents within this website you need a Username and password that should have been given to you when you joined the Identrus Scheme.

- iPlanet Trustbase Transaction Manager (iTMM) documentation itself can be found below:

<http://docs.sun.com/?p=prod/s1.iptbtranm>

or in /cdrom/cdrom0

Software Requirements

Solaris(TM) 8 for SPARC(TM)

JDK 1.3.1

iPlanet Web Server 6.0 SP1

iPlanet Application Server 6.0 SP3

iPlanet Trustbase(TM) Transaction Manager 3.0.1

iMQ for Java 2.0

Oracle 8.1.7

Certificate Authority [e.g. iPlanet Certificate Management System 4.2]

Optional Hardware Security Module (HSM) on server [mandatory for Identrus participation - nCipher nShield 300 SCSI]

Any Identrus compatible SmartCard and Readers. The following scenario has been tested and thus supported: GemSAFE IS 1.1 for Identrus System 16000 Smartcards are configured on Buyer PC for use with Tooledup Seller Website.

Hardware requirements

Memory

Recommended single machine setup 512 MB

Disk Space

Recommended single machine setup 1 GB

Target Audience

System Administrators and Application Developers within the banking profession.

Configuration

Configuration Overview

The following configurations need to take place:

- Certificates and Bank Back End Authorisation
- Database checkpoints that allow you gain access to information about the cause of error during runtime
- Screen Services
- Payments Screens
- Customers Authorisation Services

Certificate Configuration

Before testing your installation is complete you will need to configure the system with the appropriate certificates.

Buyers Bank Certificates

You'll need a signing certificate issued to you by your Bank and containing a Trusted Identrus Root. This is a certificate hierarchy and contains a PKCS12 signing chain containing private key for signing information.

Sellers Website Tooled Up Certificates

This is dealt with in the Install procedure for tooledup.

iPlanet Trustbase Transaction Manager Certificates

Certificates need to be configured as described in the Identrus four corner model. See runCertWizard in the iTTM 3.0.1 Installation and Configuration Guide

<http://docs.sun.com/source/816-6283-10/index.html>

iPlanet Trustbase Payment Services Certificates

None required

BiaB Certificates

No certificates required

CPI certificates

Please refer to Chapter 3 of the Developer Guide for details of how to install certificates

Secure properties (Optional)

Once installation is complete you may wish to secure certain properties by redirecting these properties to an encrypted file

```
/opt/ittm/myhost/secure.properties
```

For details on how to do this please consult the iPlanet Trustbase Transaction Manager Installation and Configuration Guide.

Database Table Definitions

This section classifies all of the tables in an iTTM/iTPS/BIAB/Tooled Up installation.

Table Name	Product	Description
archive_table	iTTM	No Longer Used
attribute_key_attrs	iTTM	No Longer Used
attribute_name_attrs	iTTM	No Longer Used
auditdata	iTTM	Log of all audit events
audit_parameters	iTTM	Log of all event specific parameters for each audit event
audit_services	iTTM	Private Internal Data
audit_text	iTTM	Mapping of audit strings to locale specific strings
authorisation	iTTM	Private Internal Data
biab_requests	BIAB	All messages arriving at BIAB
biab_responses	BIAB	All messages leaving BIAB
biab_user	BIAB	Valid users of BIAB
bill_data	iTTM	An entry for each Identrus Message is made here, it maps the message signer information to a raw log entry.
category	Tooled Up	Private Internal Data
cdpcert	Tooled Up	Private Internal Data
certificateauthentication	iTTM	Private Internal Data
cert_data	iTTM	All unique certificates from Identrus CertBundles are logged here.
cert_table	iTTM	No Longer Used
condition	Tooled Up	Private Internal Data
config	iTTM	Private Internal Data

cr_condition	iTPS	Private Internal Data
cr_condition_set	iTPS	Private Internal Data
cust_dn_mapping	iTPS	Maps customer certificate to a Bank internal reference. Used for authorisation checking if enabled.
default_locale	iTTM	Private Internal Data
ecips_gatewaypref	iTPS	Private Internal Data
ecips_memdetails	iTPS	Private Internal Data
ecips_timeouts	iTPS	Private Internal Data
eleanor_reference_map	iTPS	Maps Eleanor Tx Id to associated MsgGrpId
environments	iTTM	Private Internal Data
error	iTTM	Log of all errors
error_codes	iTTM	Mapping of error codes to locale specific strings and error severity
error_map	iTPS/BIAB	Maps reason codes to reason texts
error_map_1_0	iTPS/BIAB	No Longer Used
error_map_locales	iTTM	Private Internal Data
error_parameters	iTTM	Log of all error specific parameters for each error entry
error_support	iTTM	Log of supporting error data for error entries – java stacktraces
identrus_data	iTTM	For each Identrus message in the raw log table an entry exists here with key Identrus message fields extracted into the table entry
identrus_messages_set	iTPS	Private Internal Data
init_table	iTTM	Private Internal Data
key_table	iTTM	No Longer Used
ocsp_data	iTTM	Every OCSP request/response that goes to the local OCSP responder – OR request/response from a remote OCSP responder in fallback mode.

ocsp_requests	iTTM	Used by the OCSP responder in iTTM to log all requests received.
ocsp_responses	iTTM	Used by the OCSP responder in the iTTM to log all responses sent out.
ohr	iTPS	Private Internal Data
ordered_product	Tooled Up	Private Internal Data
payment	Tooled Up	Private Internal Data
payments_log_email	iTPS	All outbound emails from iTPS are logged in this table.
payments_raw_in	iTPS	All messages received from the backend bank system are logged
payments_raw_out	iTPS	All messages sent to the backend bank system are logged
product	Tooled Up	Private Internal Data
product_order	Tooled Up	Private Internal Data
raw_data	iTTM	All messages arriving at iTTM are logged in this tamper evident table
registered_user	Tooled Up	Private Internal Data
registered_user1_0	Tooled Up	No Longer Used
revocation_attrs	iTTM	No Longer Used
revocation_serial_num	iTTM	No Longer Used
revocation_table	iTTM	No Longer Used
roles	iTTM	Private Internal Data
role_description	iTTM	Private Internal Data
salt_table	iTTM	No Longer Used
sc_currency_code	iTPS	All allowable currency codes
sc_currency_code_list	iTPS	Currency code to currency description mapping
sc_financial_institution	iTPS	Private Internal Data
sc_settlement_chain	iTPS	Private Internal Data

smime_transport	iTTM	All smime messages have their security information logged
smtp_connection	iTTM	All connections to the SMTP proxy are logged
smtp_message	iTTM	All smtp messages received by the SMTP proxy are logged
sohr	iTPS	Private Internal Data
ssl_connection	iTTM	No Longer Used
trans_ref_cancellation_req	iTPS	Private Internal Data
trans_ref_payment_req	iTPS	Private Internal Data
ttm_organisation	iTTM	Private Internal Data
ttm_role	iTTM	Private Internal Data
ttm_user	iTTM	Private Internal Data
ttm_user_role	iTTM	Private Internal Data
usernamepasswordauth	iTTM	Private Internal Data

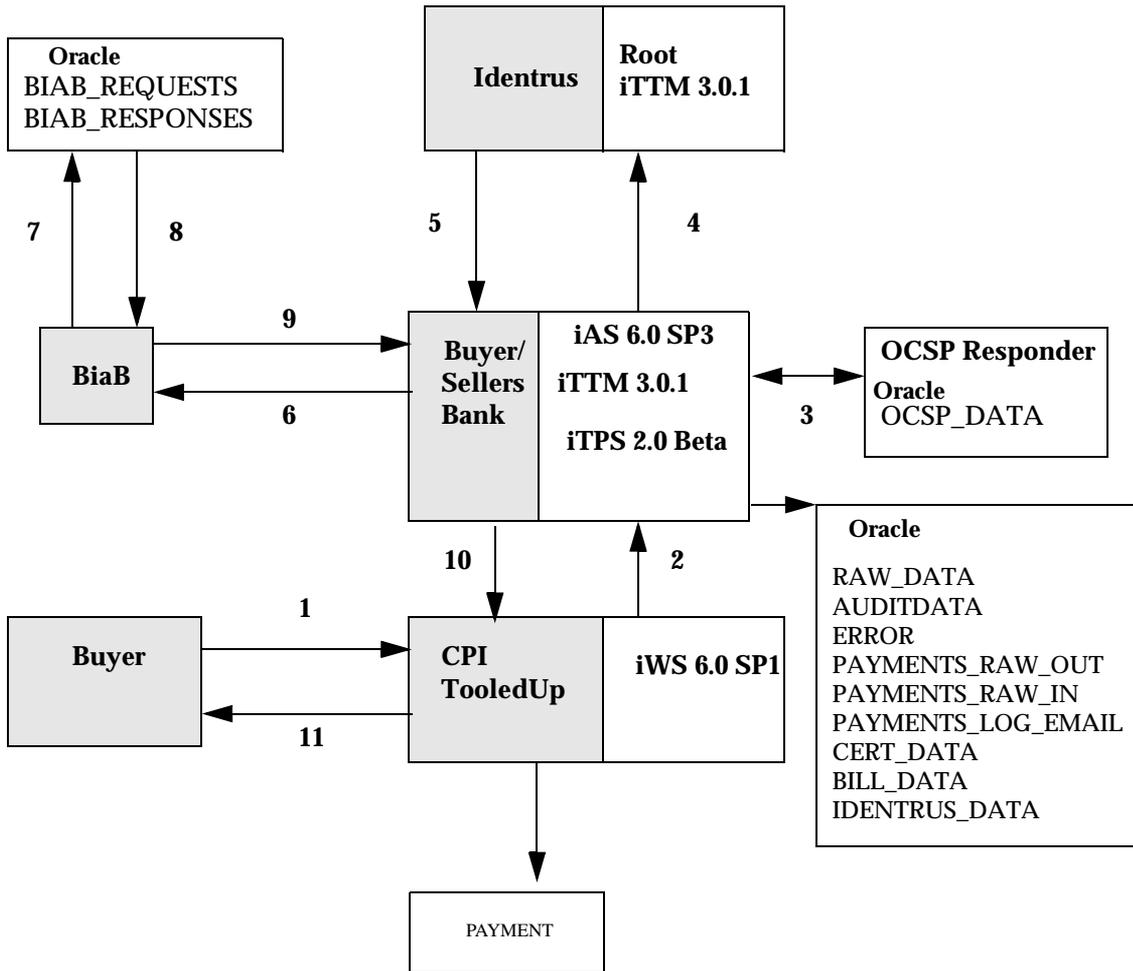
- All tables marked as 'Private Internal Data' are controlled by the specified product and the structures of these tables are subject to change in future revisions.
- All tables marked as 'No Longer Used' are tables that existed in an earlier version of the product that are deprecated in the current version. Because of upgrade paths these tables are not dropped by their respective products, the DBA is at liberty to drop these tables once the contained data is no longer needed.

Database Check Points

This data flow checkpoint diagram and list of points will be used during a transaction and can be used to help locate where an event or error occurs in the system. This is only applicable to synchronous messages. When messages are sent from the Seller web site, messages can be traced at the following points, illustrated using the three corner model in Figure 1-1 “Data Checkpoint List for the three corner model,” on page 26:

Checkpoint	Action/Step/Entry	Table/Location to view data/Message
1	Buyer posts a request to the seller’s web site.	Web server log (web server): <i>/opt/iws6/logs/access</i>
2	Message (transaction) is sent from CPI to iTTM/iTPS (TC). The message is logged.	Kxs access is written with a timestamp: <i>/opt/ias6/logs/kxs</i> Kjs jvm log file with system.out text: <i>/opt/ias6/logs/kjs</i> iTTM Oracle table: RAW_DATA
	Initially message is validated. If error in validation, log to audit. If error in system, log to error	iTTM Oracle table: AUDITDATA iTTM Oracle table: ERROR
3	TC performs validation check using OCSP to check the status of the Seller’s (Tooled Up) signing certificate.	OCSP_DATA log (See OCSP vendor logs)
4	CSC request to Identrus root (freshness).	iTTM Oracle table: RAW_DATA
5	CSC response from Identrus root	iTTM Oracle table: RAW_DATA
6	TC sends message to BiaB.	iTTM Oracle table: PAYMENTS_RAW_OUT
7	BiaB receives message and logs to BiaB Oracle	BiaB Oracle table: BIAB_REQUESTS. Note this message is identical to the message in PAYMENTS_RAW_OUT (step 6). BiaB terminal shows that a message is received.
8	BiaB processes message and logs response to TC in BiaB Oracle.	BiaB terminal shows that a message is ready. BiaB Oracle table: BIAB_RESPONSES
9	TC receives message from BiaB and logs incoming message.	iTTM Oracle table: PAYMENTS_RAW_IN. Note the message is identical to the message in BIAB_RESPONSES (step 8).
10	TC sends message to web server and logs the outgoing message.	iTTM Oracle table: RAW_DATA
11	Seller (tooled up) logs payment message and status.	iTPS PAYMENT

Figure 1-1 Data Checkpoint List for the three corner model



A typical query might be

```

select * from biab_requests where lastack like '%Service%' and
type like '%xPx';

order by timestamp desc;
  
```

iTTM Tables

Auditdata

Contains internal audit information & indicates what the TC processed.

Figure 1-2 TTM table Auditdata

Column Name	Type	Size	NULL	Key Information	Description
auditid	NUMBER			Primary Key	Unique Identifier. Monotonic sequence number.
messageid	VARCHAR2	240			Not Used
machineid	VARCHAR2	50	Not Null		IP address of machine that logged audit event
timestamp	DATE		Not Null		The timestamp of when event was logged.
audittype	VARCHAR2	200	Not Null	FK-> audit_text.audit_t ext_id	The class of audit that this event is
message	VARCHAR2	1000	Not Null	FK - audit_text.audit_t ext_id	The audit message reference

Auditparameters

Log of all event specific parameters for each audit event.

Figure 1-3 iTTM table Auditparameters

Column Name	Type	Size	NULL	Key Information	Description
auditid	NUMBER			FK-> AUDITDATA.auditid	The audit id in auditdata that this parameter relates to.
parameter	VARCHAR2	2000			The value of the parameter
parameter_no	NUMBER				The "tag" number when this parameter value is inserted into the audit_text

audit_text

Maps audit strings to locale specific strings

Figure 1-4 iTTM table audit_text

Column Name	Type	Size	NULL	Key Information	Description
audit_text_id	VARCHAR2	1000	Not Null	PK	Unique Id
text	VARCHAR2	1000			The text of the audit message or type in a locale specific form
locale	VARCHAR2	10	Not Null		The locale of the text

bill_data

Billing records are a sub-set of the information within the raw message log that provides sufficient information to determine who made each transaction. These tables are designed for used by third party tools that generate the actual Bill for the customer. The definitions for the bill table columns are as follows:

Figure 1-5 iTTM table bill_data

Column Name	Type	Size	NULL	Key Information	Description
subjectdn	VARCHAR2	500	Not Null		This will be the originator distinguished name extracted from the mandatory Identrus level 1 message signature. This will determine who should be billed.
issuerdn	VARCHAR2	500	Not Null		This will be the issuer distinguished name extracted from the mandatory Identrus level 1 message signature. This is to enable the identification of the exact key used to sign this message - in conjunction with the serial number field below.
serialnumber	VARCHAR2	100	Not Null		This will be the originator certificate serial number that may be used to identify the exact key used to sign the message - in conjunction with the issuer distinguished name.
rawrecordid	VARCHAR2	240	Not Null	FK->raw_data.recordmarker	This will be the RawRecordId of the associated raw log table record.

cert_data

In order to reduce the volume of data logged with each Identrus message the certificates contained with the message header are stripped out and stored in a certificate table. If the iPlanet Trustbase Transaction Manager has already logged a particular certificate in the table it will not be logged again. The information stored within the table is:

Figure 1-6 iTTM table cert_data

Column Name	Type	Size	NULL	Key Information	Description
issuerdn	VARCHAR2	500	Not Null	PK	The issuer distinguished name of the certificate, RFC 2253 format string.
serialnumber	VARCHAR2	100	Not Null	PK	The serial number of the certificate
subjectdn	VARCHAR2	500	Not Null		The subject distinguished name from the certificate, in RFC2253 format
certdata	LONG		Not Null		The Base64 certificate data.

Error

The actual error log table is described below, this table is not normally viewed by the administrator directly, instead there is an Oracle view called errorview that provides a resolved view of the errors that have been logged.

Figure 1-7 iTTM table error

Column Name	Type	Size	NULL	Key Information	Description
errorid	NUMBER		Not Null	PK	This is a unique id for the error log entry; it is generated from a monotonic sequence that means that this field may be used to accurately order error messages in the order that they were logged
errorcode	VARCHAR2	7		FK – error_codes.err orcode	This is the errorcode of the error being logged, see the error_codes table description.
timestamp	DATE				This is an ORACLE DateTime field that identifies when the error was logged.
machineid	VARCHAR2	50			This is a string representing the IP address of the iPlanet Trustbase Transaction Manager that logged the error - this may be different in a multi-node IAS installation.
contextid	VARCHAR2	200			This context id field is for future expansion.

error_codes

The iPlanet Trustbase Transaction Manager error logging mechanism requires that every different occurrence of an error be given a code which is unique throughout iPlanet Trustbase Transaction Manager.

Figure 1-8 iTTM table error_codes

Column Name	Type	Size	NULL	Key Information	Description
errorcode	VARCHAR2	7	Not Null	PK	This is the unique errorcode string that identifies the error; this must be 7 characters exactly. The normal for an error code is XXXnnnn. Where XXX is a three-letter code for the service or subsystem and nnnn is a unique number. e.g. IPH0009 is an error in the Identrus Protocol Handler.
classname	VARCHAR2	500			The class from which this error is logged. This places a constraint that each error code may only be used from one place.
severity	NUMBER				This is the severity level of the error, described previously. Constants for each of the error severities can be located in the uk.co.jcp.tbasesimpl.log.error.Error Log class.
message	VARCHAR2	2000	Not Null		This is the localised version of the error message that will appear in the error log. Parameters may be used in this message as described by the standard Java class java.text.MessageFormat. The values to be placed in these parameters are passed in an array of strings that one of the ErrorObject constructors allows.
locale	VARCHAR2	10	Not Null		The locale of this error message text

error_parameters

This is a cross referencing table used for querying errors. parameters are used to expand text according to the error text.

Figure 1-9 iTTM table error_parameters

Column Name	Type	Size	NULL	Key Information	Description
errorid	NUMBER			FK – error.errorid	Error Number
parameter	VARCHAR2	200			Parameter description
parameter_no	NUMBER				Parameter number

error_support

When an error is logged it is often accompanied by some free form string data which helps to store the context in which the error occurred to aid diagnosis. The most common example of such data is exception stack traces.

Figure 1-10 iTTM table error_support

Column Name	Type	Size	NULL	Key Information	Description
errorid	NUMBER			FK – error.errorid	This links this entry to an entry in the Error table
datatype	VARCHAR2	200	Not Null		This datatype is an arbitrary string identifier that categorises the data in the data field. The only value for this field defined by iPlanet Trustbase Transaction Manager is "STACKTRACE" which identifies the contents of the data field to be a Java Exception Stack Trace.
data	LONG				Free form string data

identrus_data

The Identrus data table records identrus specific message data, which can be related to the raw log records in the raw_data table, using the rawrecordid foreign key.

Figure 1-11 iTTM table identrus_data

Column Name	Type	Size	NULL	Key Information	Description
rawrecordid	VARCHAR2	240	Not Null	FW – rawdata.recor dmarker	the id of the associated raw log record
msggrpid	VARCHAR2	120	Not Null		the Identrus MsgGrpId from the NIB of the message
msgid	VARCHAR2	120	NotNull		
doctype	VARCHAR2	120	Not Null		the DOCTYPE of the message.e.g.CSCRequest, PingRequest etc.
connectionid	VARCHAR2	100	NotNull		No Longer Used
protocoltype	VARCHAR2	10	Not Null		The protocol over which the message arrived e.g. HTTP or SMTP
input	NUMBER		Not Null		1 indicates message was inbound to the TC. 0 indicates that the message was outbound from the TC.

ocsp_data

This data records all the ocsp transactions -- responses and requests that are carried out between the local ocsp responder and iTTM.

Figure 1-12 iTTM table ocsp_data

Column Name	Type	Size	NULL	Key Information	Description
ocspid	NUMBER		Not Null	PK	A unique identifier for the record
type	VARCHAR2	2000	Not Null		OCSPREQUEST or OCSRESPONSE
message	VARCHAR2	2000	Not Null		A text summary of the contents of the request or response
machine	VARCHAR2	2000	Not Null		The URL to which the request was submitted to or the response was received from
timestamp	NUMBER		Not Null		The date and time that the entry was made
data	LONG		Not Null		Base64 encoding of the request or response

ocsp_requests

Records messages sent from iTTM to the OCSP Responder.

Figure 1-13 iTTM table ocsp_requests

Column Name	Type	Size	NULL	Key Information	Description
id	VARCHAR2	127	Not NULL	PK	Unique Identifier
requestor_name	VARCHAR2	500	Not Null		The DN of the person requesting the OCSP
signed	NUMBER				Whether it was signed (0 or 1)
version	NUMBER				Version number of OCSP
request	LONG RAW				DER of the request
timestamp	DATE		Not Null		Time of the request

ocsp_responses

Records messages received from the OCSP responder to iTTM

Figure 1-14 iTTM table ocsp_responses

Column Name	Type	Size	NULL	Key Information	Description
id	VARCHAR2	127	Not Null	PK	Unique Identifier connected between request and response
status	NUMBER				Overall status of the response (See RFC2560)
response	LONG RAW				DER of the response
timestamp	DATE		Not Null		Time of the response

raw_data

The raw log inserts a row into a relational database table for each log operation. The structure of the database table is described here. All raw log tables have the same structure, although each raw log uses a different table, whose name is determined when the raw log is created with the AddLoggerWizard. The raw logging facility records raw incoming and outbound message data.

Figure 1-15 iTTM table raw_data

Column Name	Type	Size	NULL	Key info	Description
sessionid	NUMBER		Not Null		The id of the raw log session that wrote record
logconnectionid	NUMBER		Not Null		The id of the connection within the session
recordid	NUMBER		Not Null		The id of the record within the connection
msggrpuid	VARCHAR2	120			No Longer Used
msgid	VARCHAR2	120			No Longer Used
doctype	VARCHAR2	120			No Longer Used
recordmarker	VARCHAR2	240	Not Null	PK	A unique monotonically increasing identifier
connectionid	VARCHAR2	100			No Longer Used
protocoltype	VARCHAR2	10			No Longer Used
input	NUMBER				No Longer Used
timestamp	NUMBER		Not Null		An integer which represents the UNIX time at which the record was logged.
rawdata	LONG		Not Null		The Identrus Message XML, without the CertBundle fields. The certificates from the bundle are logged separately in the "cert_data_table"
digestofrecord	RAW	2000			A SHA-1 digest of this record.
signeddigestofcalculation	RAW	2000			An RSA signature of this record and data from the previous record.

smime_transport

Logs incoming SMIME connections

Figure 1-16 iTTM table smime_transport

Column Name	Type	Size	NUL L	Key Information	Description
connection_id	VARCHAR2	100	Not Nul l	PK	Provides a link back to the smtp_message table
peer_issuer_dn	VARCHAR2	2000			The issuer_dn of the certificate that was used to verify the message
peer_cert_serial_number	VARCHAR2	100			The serial number of the certificate used to verify the message.
message_protection	VARCHAR2	100			The type of protection used to secure the message
time_stamp_type	VARCHAR2	10			The type of timestamp LOCAL or NETWORK
time_stamp	DATE		Not Nul l		The time at which the entry was made

smtp_connection

The ssl_connection and smtp_message tables both have connection_id fields that are passed to the iPlanet Trustbase Transaction Manager running in the application server. This connection_id is stored within the Identrus Log table allowing queries that link the originator information with the actual requests made.

Figure 1-17 iTTM table smtp_connection

Column Name	Type	Size	NULL	Key Information	Description
stream_id	VARCHAR2	100	Not Null	PK	Identifier for the connection
peer_ip_addr	VARCHAR2	20	Not Null		IP address of the peer
timestamptype	VARCHAR2	10			Whether the time of the connection was local or remote
timestamp	DATE		Not Null		The time the connection was made

smtp_message

Logs incoming SMTP mail messages.

Figure 1-18 iTTM table smtp_message

Column Name	Type	Size	NULL	Key Information	Description
stream_id	VARCHAR2	100	Not Null	FK->smime_transport.connection_id	A unique id for the smime_transport
connection_id	VARCHAR2	100	Not Null	FK->smtp_connection.stream_id	A unique id for the smtp connection
recipients	VARCHAR2	1000	Not Null		The recipients of this message
sender	VARCHAR2	100	Not Null		The sender of this message
timestamptype	VARCHAR2	10			The type of timestamp LOCAL or NETWORK
message_valid	NUMBER		Not Null		Is the message valid? 1 indicates it is valid
message_invalid_reason	VARCHAR2	1000			The reason for the invalidity of the message
timestamp	DATE		Not Null		The date and time at which the entry was made

iTPS Tables

cust_dn_mapping

This table maps the Distinguished name of the customer signing certificate to the bank's internal customer reference number.

Figure 1-19 iTPS table cust_dn_mapping

Column Name	Type	Size	NULL	Key Information	Description
dn	VARCHAR2	1024	Not Null	PK	This is the subject distinguished name of the customer's signing certificate
cust_id	VARCHAR2	36	Not Null		This is the bank's internal customer reference number that is associated with the customer's signing certificate subject dn.

eleanor_reference_map

Maps Eleanor transaction references to Eleanor messages that contain the associated message group id.

Figure 1-20 iTPS table eleanor_reference_map

Column Name	Type	Size	NULL	Key Information	Description
reference	VARCHAR2	36	Not Null		Eleanor transaction reference value.
msggrpId	VARCHAR2	100	Not Null	FK->identrus_data.msggrpId	message group id for the Eleanor message.

error_map

List of Eleanor reason codes and associated reason text

Figure 1-21 iTPS table error_map

Column Name	Type	Size	NULL	Key Information	Description
code	VARCHAR2	6	Not Null		Reason Code
text	VARCHAR2	300	Not Null		Associated reason text that accompanies the reason code
type	VARCHAR2	40	Not Null		The type acknowledgement this reason code is associated with.
status	VARCHAR2	7	Not Null		Indicates whether this reason code is associated with a success or failure state.

payments_log_email

This table records which email is sent to whom.

Figure 1-22 iTPS table payments_log_email

Column Name	Type	Size	NULL	Key Information	Description
time_stamp	NUMBER		Not Null		When the email was sent
subject	VARCHAR2	120			The subject name of the email
toemail	VARCHAR2	120			To whom this email is addressed
fromemail	VARCHAR2	120			The sender of this email
rawemail	LONG				The raw contents of the email data.

payments_raw_in

Records all messages that are sent to iTPS

Figure 1-23 iTPS table payments_raw_in

Column Name	Type	Size	NULL	Key Information	Description
time_stamp	NUMBER		Not Null	PK	Time the message was received by iTPS from Biab
group_id	VARCHAR2	120	Not Null	PK	The msggrpId of the associated message originally received by Biab to which this is a response
message_id	VARCHAR	120	Not Null	PK	The msgId of associated message originally received by Biab to which this is a response
raw_data	LONG				The actual xml data that constitutes the data

payments_raw_out

Records all messages that are sent from iTPS

Figure 1-24 iTPS table payments_raw_out

Column Name	Type	Size	NULL	Key Information	Description
time_stamp	NUMBER		Not Null	PK	The time at which iTPS sent the message to Biab
group_id	VARCHAR2	120	Not Null	PK	The msggrpId from the original Identrus Eleanor message.
message_id	VARCHAR2	120	Not Null	PK	The msgid from the original Identrus Eleanor message.
raw_data	LONG				The actual XML data that constitutes the message.

sc_currency_code

Contain information about currencies that are used in Payment Transactions

Figure 1-25 iTPS table sc_currency_code

Column Name	Type	Size	NULL	Key Information	Description
sc_currcode	VARCHAR2	3	Not Null	PK	The code that represents a currency
sc_currname	VARCHAR2	255	Not Null		The description that describes the currency

sc_currency_code_list

Contains a list of currencies that are linked to a settlement chain.

Figure 1-26 iTPS table sc_currency_code_list

Column Name	Type	Size	NULL	Key Information	Description
sc_currencyname	VARCHAR2	255	Not Null		Currency description that is linked to a specific settlement chain
sc_currencycode	VARCHAR2	3	Not Null		Currency code that is linked to a specific settlement chain

BIAB_Requests

All messages arriving at Biab.

Figure 1-27 iTPS table BIAB_Requests

Column Name	Type	Size	NULL	Key Information	Description
id	NUMBER	22	Not Null	PK	Unique Identifier
timestamp	NUMBER	22			Timestamp reflecting when the message is received
customerid	VARCHAR2	200			The subscriber id
customerdn	VARCHAR2	1024			The DN of the subscribing customer
type	VARCHAR2	40			The type of the message, e.g "xPx"
reference	VARCHAR2	100			Bank Reference associated with the message
sfireference	VARCHAR2	100			SFI reference if any associated with the message
msggrpId	VARCHAR2	120			The Message Group id from the message
msgid	VARCHAR2	120			The Message id of the message
messagetype	VARCHAR2	50			The doctype of the message
scheme	VARCHAR2	7			The payment scheme, i.e. Eleanor
lastack	VARCHAR2	40			The type of the last acknowledgement that was sent in response to this message
ackid	VARCHAR2	22			This identifies the actual response that was sent
message	LONG	LONG			The xml message content

BIAB_Responses

All messages sent from Biab.

Figure 1-28 iTPS table BIAB_Responses

Column Name	Type	Size	NULL	Key Information	Description
id	NUMBER	22	Not Null	PK	A Unique Identifier
requestid	NUMBER	22		FK	The id of the related request
timestamp	NUMBER	22			the timestamp when the response was sent
type	VARCHAR2	40			The type of the response, e.g. PayInst
username	VARCHAR2	40			The name of the user who initiated the response
reference	VARCHAR2	40			Bank reference if provided
message	LONG	LONG			The XML message content

Configuration Pre-requisites

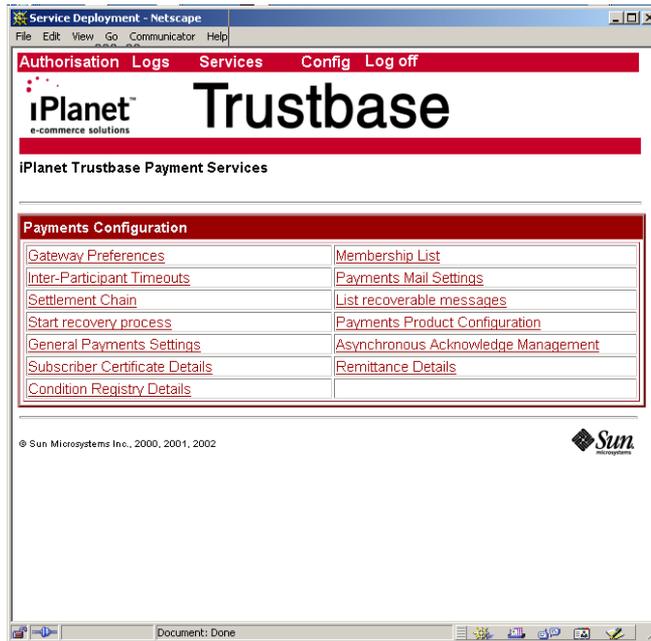
iTTM and iTPS, and all their associated components such as iAS and iWS, should be running while configuring services within iTTM. Thus, you must make sure the following software is up and running in the order specified

1. Oracle 8.1.7
2. nCipher HSMs on all machines
3. iMQ for Java 2.0 on both the Buyer and Seller Bank machines
4. Bank in a Box and iWS 6.0 on the Buyer and Seller Bank machines
5. Bank in a Box administration tool server and iWS 6.0 on the Buyer and Seller Bank machines
6. iTPS on the Buyer and Seller machines
 - a. iWS 6.0 SP1 on both the Buyer and Seller Bank machines
 - b. iAS 6.0 SP3 on both the Buyer and Seller Bank machines
 - c. iTTM 3.0.1 on both the Buyer and Seller Bank machines
7. JMQ Proxy on both the Buyer and Seller Bank machines
8. Buyer web site (BFI) web server
9. Tooledup Seller web site web server
10. Condition Management Website
11. Obligation Management Website

System Configuration

iPlanet Payment Services Configuration can be accessed from the following menu

Figure 1-29 Payment Main Menu

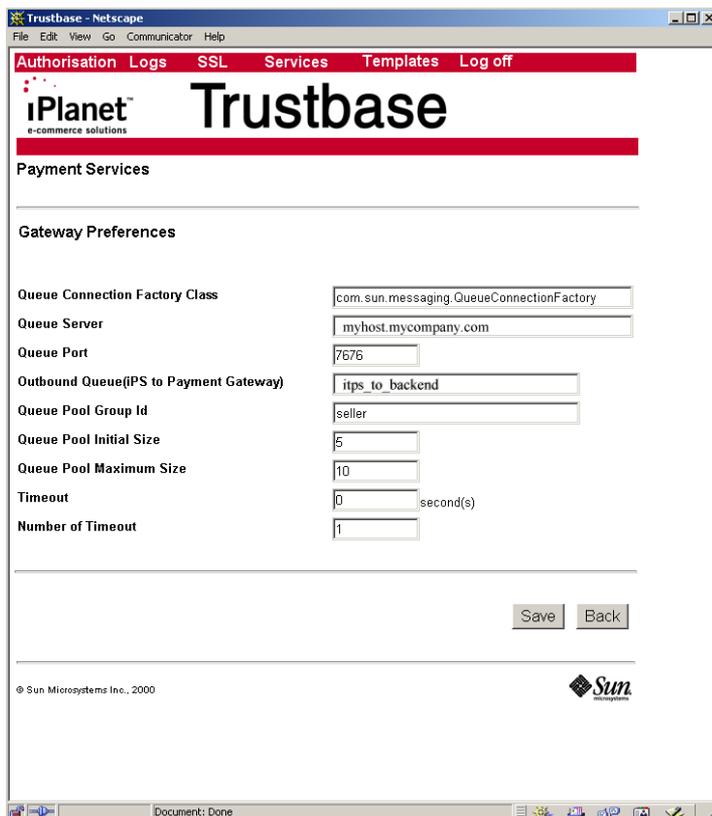


Payment Gateway Preferences

The system administrator may configure

- The JMS queue identifiers used to communicate with the payment gateway.
- The timeout to be used when communicating with the payment gateway.

Figure 1-30 Payment Gateway Preferences Screen



This is already configured from the original installation and is set here as the default.

- · Outbound Queue may not be empty

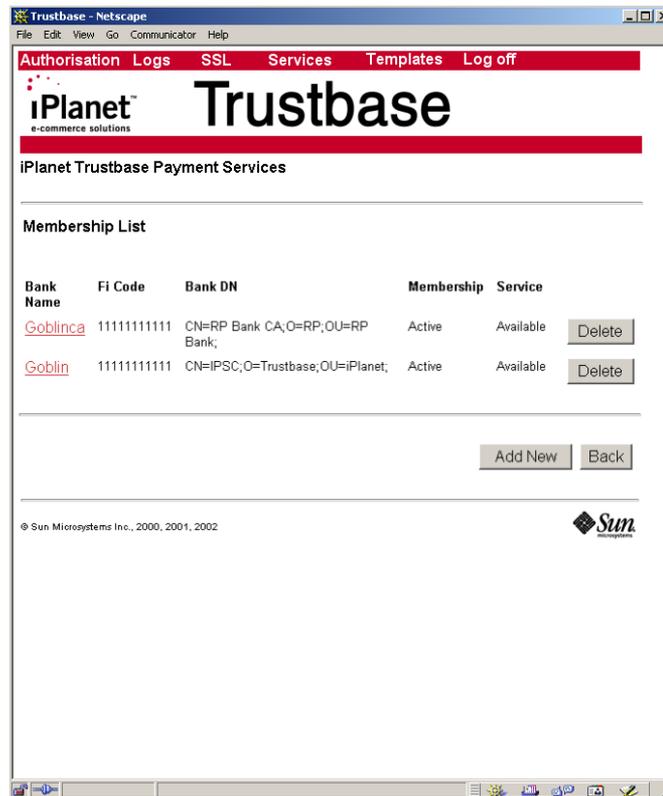
- **Timeout** is how long you are prepared to wait for a response when you send a message to your JMS queue. 0 is the default and this means it waits indefinitely until it gets a response.
- **Number of Timeouts** is the number of times you send a message to a queue to get a response. When the timeout is set to 0 it does not matter what you enter here.

Scheme Membership List

The system administrator may add, modify or delete entries from the Scheme Membership List.

If you want to use asynchronous acknowledgements you must populate the membership screens even if the membership is switched off. The membership entries allow iTPS to route acknowledgements to the F.I.

Figure 1-31 Membership List



1. The membership entry must be made for both the member's issuing certificate (L1CA) and its inter-participant signing Certificate (L1IPSC). Use `tokenkeystoretool` on the member's Financial Institution installation to view the required Certificate DN's. You will also need your own financial institution's details entered into the membership screen so that iTPS is set-up to be able to recognise itself. Asynchronous acknowledgements will fail if these entries are not present.

- a. Type the following preparatory commands

```
./opt/itfm/Scripts/runtokenkeytool
```

- b. Open the store

```
openstoremanager -domainspace "file:///itps-cpi/store" -manager local
```

```
setdefaultstore -manager local -store identrus
```

- c. For the verification certificate, type

```
listcerts
```

- d. For the Signing Certificates, type

```
listkeys
```

2. When the user clicks on a bank name, the Scheme Member Details screen is shown. When the user clicks the <delete> link, a confirmation dialog is displayed and, if confirmation is given, the corresponding entry is removed from the list. When the user clicks on the <add a new entry> link, the same Scheme Member Details screen is shown with empty fields.
3. On submission, the Scheme Member Details form is validated according to the following rules:
 - Bank Name needs to be present
 - Comment is optional
 - FI Code needs to be present. FI Code needs to be 11 digits.
 - CUG ID needs to be the membership scheme e.g. Eleanor.
 - Routing URI needs to be present and a valid URI according to RFC 2396.
 - Bank Distinguished Name and Issuer Distinguished Name needs to be present and have a valid distinguished name according to RFC 2253. This the DN and Issuer DN of the L1IPSC as copied from the `cert_table` within Trustbase schema.

- Date is checked.

Figure 1-32 Member Details

The screenshot shows a web browser window titled "Trustbase - Netscape". The browser's address bar and menu bar are visible. The page content includes a navigation bar with links for "Authorisation", "Logs", "SSL", "Services", "Templates", and "Log off". Below this is the iPlanet logo and the "Trustbase" title. The main heading is "iPlanet Trustbase Payment Services".

The "Membership List" section contains the following form fields:

- Bank Name:** IP Bank
- Comment:** (empty)
- FI Code:** 12345678901
- CUG ID:** Eleanor
- Routing URL:** https://rainstorm.uk.sun.com
- Bank Distinguished Name:** C=GB,CN=IP Bank CA,O=IP,OU=IP Bank,
- Issuer Distinguished Name:** C=GB,CN=Identrus Root CA,O=Identrus,O
- Effective Date:** 2001/8/14 (format: yyyy/mm/dd)
- Membership Status:** Active (dropdown menu)
- Service Status:** Available (dropdown menu)

At the bottom of the form are "Save" and "Back" buttons. The footer of the page includes the copyright notice "© Sun Microsystems Inc., 2000" and the Sun Microsystems logo.

Membership Status can be one of

- Active
- Pending

- Suspended
- Terminated

Service Status determines whether the member is still operating within the scheme. Members can be:

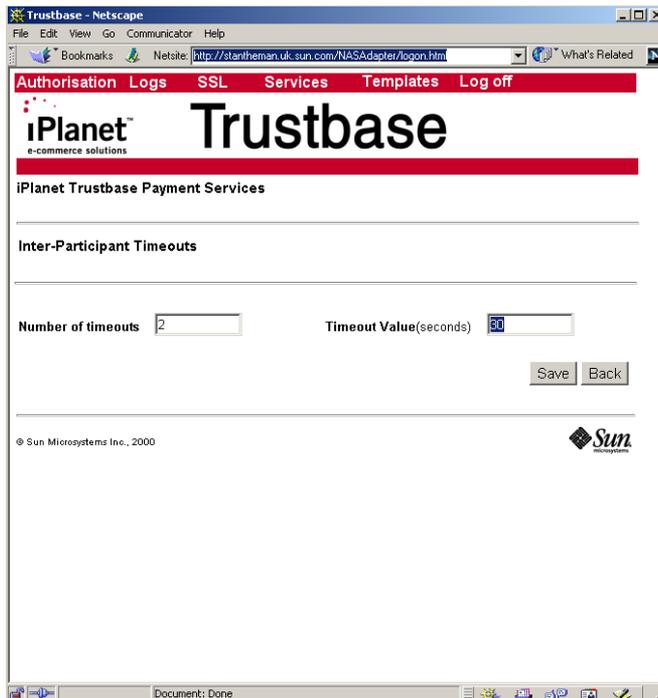
- Available
- Unavailable

To enable membership checking for this iTPS use the screen “General Payment Settings,” on page 71

Inter-Participant Timeouts

The system administrator may configure the timeout values used when communicating with other Scheme participants.

Figure 1-33 Inter-Participant Timeouts Screen



These parameters determine how often you need to retry sending an interbank message. there are two values: (a) Timeout value: the length of time one waits before sending an interbank message again (b) Number of timeouts: the number of times one keeps retrying to send the interbank message. The Timeout value can be greater than 0. If set to 0, then Timeout is considered infinite. This can be left as the default and under normal circumstances does not need to be changed.

Payments Mail Settings

Configuring the settings for all outgoing messages sent by email used primarily for asynchronous acknowledgement emails and for Payment condition status update emails. Mail filters are provided to allow you to define the appearance of your messages. XLTS Static files are references in these filters to map Eleanor messages onto HTML.

Figure 1-34 Payments Mail Settings

The screenshot shows a Netscape browser window displaying the Trustbase configuration interface. The page title is "Trustbase - Netscape". The navigation menu includes "Authorisation", "Logs", "Services", "Config", and "Log off". The main content area is titled "iPlanet Trustbase Payment Services" and contains three sections for configuring email settings:

- Payments Mail Settings:**
 - SMTP Host:
 - From Email Address:
- Asynchronous Mail:**
 - Email subject filter location:
 - Email body filter location:
- Condition Registry Mail:**
 - Email subject filter location:
 - Buyer/Seller Email body filter location:
 - CDP Email body filter location:

At the bottom of the configuration area, there are "Save" and "Cancel" buttons. The footer of the page includes the copyright notice "© Sun Microsystems Inc., 2000, 2001, 2002" and the Sun logo.

Settlement Chain

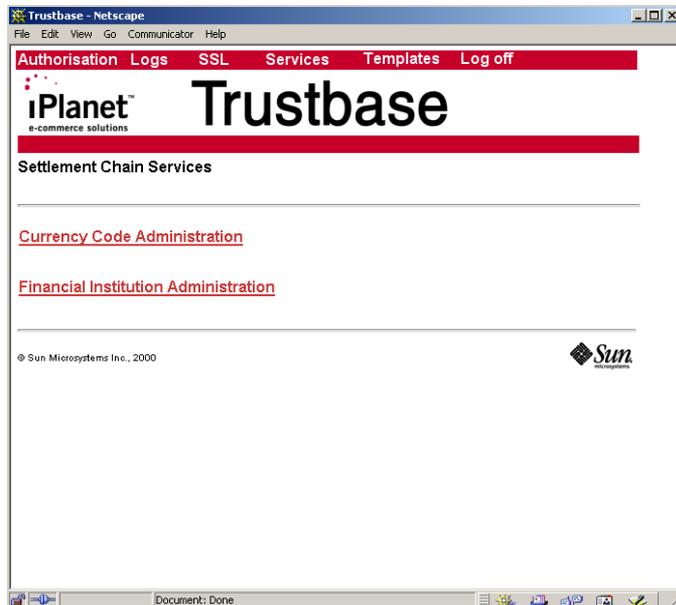
Before making payments, a currency settlement chain needs to be established. This requires, in the first instance, deciding which financial institution you want to use to accept payments in a particular currency. You can then

1. Select a currency
2. Assign it to the financial institution (provided the financial institution can trade in that currency)
3. Finally add it to your currency settlement chain.

In some instances you may want payment initiation messages to be settled in many different currencies. Under such circumstances, iPlanet Trustbase Payment Services needs to be configured to accept a number of financial institutions that are used to settle payments in a variety of currencies.

1. Select <Services><Payments><Settlement Chain>

Figure 1-35 Settlement Chain Main Menu



Settlement chains are used by the SFI to inform the BFI of where to make payment if the currency supplied in the transaction cannot be accepted by the SFI directly. Under these circumstances a chain of F.Is is then created and added to the payment details to allow conversion of the payment into a currency that the SFI can accept.

2. There are four steps for adding a currency to the payment settlement chain:
 - a. First select <Financial Institution Administration> assign the account number of the institution that is to settle your currency

Financial Institution Administration

The screenshot shows a Netscape browser window displaying the Trustbase web application. The page title is "Trustbase - Netscape" and the URL is "http://starheiman.uk.sun.com/NAS/Adm/instadmin.htm". The page has a navigation bar with "Authorisation", "Logs", "SSL", "Services", "Templates", and "Log off". The main content area is titled "iPlanet Trustbase" and "Settlement Chain Services".

The "Financial Institution Administrator" section contains the following form fields:

- FI Code:
- FI Location:
- FI Code Type:
- Account Number:
- Currency Code:
- Settlement Role:
- Address:
- City:
- Postal Code:
- State:
- Country:

The "Current Selected Financial Institution" section displays a table with the following data:

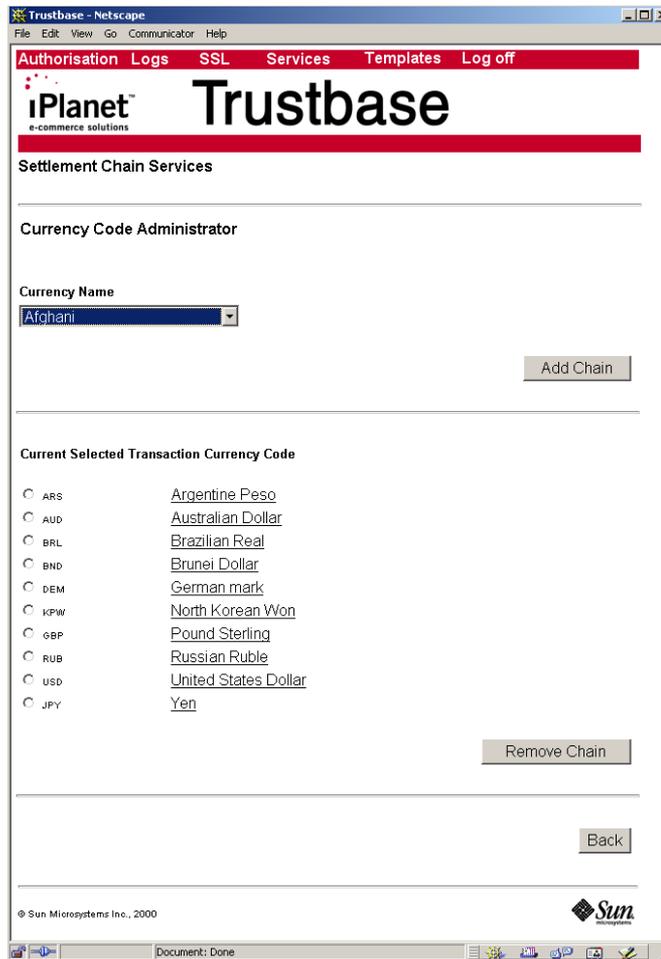
FI Code	Settlement Role	Account Number	Account Number Currency Code
BarE001	Beneficiary Institution	0123456789	GBP

At the bottom of the form, there are "Save" and "Remove" buttons.

The SFI settlement role is always set to the Beneficiary Institution. Each financial Institution entered may be entered several times for different currencies and associated accounts into which to place the payment.

- b. Second, define the currencies that can be accepted through this SFI. Select <Currency Code Administration>. Each currency code must have at least the SFI associated with the currency, effectively making a settlement chain of one financial Institution, itself.

Figure 1-36 Currency Code Administration



3. Adjusting some of the data that appears in some of the tables can be done via the Oracle tables that are installed via the SQL script

```
/opt/ittm/current/Config/sql/PaymentsNew.sql
```

The following table may need to be reconfigured:

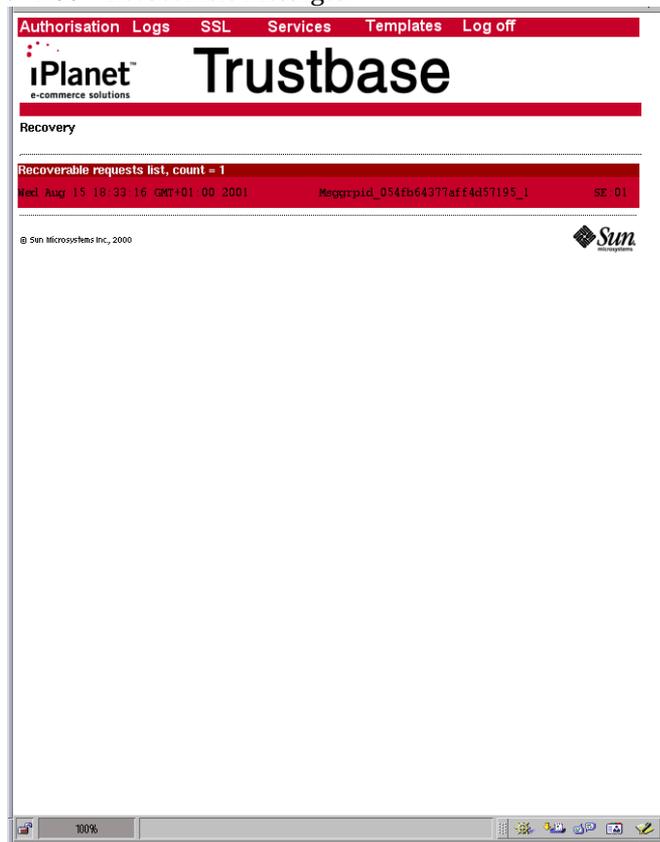
- **SC_CURRENCY_CODE_LIST** - This contains all the possible currency codes that a user can select from when forming a chain or creating a transaction currency code.

Payment Recovery

iTPS provides the facility to re-present a payment request in the event that it failed on the first attempt. This can occur for example, if the buyers financial institution is not contactable at the time of the payment request.

By select the <List Recoverable messages> from the payments menu, any transactions that started but failed to complete will be listed, as shown below.

Figure 1-38 Recoverable Messages



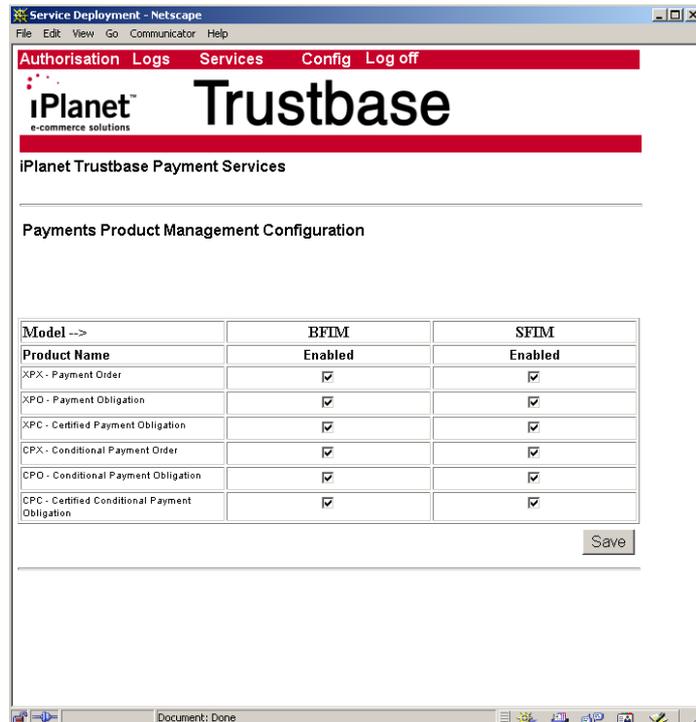
To initiate a recovery, select the <Start recovery process> option from the payments menu. This may take some time as it re-presents any recoverable payment requests through the system. Upon completion a list of recovered transactions is displayed, as shown below.

Figure 1-39 Recovered messages



Payments Product Configuration

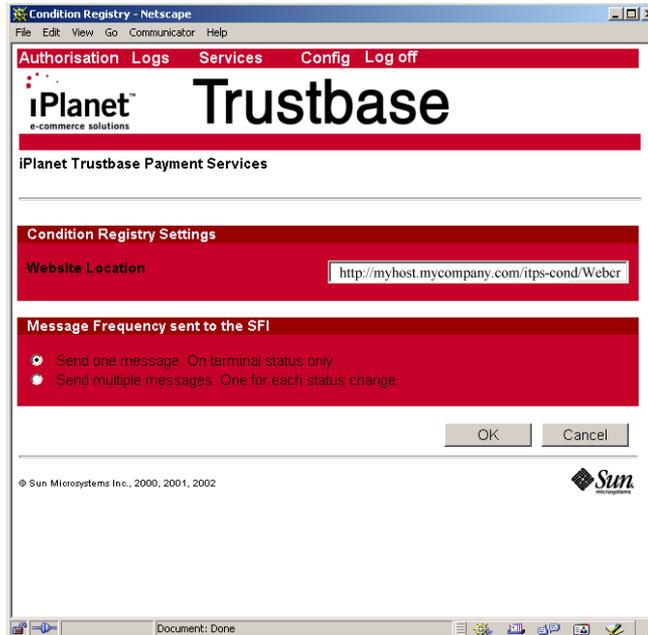
Figure 1-40 Payment Products screen



iTPS will accept that a particular payment product if the enabled checkbox is set to true else an acknowledgement message will be returned stating that this payment is not supported.

Condition Registry

Figure 1-41 Condition Registry Screen



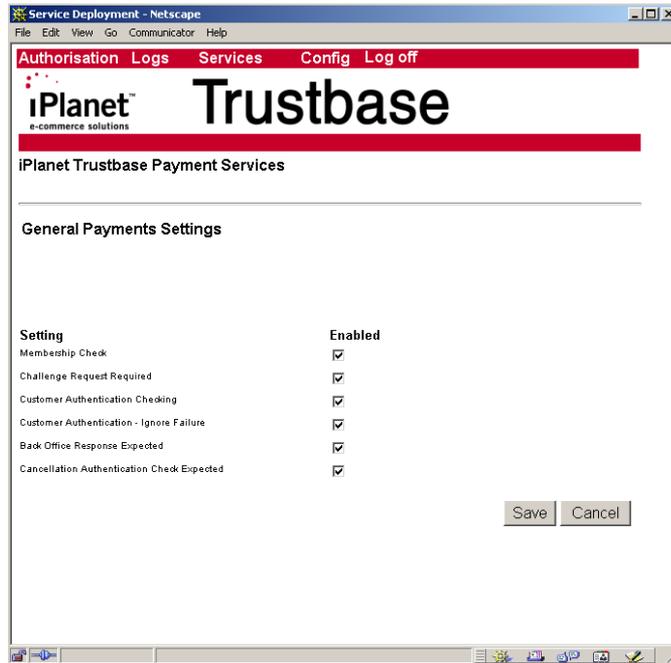
Enter Website location. This sets the location of the Condition Management Website. For instance,

`http://myhost.mycompany.com/itps-cond/Webcr`

Message frequency sent to the SFI. Everytime a condition is discharged you can select the option that allows you to send a message to the SFI on every single condition. Alternatively, you can choose to send one message when all conditions have been discharged.

General Payment Settings

Figure 1-42 General Payment Settings



Membership Check are performed if enabled. In the even you are not a member an acknowledgement message is sent back saying that the Financial Institution is not part of the scheme.

Challenge Request Required. Before a payment request is sent from one financial institution to another there is an ability to send a challenge request to that financial institution to ascertain the validity and credentials of that financial institution.

Customer Authentication Checking. When a customer sends a message to a bank, before proceeding, the bank can authenticate the customer. If enabled and the financial institution is not on the list, authentication fails. If not enabled and not on the list the financial institution may still not get authenticated. See also Subscriber Details Screen.

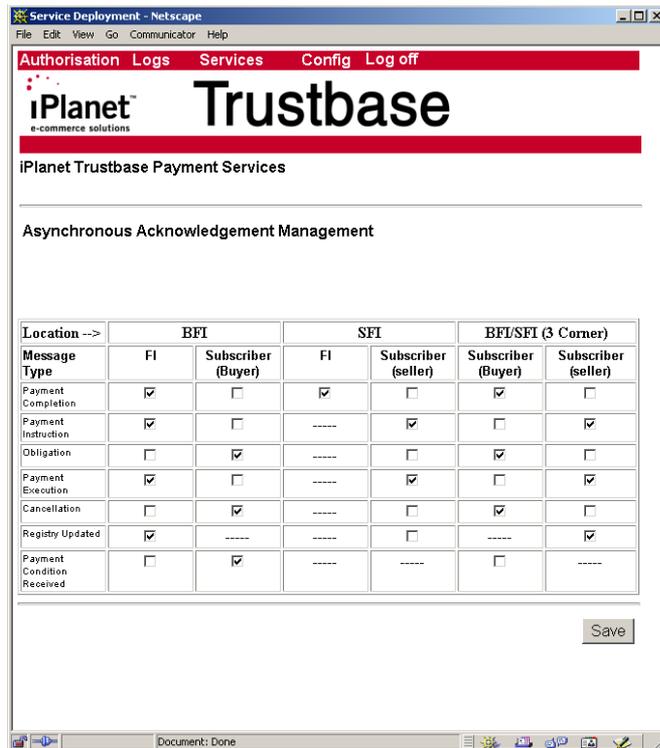
Customer Authentication - Ignore failure

Back Office Response expected. If enabled the back office system returns synchronously to payment requests. If disabled Back Office/ Biab Back end does not return a synchronous acknowledgment. The synchronous message will be issued from iTPS.

Cancellation Authentication Check Expected. If enabled this requires that the same certificates (both buyer and seller) that signed the payment request must be used to cancel that payment request.

Asynchronous Acknowledge Management

Figure 1-43 Asynchronous Acknowledge Management Screens



This decides who receives and sends asynchronous messages. If the check box is enabled this indicates that the particular financial institution under consideration sends a message. There are three main columns

- BFI is the Buyers financial institution making a payment via the four corner model
- SFI is the Sellers financial institution making a payment via the four corner model

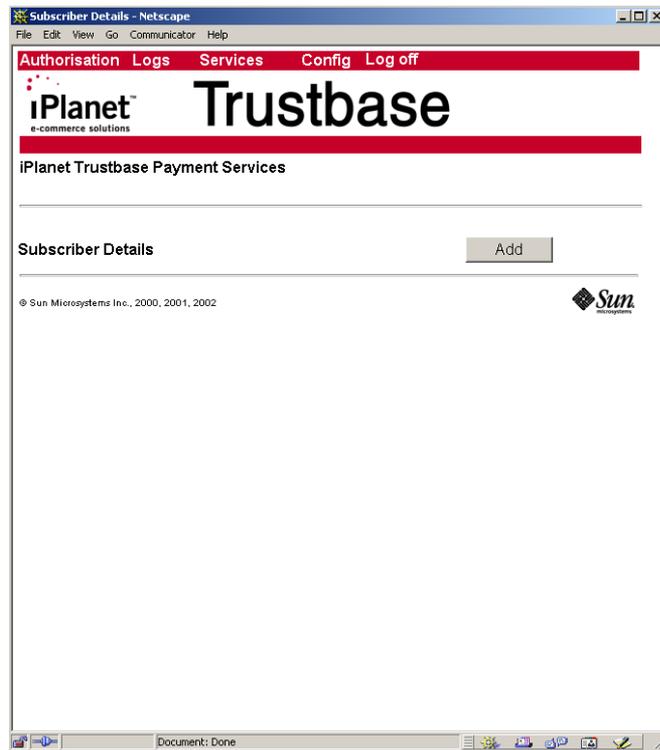
- SFI/BFI is when the seller and buyer are using the same financial institution making a payment via a 3 corner model.

Message types are used to indicate what stage the message has reached within each payment product.

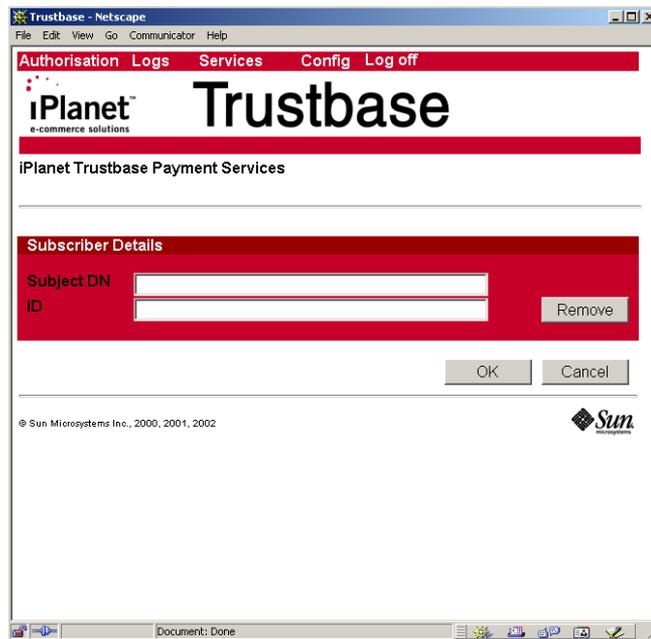
Subscriber Details

Authorising Customers to the payment services is achieved by matching certificate name details. Upon successful match it assigns the customer with a customer ID. This is different from iPlanet Trustbase Transaction Manager's authorisation facility as iTPS has individual authorisation rather than generic corporate authorisation.

Figure 1-44 Subscriber Details



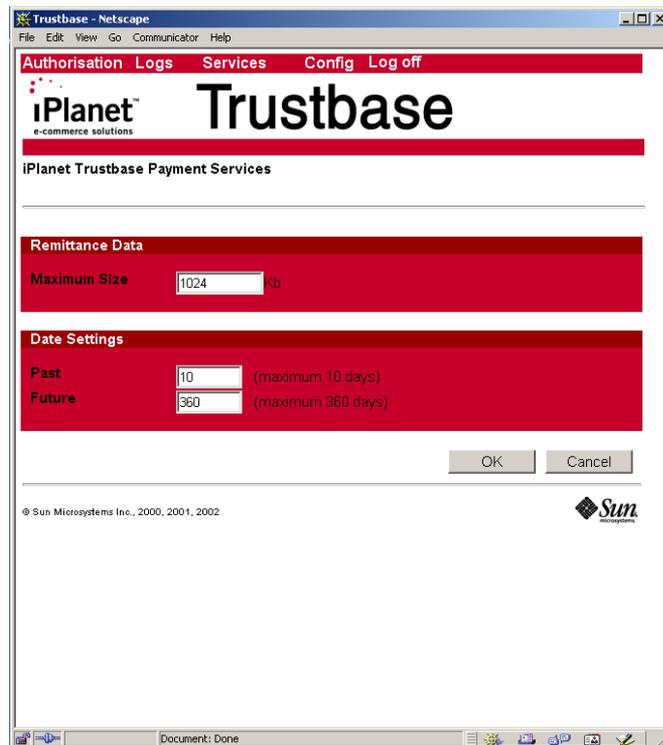
Select <Add>

Figure 1-45 Subscriber Details Add Screen

This screen maps the customer subject DN to a bank defined subscriber identifier. This subscriber identifier is used to identify the subscriber/customer to the back office systems. This check will be enabled only when the customer Authentication checking is enabled from the <general payment settings> menu option. Note, The customer subject DNs supplied must be uniquely defined within this authorisation list, although different subject DNs can be matched to the same bank defined customer identifier. This allows banks to use the same customer identifiers for groups of users or perhaps to allow a customer to have two smartcards if one is about to expire.

Remittance Details

Figure 1-46 Remittance Details



The screenshot shows a Netscape browser window displaying the Trustbase configuration page. The page has a red header with navigation links: [Authorisation](#), [Logs](#), [Services](#), [Config](#), and [Log off](#). Below the header is the iPlanet logo and the text "Trustbase e-commerce solutions". The main content area is titled "iPlanet Trustbase Payment Services" and contains two sections:

- Remittance Data:** A section with a red background containing a label "Maximum Size" and a text input field with the value "1024" followed by "Kb".
- Date Settings:** A section with a red background containing two rows of settings:
 - "Past" with a text input field containing "10" and the text "(maximum 10 days)".
 - "Future" with a text input field containing "360" and the text "(maximum 360 days)".

At the bottom of the form are "OK" and "Cancel" buttons. The footer contains the copyright notice "© Sun Microsystems Inc., 2000, 2001, 2002" and the Sun Microsystems logo. The browser's status bar at the bottom shows "Document: Done".

Remittance Data is where the bank can set the maximum size of the extra details you can put into a message to describe a payment.

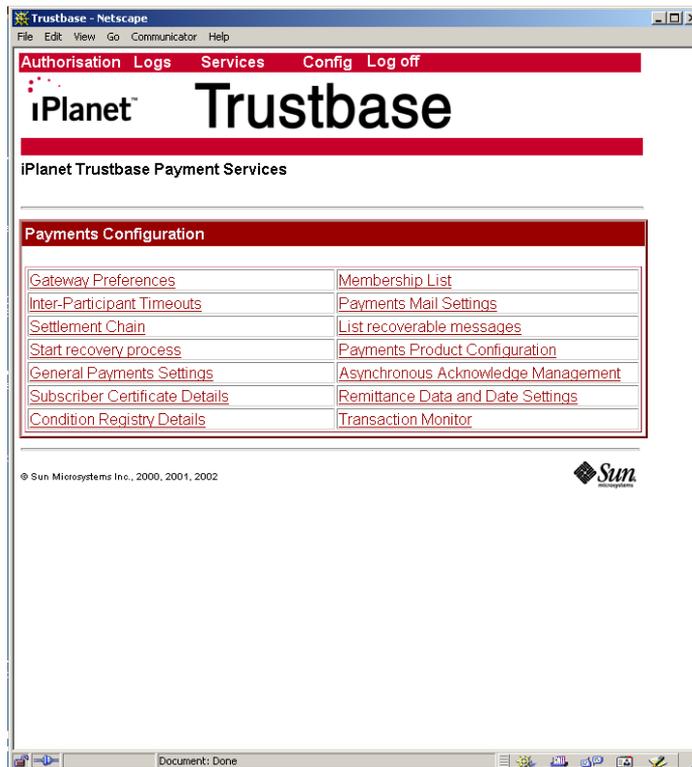
Date Settings specify the dates between which a financial Institution will accept payment requests.

Transaction Monitoring

The Transaction Monitor is a Trustbase component that provides a data logging and tracing interface for the Trustbase administrator. Note iTPS 2.0 beta Patch 3 release or later is required for Transaction Monitoring

1. Select <Services> followed by <Payments>

Figure 1-47 Payments Configuration Main Menu



2. Clicking on the <Transaction Monitor> link takes the administrator to the Transaction Monitor Search and Sort Screen. Transaction Monitor Search screen provides the Trustbase administrator facility to specify Search Attributes and date ranges

Figure 1-48 Transaction Monitor Search Screen

The screenshot shows a Netscape browser window displaying the 'Transaction Monitor Search Screen'. The browser's address bar shows 'Trustbase - Netscape'. The page has a red header with navigation links: 'Authorisation', 'Logs', 'Services', 'Config', and 'Log off'. Below the header, the 'iPlanet Trustbase' logo is visible, with 'iPlanet' in red and 'Trustbase' in black. The main content area is titled 'iPlanet Trustbase Payment Services' and 'Transaction Monitor Search Screen'. Under 'Sort By', a dropdown menu is set to 'EleanorTransactionReference'. The 'Search Dates' section has two rows of date pickers: 'Starting Date (Blank for Today:00:00:00)' and 'End Date (Blank for Today:CurrentTime)'. Each row has seven columns for Day, Month, Year, Hour, Minute, and Second. The 'Search Attributes' section has four rows: 'Eleanor Transaction Reference', 'Product Type', 'Message Type', and 'Sender'. Each row has a dropdown menu set to 'Is' and a text input field. At the bottom right, there are 'Search', 'Reset', and 'Back' buttons. The browser's status bar at the bottom shows 'Document: Done'.

The screen provides

- A Sort by option that fetches results and sorts by using the input as specified from the dropdown by the administrator. The available options are,
 - Eleanor Transaction Monitor

- Message Type
- Sender
- Payments Product Type
- Search Dates and Time option to narrow down the search to the specified duration.
- Search Attributes can be
 - Eleanor Transaction Reference.
 - Product Type
 - Message Type
 - Sender
- In addition there is a drop down box with options as <IS> or <ISNOT> beside the search attributes control if the specified search criteria is an inclusive or an exclusive one.

3. The following Screen illustrates a typical search

Figure 1-49 Example Search

The screenshot shows a Netscape browser window titled "Trustbase - Netscape". The browser's menu bar includes "File", "Edit", "View", "Go", "Communicator", and "Help". The page header features a red navigation bar with "Authorisation", "Logs", "Services", "Config", and "Log off" links. Below this is the "iPlanet™ Trustbase" logo and the text "iPlanet Trustbase Payment Services".

The main content area is titled "Transaction Monitor Search Screen". Under the heading "Sort By", a dropdown menu is set to "EleanorTransactionReference".

The "Search Dates" section contains two rows of date pickers. The first row is for the "Starting Date" (Blank for Today:00:00:00) with values: Day: 10, Month: 10, Year: 2001, Hour: 10, Minute: 15, Second: 10. The second row is for the "End Date" (Blank for Today:CurrentTime) with values: Day: 10, Month: 9, Year: 2003, Hour: 10, Minute: 15, Second: 10.

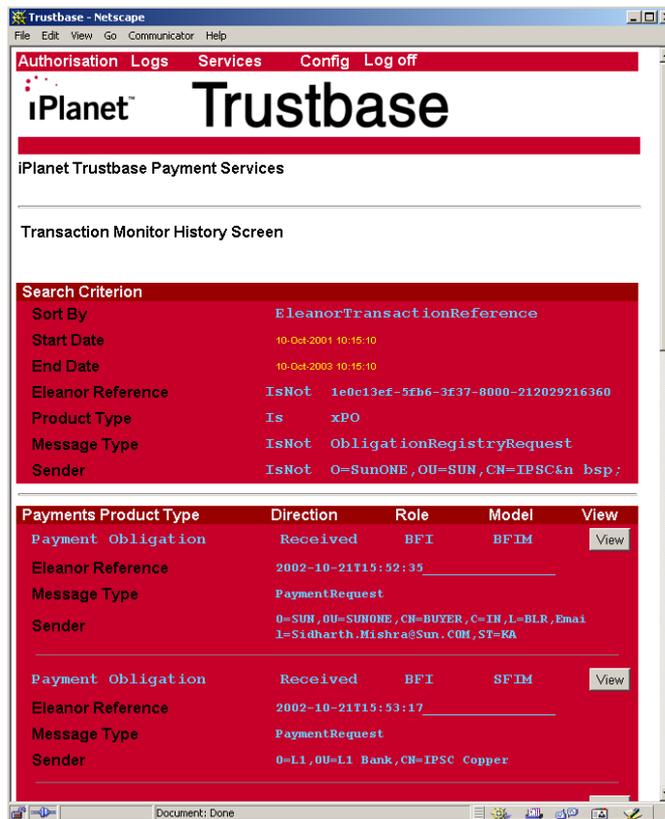
The "Search Attributes" section includes several criteria:

- Eleanor Transaction Reference:** IsNot (dropdown) and 1e0c13ef-5fb6-3f37-8000-212029216360 (text input)
- Product Type:** Is (dropdown) and Payment Order (dropdown)
- Message Type:** IsNot (dropdown) and ObligationRegistryRequest (dropdown)
- Sender:** IsNot (dropdown) and O=SunONE, OU=SUN,CN=IPSC (text input)

At the bottom of the search criteria are three buttons: "Search", "Reset", and "Back". The browser's status bar at the bottom shows "Document: Done".

4. After the Trustbase administrator provides the relevant details, select <Search> takes him to the Transaction Monitor History Screen. Selecting <Back> takes the user to the previous screen.

Figure 1-50 Transaction Monitor History Screen

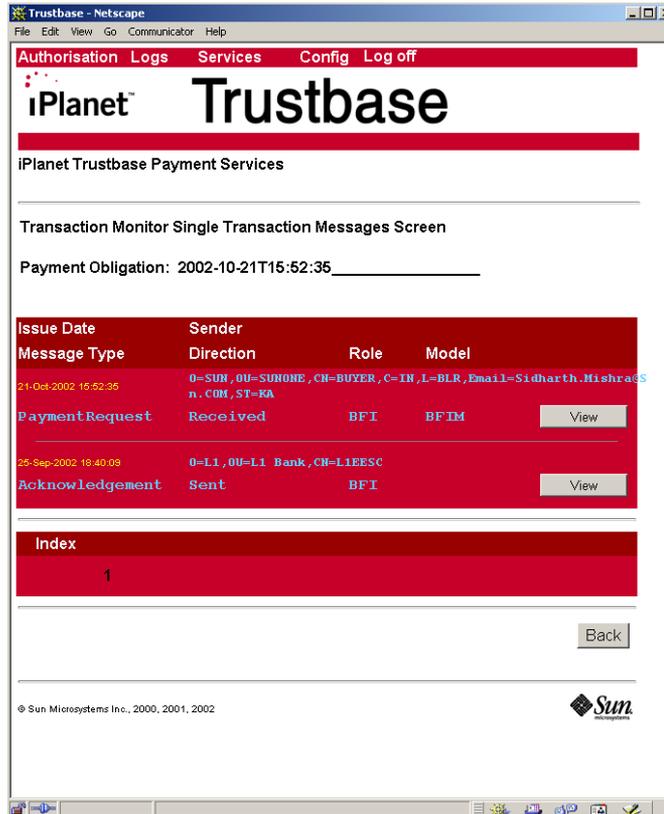


- The records matching the search criteria specified by the administrator are shown for each of the records as following.
 - Payments Product Type : One of the six payments product types.
 - Direction : Received or Sent based on whether incoming or outgoing message.

- **Role** : SFI or BFI, depending on the role of the particular corner.
 - **Model** : SFIM or BFIM if 4 corner, else SFI-3CM or BFI-3CM. Undefined, if not relevant.
 - **Eleanor Reference** : The Eleanor transaction reference number.
 - **Message Type** : The Payment message document type.
 - **Sender** : The subject DN of the sender.
- **Pagination**. There are 10 fetched records shown per page, and the user navigates between pages by clicking on the page numbers at the bottom of the page.

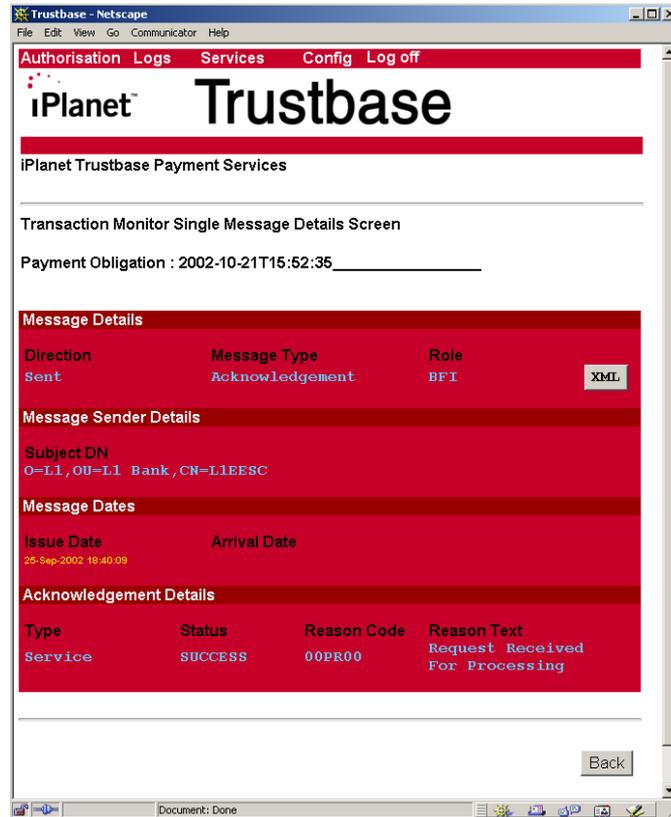
5. Select <view> takes the user to the Single Transaction Messages screen which is described in brief below.

Figure 1-51 Transaction Monitor Single Message Screen



- Select <view> for a particular Message type for the particular transaction and the following screen appears

Figure 1-52 Message type for a particular transaction.



For example, a transaction with PaymentRequest message type will have appropriate details from the Payment Request message in addition to the details such as Direction, Message Type, Role, Sender Details and the Message Dates.

- Finally, selecting <XML> takes the administrator to the Single Message Original XML screen. The <Back> button takes the user to the previous screen. Certificate details have been removed for readability reasons.

Figure 1-53 Message XML details

```

<Acknowledgement>
  <NIB id="NIB_fa24ee06ca3cb8daf00d_1">
    <ContextInfo msggrpid="Msggrpid_fa24ee06ca3cb8daf00d_1" msgjid="BF102"/>
    <StartTime>
      <LocalTime id="LocalTime1_fa24ee06ca3cb8daf00d_1" time="20021021155235Z"/>
    </StartTime>
    <MsgTime>
      <LocalTime id="LocalTime2_6be80968d011fa8631bc_1" time="20020925184009Z"/>
    </MsgTime>
  </NIB>
  <Signature>
    <SignedInfo>
      <CanonicalizationMethod Algorithm="http://search.iETF.org/internet-drafts/draft-ietf-trade-hiroshi-dom"
      <SignatureMethod Algorithm="http://www.w3.org/2000/02/xmldsig#rsa-sha1"/>
      <Reference URI="#NIB_fa24ee06ca3cb8daf00d_1">
        <Transforms>
          <Transform Algorithm="http://search.iETF.org/internet-drafts/draft-ietf-trade-hiroshi-dom-hash-03"
        </Transforms>
        <DigestMethod Algorithm="http://www.w3.org/2000/02/xmldsig#sha1"/>
        <DigestValue>
          ELM8Bv3Gk8Hh iaknDEf64R/81cA=
        </DigestValue>
      </Reference>
      <Reference URI="#ContentAcknowledgement_64EDDD2B5CEA6C4A53ABA1D27C8B59936BF7E99"
      <Transforms>
        <Transform Algorithm="http://search.iETF.org/internet-drafts/draft-ietf-trade-hiroshi-dom-hash-03"
      </Transforms>
      <DigestMethod Algorithm="http://www.w3.org/2000/02/xmldsig#sha1"/>
      <DigestValue>
        02nCU9aM2LBE72Hs7B7Y7Snc2en0=
      </DigestValue>
    </SignedInfo>
  </Signature>
</Acknowledgement>

```

Configuring Users (advanced)

The UserDbTool is used for registration of Seller access to the obligation website, Buyer access to the condition registry website and the ability for a specific buyer to be enabled for conditional payments.

There are commands to create, browse, delete and modify Users, Organisations, and Roles and the associations between them. To start the UserDbTool, run the runuserdbtool script from within the Scripts directory of an iTTM installation

Attributes

Each user needs to be assigned an organisation attribute. Organisations are identified by name, and there are commands to create, delete and view Organisations

```
neworganisation -organisation <organisationname>
```

create a new Organisation. The organisation must be supplied, and may contain spaces if it is delimited by quotes

```
deleteorganisation -organisation <organisationname>
```

delete an Organisation. If there are any Users which belong to the Organisation identified then this command will fail. Users belonging to an Organisation must themselves be deleted or have their Organisational associations changed before an Organisation can be deleted

```
lookuporganisation [ -organisation <organisationname> ]
```

search for an Organisation. If the optional organisation parameter is omitted, then all Organisations are displayed

Roles

Each User has zero or more Roles. A Role determines the rights and privileges that a User has to access information or perform actions in the system. Roles are identified by name, and there are commands to create, delete and view Roles

```
newrole -role <rolename>
```

create a new Role with the given name. The ConditionRegistry recognises the role BUYER [for a Buyer] and BFI [for a BFI agent]. The ObligationRegistry recognises the role SELLER. There is no reason that a User could not have more than one role, for instance a Seller may also be a Buyer

```
deleterole -role <rolename>
```

delete a Role. If there are any Users which have this Role, then their association with the Role will be removed, and the Role will be deleted.

```
lookuprole [ -role <rolename> ]
```

search for a Role. If the optional role parameter is omitted, then all Roles are displayed.

Note, the condition registry website only recognises one role per Smartcard registration therefore a single Smartcard cannot act as a buyer to waive conditions and as a CDP to discharge conditions.

Users

Users are the core entities managed by the UserDbTool. It is the organisational and Role associations of a User that determine what information they can access and what actions they can perform. Users are identified by the Issuer Distinguished Name and Subject Distinguished Name from their digital certificates. There are commands to create, delete, view and update Users

```
newuser -issuer <issuerDN> -subject <subjectDN> -organisation
<organisationName> [ -email <email> ] [ -role <roleName> ]*
```

create a new User. The users Issuer Distinguished Name and Subject Distinguished Name must be supplied, as must the name of an Organisation [which must already have been created]. An email address for conditional payment buyer notification should be assigned if the role will include “BUYER”. This email address allows flexibility if the buyer organisation requires conditional notifications to be a different address to that in the buyer certificate for the payment. Roles can be assigned as either “BUYER” or “SELLER” or both.

```
deleteuser -issuer <issuerDN> -subject <subjectDN>
```

delete a User. The Issuer and Subject Distinguished Names identify the User to delete

```
lookupuser [ -issuer <issuerDN> -subject <subjectDN> ]
```

search for a User. If the optional Issuer and Subject Distinguished Names are not supplied, then all Users will be displayed

```
updateuser -issuer <issuerDN> -subject <subjectDN> [
-organisation <organisationName> ] [ -email <email> ] [
-deleteemail ]

[ -deleterole <roleName> ]* [ -role <roleName> ]*
```

Update a Users entry. The User is identified by the Issuer and Subject Distinguished Names, and the remaining optional parameters identify the Organisation and Role association changes to be carried out.

```
-organisation <organisationName> : change the Users Organisation
association to the named Organisation, which must exist in the
database
```

```
-email <email> : change the Users email address to that supplied
```

```
-deleteemail : remove the Users email address, without supplying
a new one
```

```
-deleterole <roleName> : if the user has the named Role, remove
that associations
```

Configuring Users (advanced)

```
-role <roleName> : add an association to the named Role for the  
User
```

Configuring your Websites

Once you've installed and configured, this chapter shows you how you can configure your individual websites in preparation to running the System

Configuration prerequisites

Before configuring you must bring the individual components up and make sure that the system is actually running. Starting the system must be performed in a particular order otherwise components will fail to communicate properly. The order for starting the system is:

Order for starting the system

1. Oracle 8.1.7
2. nCipher HSMs on all machines
3. iMQ for Java 2.0 on both the Buyer and Seller Bank machines
4. Bank in a Box back end server on the Buyer and Seller Bank machines
5. Bank in a Box administration tool and iWS 6.0 SP1 on the Buyer and Seller Bank machines
6. iTPS on the Buyer and Seller machines
 - a. iWS 6.0 SP1 on both the Buyer and Seller Bank machines
 - b. iAS 6.0 SP3 on both the Buyer and Seller Bank machines
 - c. iTTM 3.0.1 on both the Buyer and Seller Bank machines
7. JMS Proxy on both the Buyer and Seller Bank machines
8. Buyer web site (BFI) Web server
9. Tooledup Seller web site Web server
10. Condition Management web site Web server
11. Obligation Management web site Web server

The following sections provide instructions for configuring your Websites.

iTTM First Time Start Procedure

The following procedure stops the system.

- Logon as root, under a separate window

```
cd /opt/ittm/Scripts
LOGNAME=nobody;export LOGNAME
/opt/ittm/Scripts/stopias
LOGNAME=root;export LOGNAME
/opt/ittm/Scripts/stopias
/opt/ias6/slapd-myhost/start-slapd
/opt/iws6/https-myhost.mycompany.com/start
/opt/iws6/https-admserv/start
./startias
./starttbase
```

iTTM Restart procedure

- Logon as root and run the following shell:

```
/opt/ias6/slapd-myhost/start-slapd
/opt/iws6/https-myhost.mycompany.com/start
/opt/iws6/https-admserv/start
cd /opt/ittm/Scripts
./startias
./starttbase
```

- Logon onto iTTM as follows:

<http://myhost.mycompany.com/NASAdapter/logon.html>

Steps to Configuring your websites

1. Configuring a Conditional Management Website
 - a. Configure your Identrus-Compliant SmartCard.
 - b. Utilise Userdbtool to define buyers. The issuer DN and subjectDN of the users should match those on their Smart Cards. For example,

```
cd /opt/ittm/Scripts
./runuserdbtool
newrole -role BUYER
neworganisation -organisation "CM Website"
    newuser -issuer "CN=BuyerBank
    CA,OU=BuyerBank,O=BuyerBank,C=GB" -subject "CN=Buyer
    Cert,OU=Buyer,O=Buyer,C=GB" -organisation "CM Website" -email
    "buyer1@buyercompany.com" -role BUYER
```

- c. From the iTTM main login menu, Select <Services><Payments><Condition Registry Details> to define Website location, e.g.

http://myhost.mycompany.com:{condwebsite port Nr}/https-cond/Webcr
 - d. From the iTTM main login menu, Select <Services><Payments><Membership List> and Add appropriate F.I. members to the membership list

2. Configuring an Obligation Management Website

a. Identrus Compliant SmartCard.

b. Userdbtool Seller/Buyer where the issuer DN and subjectDN of the users should match those on their Smart Cards.

```
telnet sellerbank.sellercompany.com
cd /opt/ittm/Scripts
./runuserdbtool
newrole -role SELLER
neworganisation -organisation "OM Website"
    newuser -issuer "CN=SellerBank
    CA,OU=SellerBank,O=SellerBank,C=GB" -subject "CN=Seller
    Cert,OU=Seller,O=Seller,C=GB" -organisation "OM Website"
    -email "Seller1@Sellercompany.com" -role SELLER
```

Note. To allow a seller to log into the Obligation Management Website, one must ensure an organisation has been created that matches the SellerName element in the initial PaymentRequest.

c. Select <Services><Payments><Membership List> and Add appropriate F.I. members to the membership list if not already present

3. Biab Admin tool. Go to Back End and use the adduser command to define a new user

```
cd /opt/itps-biab/scripts
./biab -admin
adduser <username> <password>
exit
```

4. Tooled-Up

- a. An Identrus-Compliant Smart Card.
- b. From the ITTM logon screen Select <Services><Payments><Settlement Chain> and assign the appropriate currency to the appropriate F.I.
- c. Update CDP_Issuer_DN, CDP_DN and EMAIL used by the tooledup table CDPCERT manually to match the CDPs smartcard. For example,

```
SQL> update CDPCERT set cdp_dn='CN=CDP1 User,OU=CDP
Admin,O=CDP,C=GB',cdp_issuer_dn='CN=CA User,OU=CA
Admin,O=CA,C=GB', email='cdpuser@mycdphost.com' where
certid=1
```

- d. To add more CDPs one must insert new entries into CDPCERT with ascending CERTIDs and then associate required conditions to the specific CDPs by updating the CERTID column in the CONDITION table. i.e. One or more conditions may be associated with any one CDPCERT entry.

5. BFI

- a. Import Certificate Chain for Buyer in Browser
- b. Select <Services><Payments><Membership List> and Add appropriate F.I. members to the membership list if not already present

You are now ready to proceed to the next chapter “Running the Models,” on page 111

Running the System

Once you've installed and configured, this chapter shows you how you can test your system is up and running correctly and processing payments requests as expected.

Starting the system

Before checking any particular component you must bring the individual components up and make sure that the system is actually running. Starting the system must be performed in a particular order otherwise components will fail to communicate properly. The order for starting the system is:

1. Oracle 8.1.7
2. nCipher HSMs on all machines
3. iMQ for Java 2.0 on both the Buyer and Seller Bank machines
4. Bank in a Box back end server on the Buyer and Seller Bank machines
5. Bank in a Box administration tool and iWS 6.0 SP1 on the Buyer and Seller Bank machines
6. iTPS on the Buyer and Seller machines
 - a. iWS 6.0 SP1 on both the Buyer and Seller Bank machines
 - b. iAS 6.0 SP3 on both the Buyer and Seller Bank machines
 - c. iTTM 3.0.1 on both the Buyer and Seller Bank machines
7. JMS Proxy on both the Buyer and Seller Bank machines
8. Buyer web site (BFI) Web server
9. Tooledup Seller web site Web server
10. Condition Management web site Web server
11. Obligation Management web site Web server

The following sections provide instructions for checking that components are running, starting and stopping each component.

Oracle 8.1.7

Oracle 8.1.7 is a complex product and the instructions are intended as a quick list of items that are useful when trying to determine the status of the Oracle installation. Useful information to check on the installation and make a note of:

Table 1:

Information Type	Example Set-up Value for Oracle 8.1.7
Install directory	Oracle program files: /opt/oracle/app/product/8.1.7/bin Oracle data files: /identrusdb/orcl
Oracle user login	Username: oracle, Password: oracle
Sqlplus - dba admin	Username: sys, Password: change_on_install
Sqlplus - tbase user	Username: tbase, Password: tbase
Operational ports	Oracle ports: 1521
SID	orcl

Useful commands for starting and stopping Oracle. Checking Oracle is running can be performed by looking at the running processes using the process grep or process list commands. If Oracle is not running then you will need to log in as the Oracle superuser and start the Oracle.

Table 2:

Action or check	Command or output
To start server	As oracle user: svrmgrl; connect internal; startup; exit lsnrctl; start; exit
To stop server	As oracle user: lsnrctl; stop; exit svrmgrl; connect internal; shutdown; exit
Processes grep	ps -ef grep oracle
Tables of interest	Auditdata: Contains internal audit information and indicates what the TC has processed. Error: Shows unexpected errors e.g. cannot communicate with Certificate Authority Error_support: Shows any java stack trace associated with the error table.

nCipher

To check that the nCipher is running perform a process list on each machine. If no nFast process is in the list you will need to start the nFast hard server using the appropriate command.

Table 3:

Information Type	Example Set-up Value nCipher
Install directory	/opt/nfast
Operational ports	9000
To start server	nfast start
To stop server	nfast stop
Processes grep	ps -ef grep hard
Process list	nfast 4241 1 0 Mar 05 ? 0:22 ../sbin/hardserver -llogfile nfast 4246 4241 0 Mar 05 ? 0:10 ../sbin/hardserver -llogfile
Documentation	nCipher KeySafe 1.0 http://www.ncipher.com

iMQ for Java 2.0

iMQ for Java 2.0 needs to be started before iTPS can be run. If you have configured iMQ to start automatically upon reboot but have not yet re-started, use the following:

```
# /etc/init.d/jmq start
```

If it becomes necessary to clear out the contents of the queue then start the broker in the following way

```
# /etc/init.d/jmq stop
```

```
# /opt/SUNWjmq/bin/jmqbroker -reset store
```

Other commands regarding queue maintenance, can be found on Pages 109-111 of your iMQ for Java Administrator's guide:

<http://docs.sun.com/db/prod/s1.ipmsgquj>

<http://docs.iplanet.com/docs/manuals/javamq/20/admin.pdf>

Bank in a Box back End

To run the Bank in a Box back end, run the biab script located in the scripts directory. The script accepts the following arguments, although none are required for normal operation

Table 4:

-verbose	verbose output
-debug	debug output
-quiet	only display warnings and errors
-logfile <file>	Specify the name of a file for log output
-admin	Enter user administration mode

If the server was started in admin mode, user management may be performed at the BiaB command line. The following commands are accepted:

Table 5:

adduser <username> <password>	Adds a user to the system
enableuser <username>	Enables a user account
disableuser <username>	Disables a user account
listusers	Displays a list of user accounts
version	Displays the version of the software

Bank in a Box Back End can be started as follows:

```
bash-2.03# ./opt/itps-biab/scripts/biab -debug
[AUDIT] Starting BIAB [V1.0-1001500003703-18]
```

Bank in a Box administrator tool

The Bank in a Box administrator tool is a Web server application running on iAS 6.0. To check that the Web Server is running use the `grep` command given below. If the server is not running then start the admin server and use the tools within the `adminsver` to manage the web server

Table 6:

Information Type	Example Set-up Value iws6
Install directory	<code>/opt/iws6</code>
Administration logon	Username: <code>iwsadmin</code> , Password: <code>*****</code>
Operational ports	Server: <code>80</code> , Admin: <code>8888</code>
To start server	<code>/opt/iws6/https-myhost.mycompany.com/start</code>
To stop server	<code>/opt/iws6/https-myhost.mycompany.com/stop</code>
To start admin server	<code>/opt/iws6/https-admin/start</code>
To stop admin server	<code>/opt/iws6/https-admin/stop</code>
Processes <code>grep</code>	<code>ps -ef grep iws</code>
Process list	<code>nobody 9876 1 0 12:52:08 0:00 ./uxwdog -d /opt/iws6/https-myhost.mycompany.com/config</code> <code>nobody 9877 9876 0 12:52:08 0:01 ns-httpd -d /opt/iws6/https-myhost.mycompany.com/config</code> also <code>/opt/iws6/https-admin/config</code> if the admin is running
Install logs	<code>/opt/iws6/setup/WebServer/</code>
Log directory	<code>/opt/iws6/https-myhost.mycompany.com/logs</code>
Document root	<code>/opt/iws6/docs</code>
Installation and Configuration Documents	<code>http://docs.sun.com/source/816-5683-10/index.html</code> <code>http://docs.sun.com/source/816-5682-10/index.html</code>
To access the site	<code>http://myhost.mycompany.com/https-tdup/logon.html</code>

iTPS

The iTPS is reliant on three components running:

- iWS 6.0 SP1
- iAS 6.0 SP3
- iTTM 3.0.1

If all these components have been started correctly then the iTPS component should be available. To check to ensure that the components are running, use the grep commands shown in the tables below. If iTTM is running, but iAS is not, shutdown the iTTM and restart the components starting with iAS 6.0.

iWS 6.0 SP1**Table 7:**

Information Type	Example Set-up Value iWS6 SP1
Install directory	/opt/iws6
Administration logon	Username: iwsadmin, Password: identrus
Operational ports	Server: 80, Admin: 8888
To start server	/opt/iws6/https-myhost.mycompany.com/start
To stop server	/opt/iws6/https-myhost.mycompany.com/stop
To start admin server	/opt/iws6/https-admin/start
To stop admin server	/opt/iws6/https-admin/stop
Processes grep	ps -ef grep iws
Process list	nobody 9876 1 0 12:52:08 0:00 ./uxwdog -d /opt/iws6/https-myhost.mycompany.com/config nobody 9877 9876 0 12:52:08 0:01 ns-httpd -d /opt/iws6/https-myhost.mycompany.com/config also /opt/iws6/https-admin/config if the admin is running
Install logs	/opt/iws6/setup/WebServer/
Log directory	/opt/iws6/https-myhost.mycompany.com/logs
Document root	/opt/iws6/docs
Installation and Configuration Documents	http://docs.sun.com/db/prod/s1.websrv60

iAS 6.0**Table 8:**

Information Type	Example Set-up Value for iAS6.0
Install directory	/opt/ias6
Administration logon	Username: admin, Password: password
Operational ports	Directory Admin: 20000, kas admin:10817, Directory server: 389
To start server	/opt/ittm/Scripts/startias
To stop server	/opt/ittm/Scripts/stopias
Installation logs	/opt/ias6/setup/
Processes grep	ps -ef grep ias To get just the 'kiva' processes (the ones that do the jvm work) do a ps -ef grep k.s
Process list	root 10066 10064 0 14:33:21 0:03 /opt/ias6/ias/bin/.kjs -cset CCS0 root 10059 9504 0 14:33:16 pts/6 0:00 /opt/ias6/ias/bin/.kas root 9504 1 0 12:47:38 pts/6 0:00 /bin/sh /opt/ias6/ias/bin/kas root 10070 1 0 14:33:25 0:00 /bin/sh /opt/ias6/ias/bin/kcs -cse t CCS0 -eng 2 root 10064 1 0 14:33:21 ? 0:00 /bin/sh /opt/ias6/ias/bin/kjs -cset CCS0 -eng 1 root 1061 1 0 14:33:19 ? 0:00 /bin/sh /opt/ias6/ias/bin/kxs -cset CCS0 -eng 0 root 10072 10070 0 14:33:25 ? 0:00 /opt/ias6/ias/bin/.kcs -cset CCS0 -eng 2 root 10062 10061 0 14:33:19 ? 0:01 /opt/ias6/ias/bin/.kxs -cset CCS0 -eng 0 nobody 8174 1 0 12:45:04 ? 0:04 ./ns-slapd -f /opt/ias6/slapd-unix d02/config/slapd.conf -i /opt/ias6/slapd-<Machine-name> (check?)
Logged processes	kxs_0_CCS0: Contains information about the incoming message and the plugin start and stop kjs_0_CCS0: Contains the standard out from any running java process – can contain some debug information.
Installation Document	http://www.iplanet.com/products/infrastructure/app_servers/index.html

iTTM 3.0.1**Table 9:**

Information Type	Example Set-up Value for iTTM 3.0.1
Install directory	/opt/ittm
Administration logon via web	Username: administrator, Password: administrator
Certificate manager	/opt/ittm/Scripts/runtokenkeytool
Operational ports	Admin via web: 80 (http://myhost.mycompany.com/NASAdapter/logon.html)
To start server	/opt/ittm/Scripts/starttbase
To stop server	/opt/ittm/Scripts/stoptbase
Property file location	/opt/ittm/myhost/*.properties
Processes grep	ps -ef grep java
Process list	root 9658 1 0 12:47:48 pts/6 0:04 /usr/bin/../java/bin/../jre/bin/../bin/sparc/native_threads/java uk.co.jcp.app. root 9713 1 0 12:47:53 pts/6 0:08 /usr/bin/../java/bin/../jre/bin/../bin/sparc/native_threads/java uk.co.jcp.tbas root 9790 1 0 12:48:03 pts/6 0:12 /usr/bin/../java/bin/../jre/bin/../bin/sparc/native_threads/java uk.co.jcp.secu
Installation Document	http://docs.sun.com/source/816-6283-10/index.html http://docs.ipplanet.com/docs/manuals/trustbase/3.0.1/icg/contents.htm

Enabling iMQ for Java

1. If not already running, in a separate window start the iMQ message queue:

```
/opt/SUNWjmq/bin/jmqbroker -tty
```

Other commands, such as resetting the queue, can be found on Pages 109-111 of your iMQ for Java Administrator's guide:

<http://docs.iplanet.com/docs/manuals/javamq/20/admin.pdf>

Buyer and Seller Web applications

These Web applications are both deployed on top of the iWS 6.0 installations on the Buyer and Seller Web site machines. In order to check that these applications are available, use a browser to go to the appropriate URL.

Table 10:

Information Type	Example Set-up Value iWS6.0 SP1
Install directory	/opt/iws6
Administration logon	Username: iwsadmin, Password: identrus
Operational ports	Server: 80, Admin: 8888
To start server	/opt/iws6/https-myhost.mycompany.com/start
To stop server	/opt/iws6/https-myhost.mycompany.com/stop
To start admin server	/opt/iws6/https-admin/start
To stop admin server	/opt/iws6/https-admin/stop
Processes grep	ps -ef grep iws
Process list	nobody 9876 1 0 12:52:08 0:00 ./uxwdog -d /opt/iws6/https-myhost.mycompany.com/config nobody 9877 9876 0 12:52:08 0:01 ns-httpd -d /opt/iws6/https-myhost.mycompany.com/config also /opt/iws6/https-admin/config if the admin is running
Install logs	/opt/iws6/setup/WebServer/
Log directory	/opt/iws6/https-myhost.mycompany.com/logs
Document root	/opt/iws6/docs
Installation and Configuration Documents	http://docs.sun.com/db/prod/s1.websrv60
Accessing the Buyer Website	http://myhost.mycompany.com/itps-bfi/logon.html
Accessing the Seller Website	http://myhost.mycompany.com/itps-tdup/logon.html

If the Web Servers are not running then use the process grep (on the host machine) to check that the web server is running. If the Web Server process is not running then start the webserver using the admin console.

Running the Models

We now describe how to run the system for each main kind of Payment Model

Running the Three Corner Model

In this situation the Buyer's Bank is the same as the Seller's Bank, i.e. the buyer and the seller have both been issued with certificates from the same Financial Institution.

1. User interfaces with the Seller's Website, in this case TooledUp, and initiates a payment
2. Payment Message gets sent to the iPlanet Trustbase Payment Services Server
3. iPlanet Trustbase Transaction Manager informs its backend system or in this example Bank in a Box.
4. Bank in a Box then sends confirmation of payment to TooledUp
5. The status of this payment initiation is returned back to the seller and hence buyer.

Running the Four Corner Model (SFIM)

1. Buyer interfaces with Seller's Website, in this particular instance TooledUp, and initiates a payment.
2. Payment Message gets sent to iPlanet Trustbase Payment Services Server at the Seller's Bank informs its back end systems that in turn informs the Buyers Bank.
3. Buyers Bank informs back end system, in this case Bank in a Box.
4. A response is returned to its financial institution
5. The SFI on receiving the response from the BFI informs its back end systems and response gets sent to the Sellers Website confirming payment.

Making a Payment via the Buyers Bank (BFIM)

1. If the Subscriber signed data is signed by the Buyer then
 - a. Buyer initiates payment from the Buyers Bank Website
 - b. Payment Message is sent to iPlanet Trustbase Payment Services that in turn informs the Buyers Bank back end systems.
 - c. Response gets returned to Buyers Bank Website
2. If the seller has signed the subscriber signed data then
 - a. Buyer initiates payment from the Buyers Bank Website
 - b. Payment Message is sent to iPlanet Trustbase Payment Services that in turn informs the Buyers Bank back end systems.
 - c. The BFI informs the seller's SFI
 - d. The SFI informs its back end systems
 - e. Response sent back to the BFI
 - f. BFI responds back to the buyer

NOTE More Information about how each payment scheme defines its Models and Payment products can be found at <http://www.identrus.com>

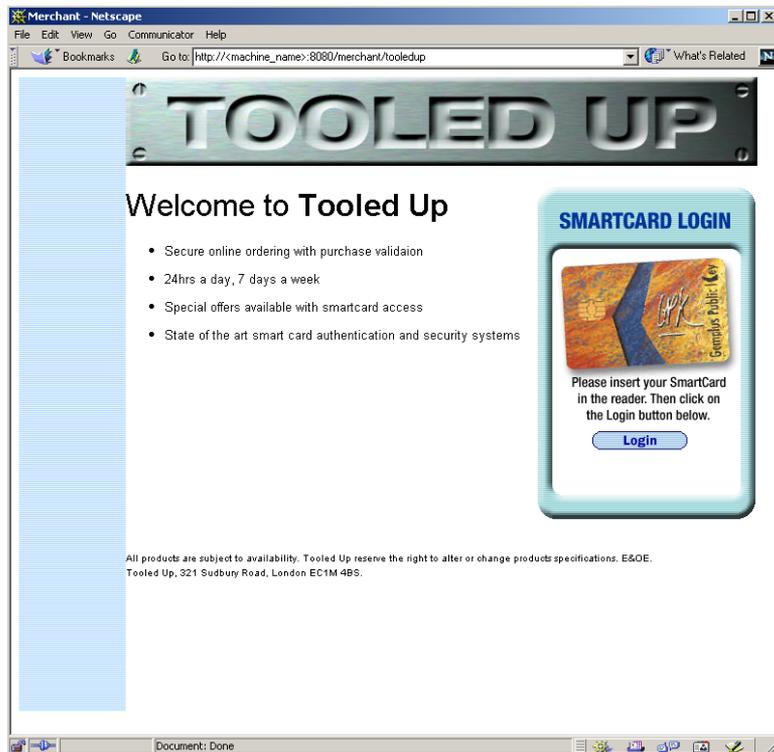
Example supported Schemes include:
Eleanor Payment Reference Specification

Initiating Payment via Sellers Website TooledUp

You can test the system has been installed correctly by going to the Tooledup Website and initiating a payment as follows.

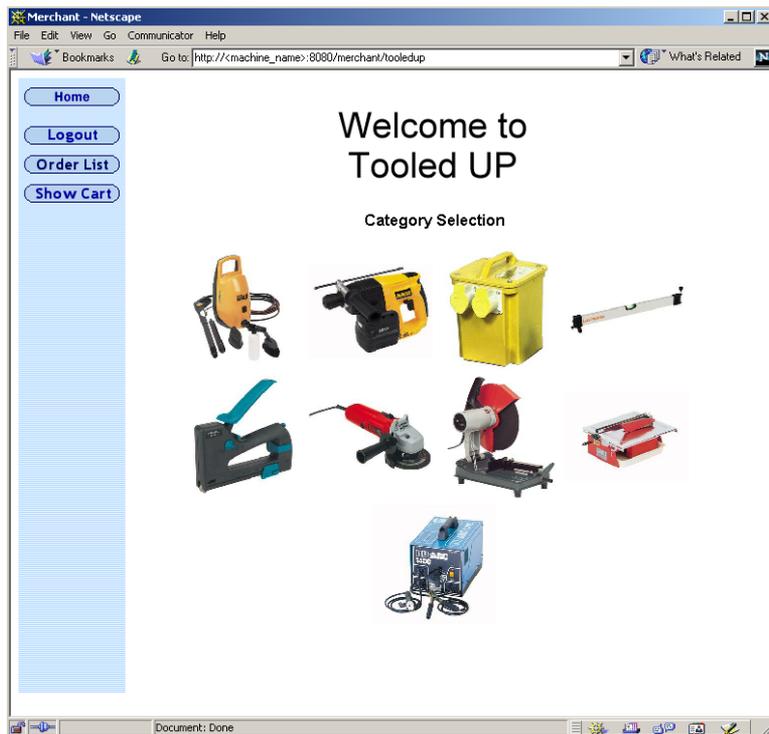
1. Go to TooledUp e.g.
<http://myhost.mycompany.com:80/itps-tdup/logon.html>

Figure 3-1 TooledUp Main Menu



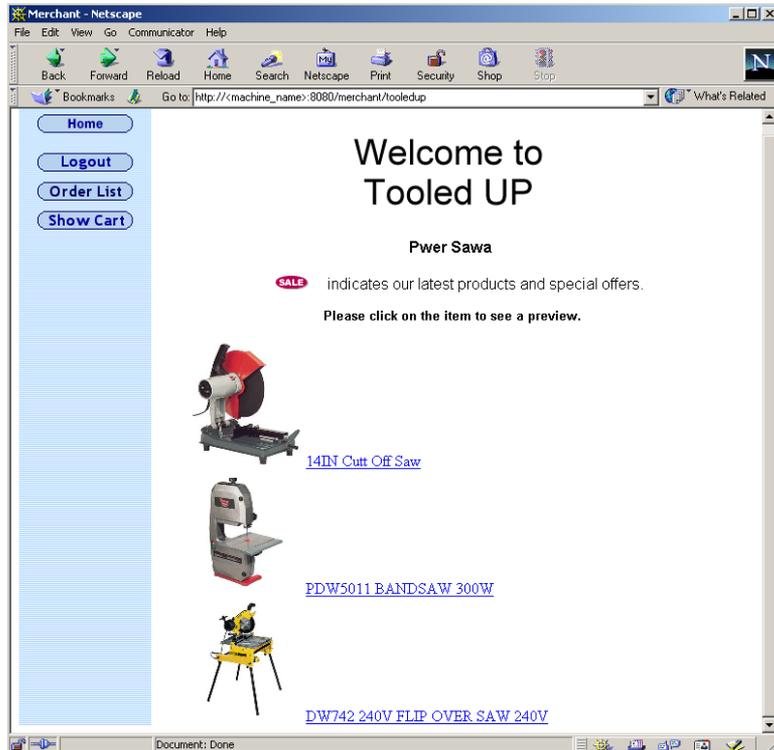
2. Insert Your Smart Card and login. The following menu appears

Figure 3-2 TooledUp Ltd Catalogs



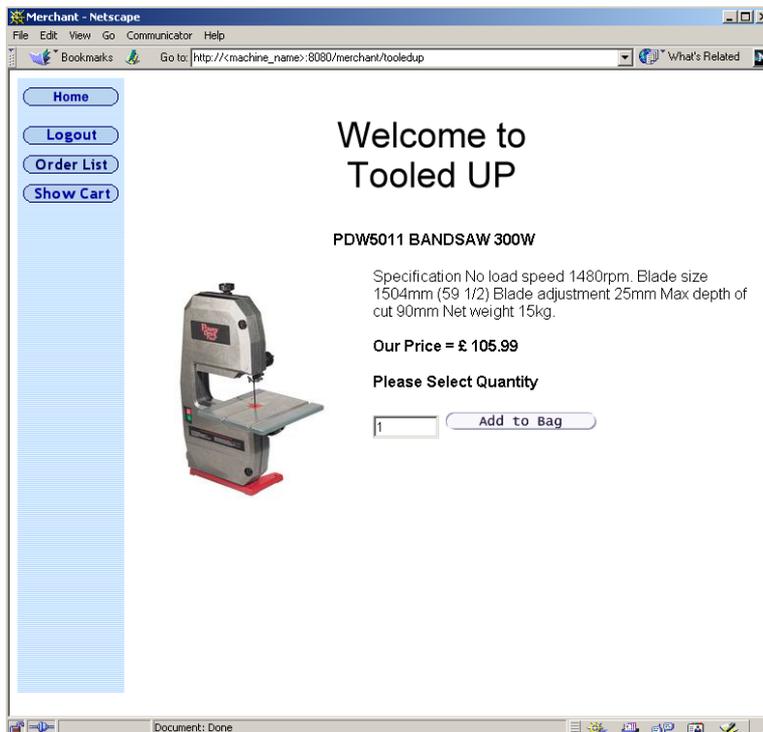
3. Select a product to purchase

Figure 3-3 TooledUp Category Selection



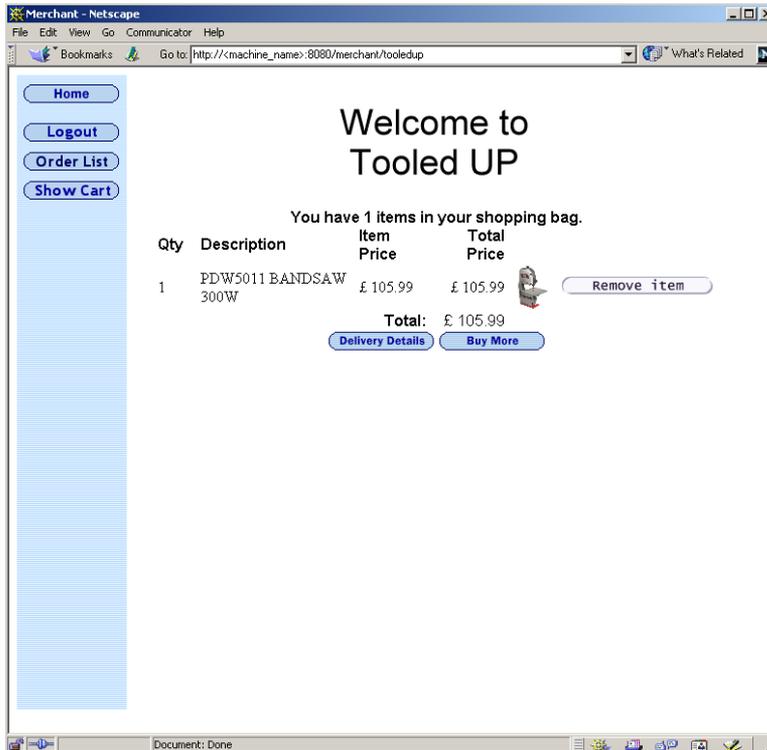
4. Add it to the Shopping Basket

Figure 3-4 Add to Shopping Basket



5. Shopping Basket Details

Figure 3-5 Shopping Bag Details



6. Make delivery Details

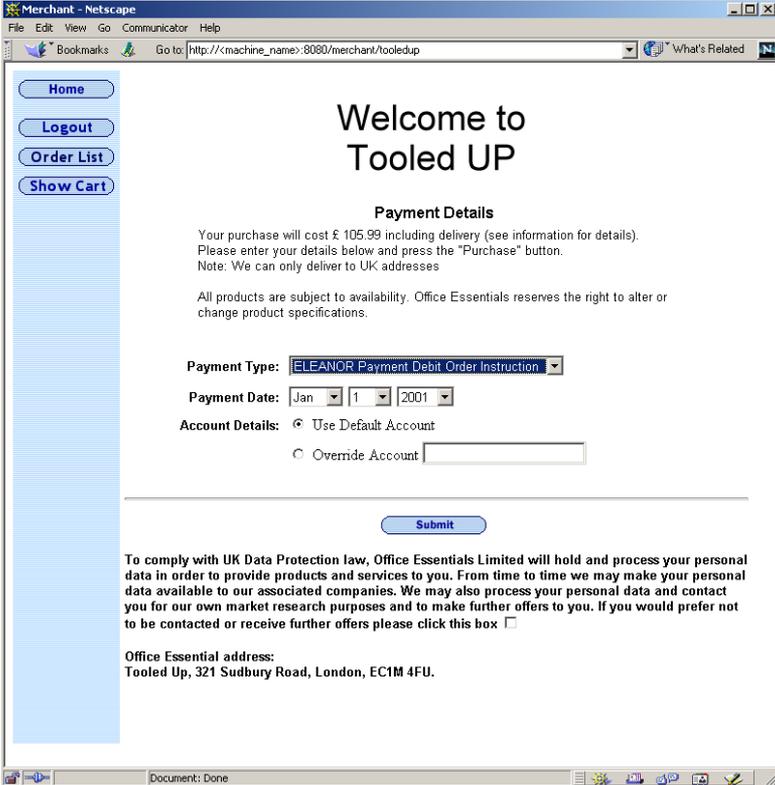
Figure 3-6 Enter Delivery Details

The screenshot shows a Netscape browser window titled 'Merchant - Netscape'. The address bar contains 'http://<machine_name>:8080/merchant/tooledup'. The page content includes a navigation menu on the left with buttons for 'Home', 'Logout', 'Order List', and 'Show Cart'. The main heading is 'Welcome to Tooled UP' followed by 'Delivery Details'. Below this, there is a message: 'Your purchase will cost £ 105.99 including delivery (see information for details). Please enter your details below and press the "Submit" button to continue.' A disclaimer follows: 'All products are subject to availability. Tooled Up reserves the right to alter or change product specifications.' The form fields are: Title: 'Mr', First Name: 'A', Surname: 'Smith', Address: 'Sun Microsystems, 47 King William Street', Postcode: 'EC4R 9AF', Country: 'UK', Contact Telephone Number: '1234', and Contact E-mail Address: 'trustbase@sun.com'. A 'Submit' button is located at the bottom of the form.

7. Make payment. Select Submit at the bottom of the Delivery screen menu

8. Confirm Delivery Details and Payment type. Choices are
 - a. Eleanor Payment Order
 - b. Eleanor Payment Obligation
 - c. Eleanor Certified Payment Obligation
 - d. Eleanor Conditional Payment Obligation
 - e. Eleanor Conditional Payment order
 - f. Eleanor Certified Conditional Payment Obligation

Figure 3-7 Payment Type



Merchant - Netscape

File Edit View Go Communicator Help

Go to: http://<machine_name>:8080/merchant/toolidup

Home

Logout

Order List

Show Cart

Welcome to Tooled UP

Payment Details

Your purchase will cost £105.99 including delivery (see information for details).
Please enter your details below and press the "Purchase" button.
Note: We can only deliver to UK addresses

All products are subject to availability. Office Essentials reserves the right to alter or change product specifications.

Payment Type:

Payment Date:

Account Details: Use Default Account
 Override Account

To comply with UK Data Protection law, Office Essentials Limited will hold and process your personal data in order to provide products and services to you. From time to time we may make your personal data available to our associated companies. We may also process your personal data and contact you for our own market research purposes and to make further offers to you. If you would prefer not to be contacted or receive further offers please click this box

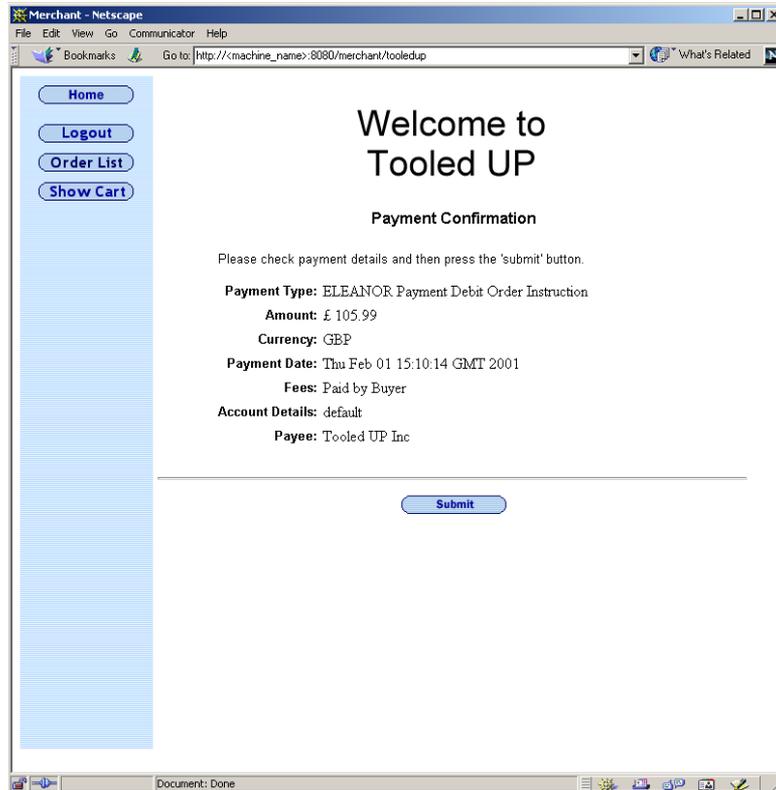
Office Essential address:
Tooled Up, 321 Sudbury Road, London, EC1M 4FU.

Document: Done

You should the opening chapter in your iTPS Installation Guide for details about what each of these payment types actually mean. Once the user selects <submit>, the following page will be displayed unless a conditional payment product is selected. If a conditional payment product is selected there are screens to allow the user to add conditions before progressing to the next screen. For a worked example of how conditions are actually added see for instance the next chapter “Running the Four Corner Model,” on page 157 and the section “Conditional Payment Order,” on page 171

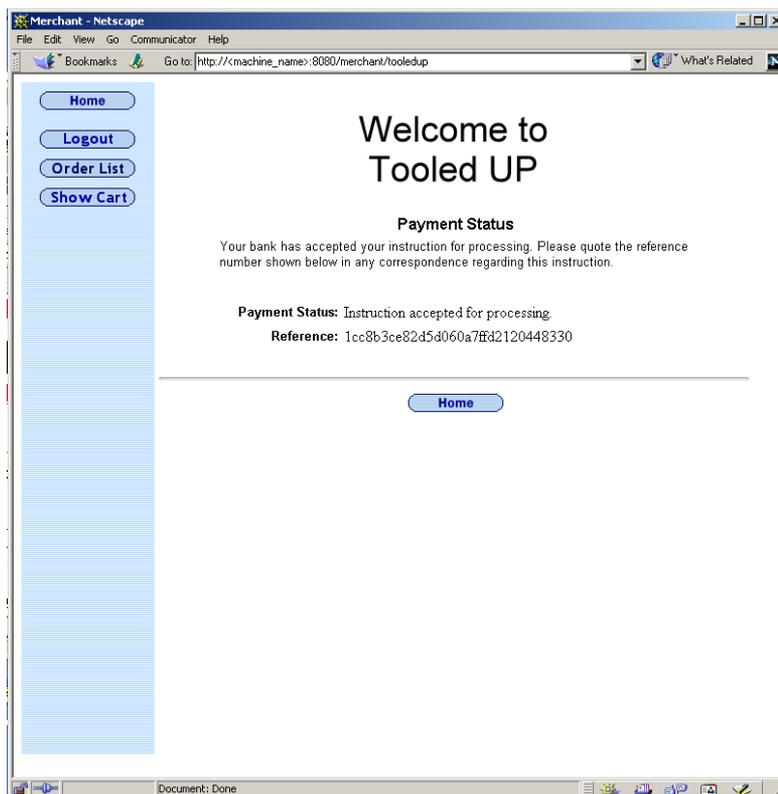
9. Confirm Delivery Details

Figure 3-8 Confirm Delivery Details



10. Payment Accepted

Figure 3-9 Payment Accepted



11. Payment Confirmation

The XML message from this transaction can be confirmed in a number of different ways:

- a. Via your API `com.iplanet.trustbase.initiator.cpi`
- b. Viewing the Identrus `raw_data` log (see your iPlanet Trustbase Transaction Manager Developer Guide)
- c. Editing IWS6 startup UNIX script

`/opt/iws6/https-myhost.mycompany.com/start`

by adding a debug feature as follows:

```
case $arg in
    -debug)
        ./ns-httpd -d $PRODUCT_SUBDIR/config
        exit 0
        ;;
    -start)
        ./$PRODUCT_BIN -d $PRODUCT_SUBDIR/config $@
        if test $? -ne 0 ; then
            exit 1
        fi

```

then run the script as

```
./start -debug
```

12. Check Order List. Finally there is a Tooled Up screen to display confirmed payment requests.

Figure 3-10 Order List

Date	Order Number	Status	Currency	Value
7/16/01	6da8dee7bb5694117ff2120448330	Cancelled	GBP	£ 69.99
7/16/01	1d8e4ece7bbd18ecb80002120448330	Cancelled	GBP	£ 3747.50
7/16/01	1d8e4ece7bbd18ecb7ff2120448330	Cancelled	GBP	£ 69.99
7/17/01	1debb3de7c014096580002120448330	Awaiting payment	GBP	£ 129519.78
7/17/01	1532e55e7c06c887e80002120448330	Awaiting payment	GBP	£ 90.96
7/18/01	1fe18c5e7c5a4e81480002120448330	Cancelled	GBP	£ 69.99
7/19/01	d450ae7ca7758bd80002120448330	Awaiting payment	GBP	£ 8538.78
7/19/01	d450ae7ca7758bd7ff2120448330	Awaiting payment	GBP	£ 499813.34
7/19/01	1353d4fe7ca98116180002120448330	Awaiting payment	GBP	£ 9394.56
7/19/01	1353d4fe7ca9811617ff2120448330	Awaiting payment	GBP	£ 46548.67
7/19/01	1353d4fe7ca9811617ff2120448330	Awaiting payment	GBP	£ 1429.87
7/19/01	1353d4fe7ca9811617ff2120448330	Awaiting payment	GBP	£ 129.99
7/19/01	1353d4fe7ca9811617ffa2120448330	Awaiting payment	GBP	£ 199.99
7/19/01	1353d4fe7ca9811617ff32120448330	Awaiting payment	GBP	£ 69.99
7/19/01	1353d4fe7ca9811617ff2120448330	Awaiting payment	GBP	£ 69.99
7/19/01	1353d4fe7ca9811617ff62120448330	Awaiting payment	GBP	£ 69.99
7/19/01	dce895e7cb2e04707ff2120448330	Awaiting payment	GBP	£ 69.99
7/19/01	dce895e7cb2e04707ff32120448330	Awaiting payment	GBP	£ 349.99
7/19/01	dce895e7cb2e04707ff2120448330	Awaiting payment	GBP	£ 852.78
7/19/01	dce895e7cb2e04707ff32120448330	Awaiting payment	GBP	£ 349.99
7/19/01	dce895e7cb2e04707ff2120448330	Awaiting payment	GBP	£ 29965.56

If the user wishes to cancel a payment request then they should select the specific payment they wish to cancel. A cancellation screen should then appear.

Running Bank in a Box Back End

1. Once the classpath is correct and the queue properties are set, restart the server instance. For instance:

```
/opt/iws6/https-admserv/start
```

```
/opt/iws6/https-myhost.mycompany.com/start
```

2. Start the bank in a box back end in a separate window:

```
./opt/itps-biab/scripts/biab
```

3. Once deployed successfully, the Web Site can be accessed from the browser with the following url. For example,

```
http://myhost.mycompany.com:80/itps-biab/logon.html
```

Running Bank in a Box Admin Tool

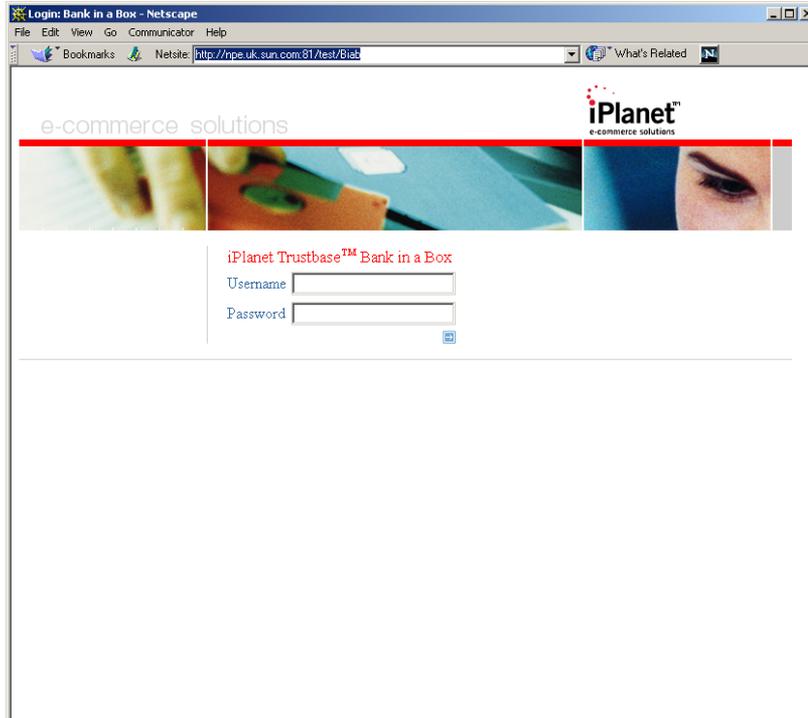
The Bank in a Box (BiaB) has been expanded to allow it to present a user interface permitting examination of messages received, and sending of response messages. This allows a standard installation of iTPS to be used in a live system, by requiring manual intervention between the BiaB interface and the real bank back end infrastructure. Clearly, this approach is only feasible for very low transaction volumes, but does allow evaluation of the product prior to full scale integration with the existing back end infrastructure. The system also allows you to acknowledge Payments. The following provides a walkthrough of this operation

1. Make Sure your BiaB Backend Server is running and a username and password has been allocated to. This can be changed by starting the BiaB in Admin mode and typing:

```
cd /opt/itps-biab/scripts/  
./biab -admin  
adduser <username> <password>  
exit  
./biab -debug
```

Note there is a help command available within this script

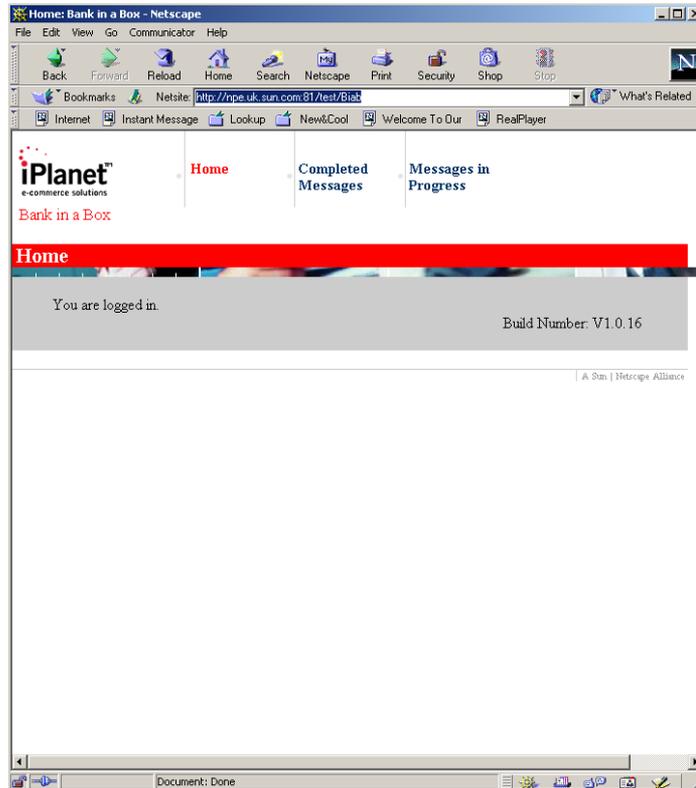
2. Load the following URL in your browser:
<http://myhost.mycompany.com:80/itps-biab/logon.html>

Figure 3-11 Bank in a Box Main Menu

Enter your username and password, set up by your administrator, as described on the previous page.

3. Type in the username and the password. The following menu appears

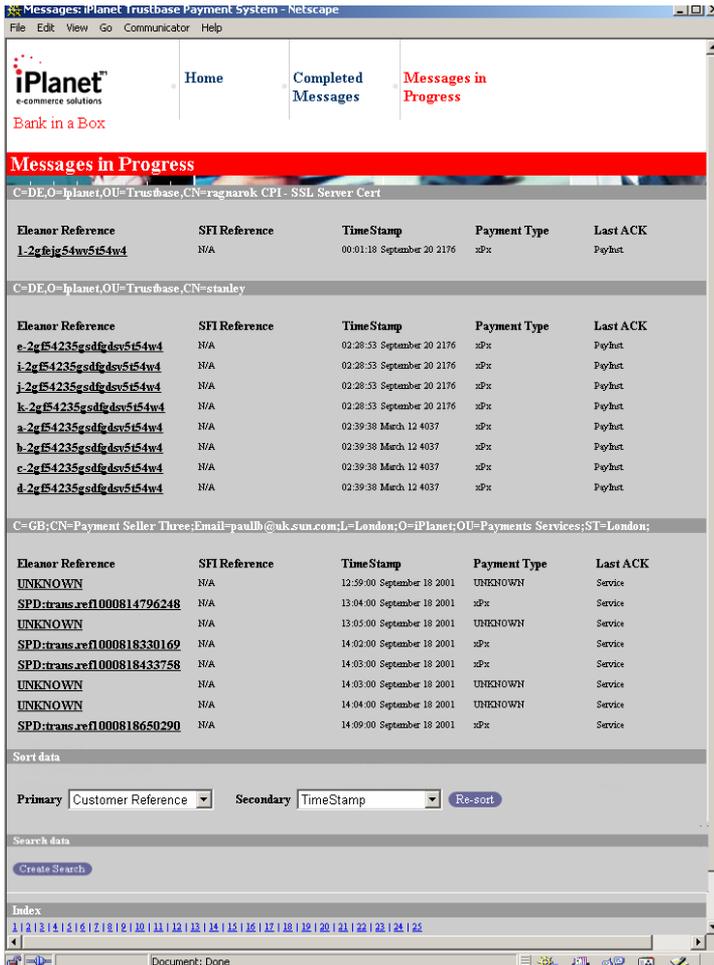
Figure 3-12 Bank in a Box Admin Tool Homepage



4. There are two selections possible here
 - a. Messages in progress. Displays messages that have not been acknowledged with the appropriate response messages yet.
 - b. Completed Messages. These are messages that have had the required acknowledgements issued. For Payment Request messages, when the PaymentExecution acknowledgement is sent the message is moved from <Messages in progress> to <Completed Messages>. For PaymentCancellationRequest messages, as soon as a cancellation acknowledgement is sent the cancellation message is moved to the <Completed messages> screen.

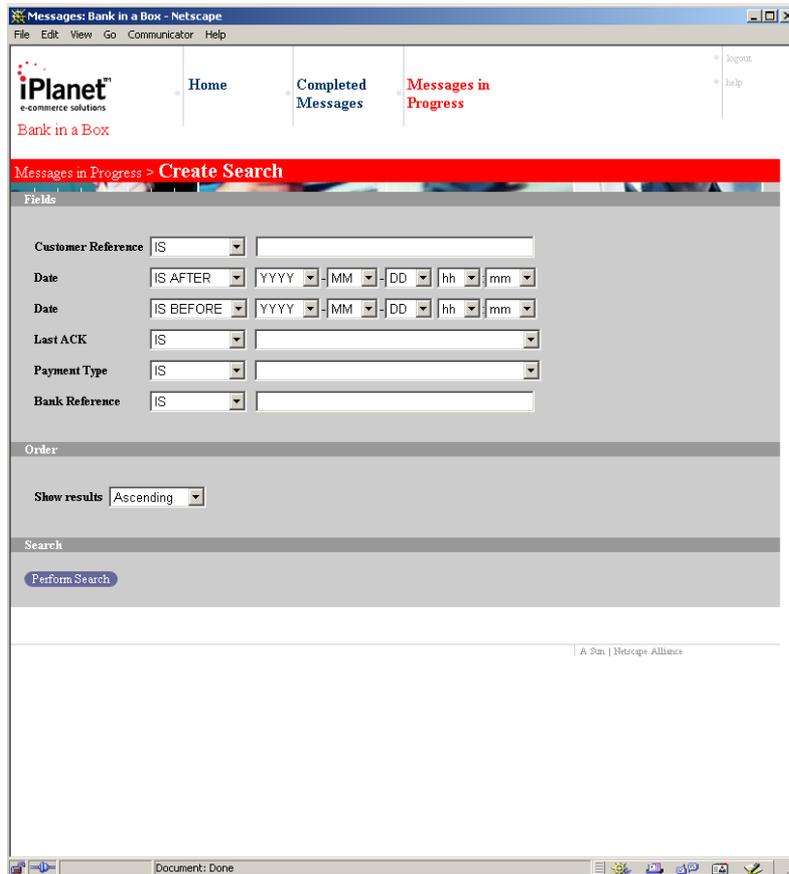
5. Select <messages in progress>
6. An example screen containing some messages now follows. Clearly the first time there will be no messages.

Figure 3-13 BiaB Message Screens



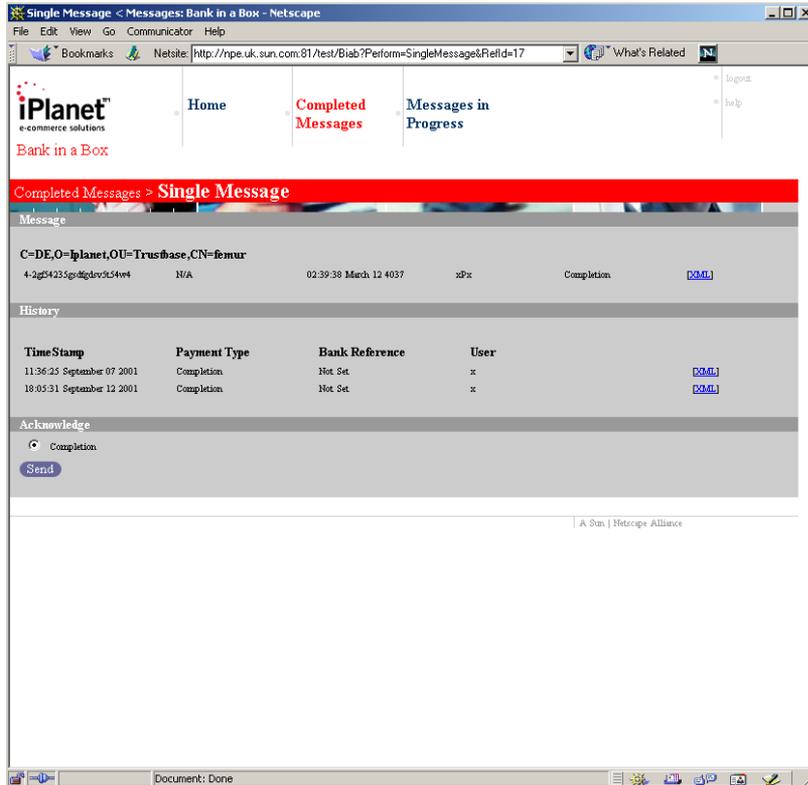
7. There are three options for viewing a message
 - a. Select <re-sort> to reorder messages
 - b. Select <Create Search> to restrict the number of messages displayed on the screen

Figure 3-14 BiaB message searching



- c. Select an individual message to view and the following screen appears:

Figure 3-15 BiaB Message Details

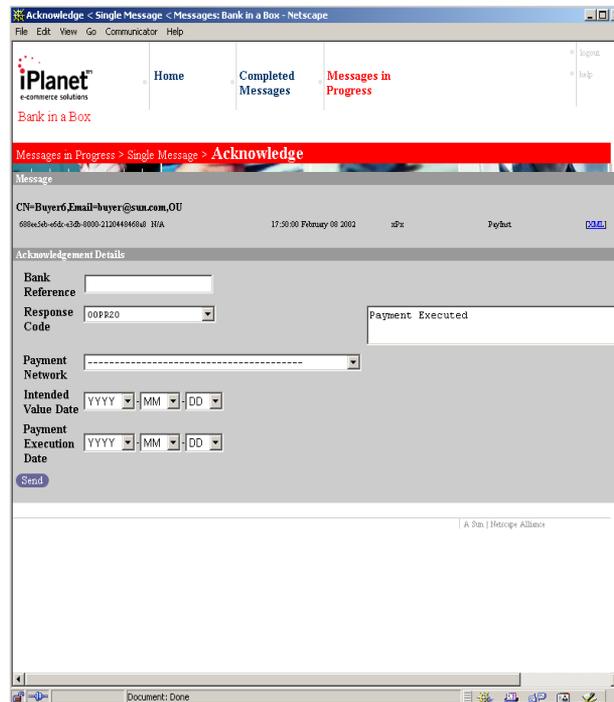


This screen displays details of the original message, plus any acknowledgements that have been sent in conjunction with the message.

8. Below are listed the acknowledgments that could be sent from the BiaB
 - a. Complete
 - b. Execution
 - c. PayInst
 - d. Cancellation
 - e. Obligation

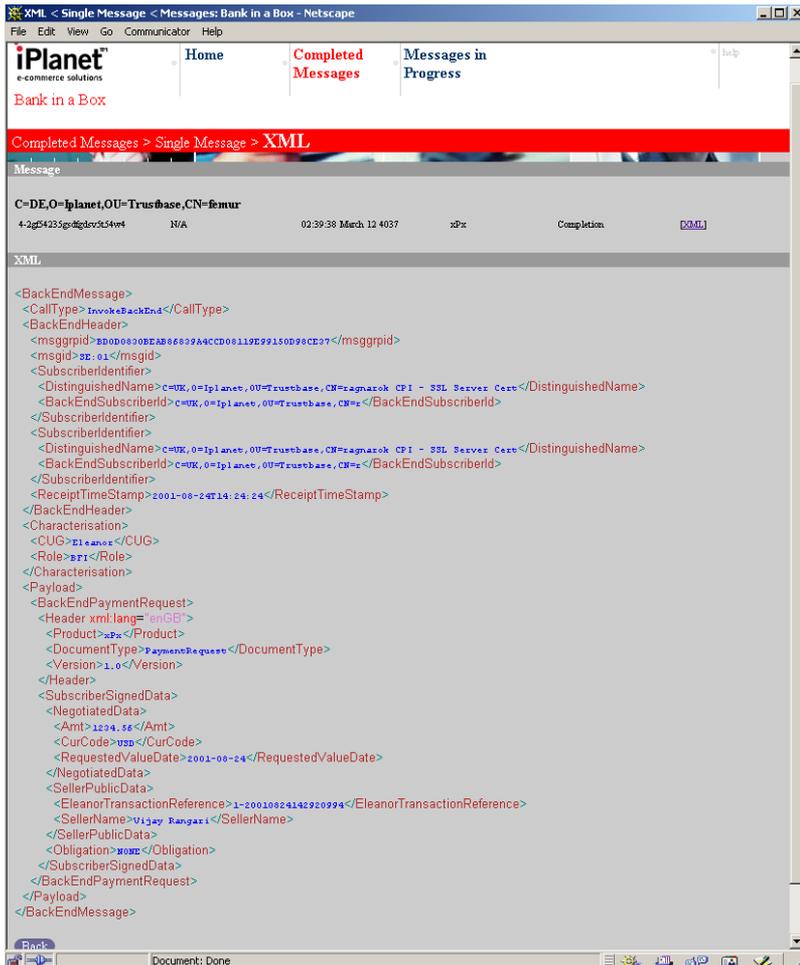
Depending on the type of the request message some options may not be available. The precise definitions of each of these options can be found in the Eleanor Technical Specification.

Figure 3-16 Acknowledging a message



- Each individual message can be viewed in more detail by selecting the <XML> tag

Figure 3-17 An XML Message



- Options are available to sort and retrieve messages from an index.

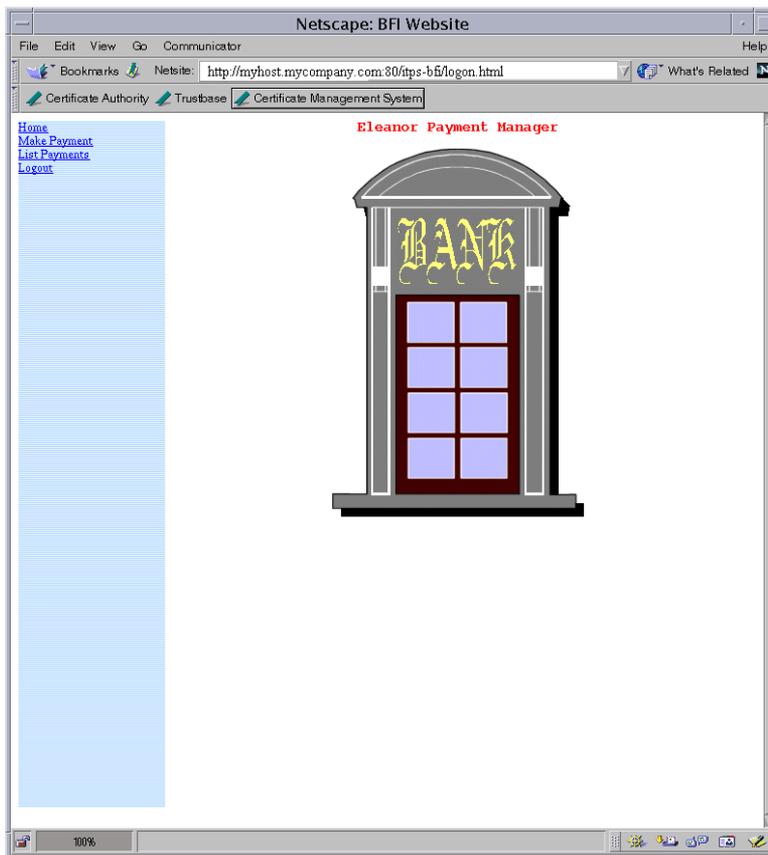
Initiating Payment via Buyers Bank Website

This example is of a Web Site hosted by the Buyer's bank accessed by Buyers who belong to the Eleanor Payment Scheme. It provides the ability for the buyer to initiate payment requests and cancellations directly with its bank.

1. Type in the URL of the Buyer's Bank Website. For example

`http://myhost.mycompany.com:80/itps-bfi/logon.html`

Figure 3-18 Buyers Bank Website Homepage



2. Select <Make Payment>

Figure 3-19 Initiate Payment

BFI Website - Netscape
File Edit View Go Communicator Help

[Home](#)
[Make Payment](#)
[List Payments](#)
[Logout](#)

Request Payment

Please enter following Information. The Fields marked as * are mandatory.

Amount *	<input type="text" value="123"/>	Currency Code *	<input type="text" value="UK"/>
Request Value Date yyyy-mm-dd *	<input type="text" value="2001-08-10"/>	Buyer Reference	<input type="text" value="Ref 123"/>
Buyer Account	<input type="text" value="1234"/>	Transaction Reference	<input type="text" value="997440607286"/>
Seller Name *	<input type="text" value="SUN Microsystems"/>	Seller FICode	<input type="text" value="12345678901"/>
Seller Account	<input type="text" value="12345678"/>	Payment Details	<input type="text" value="As discussed"/>

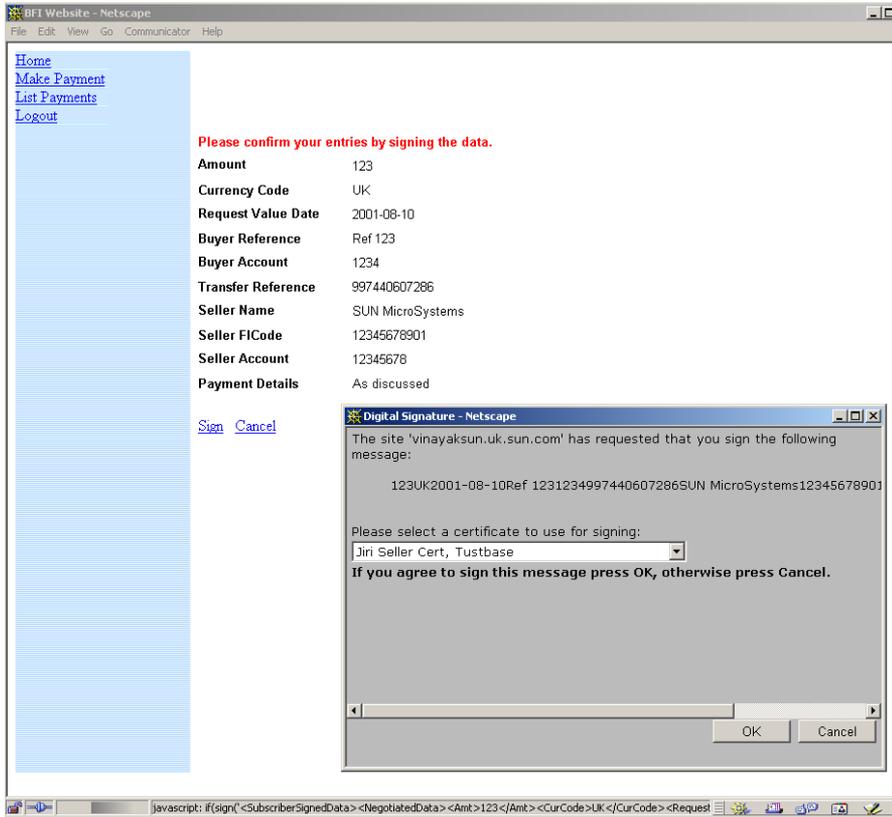
[Submit](#) [Cancel](#)

Document: Done

Details of what each of these fields mean can be found in your payment Scheme Specification

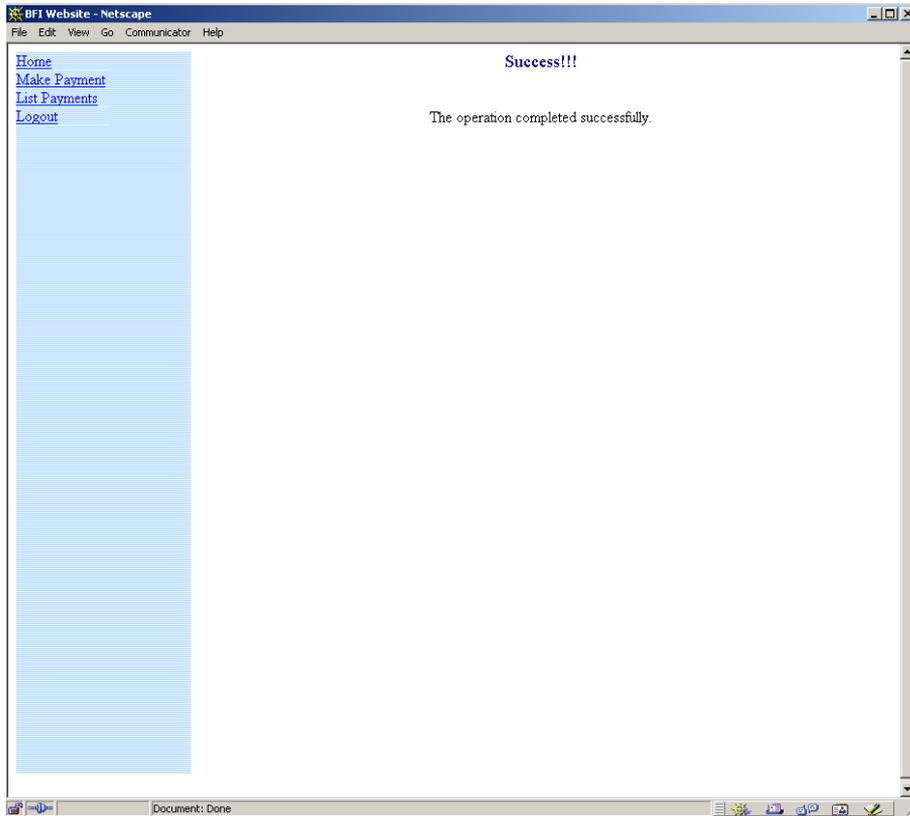
3. Check the details you have entered are correct and sign the payment using your buyers certificate you configured in the previous chapter

Figure 3-20 Sign Payment



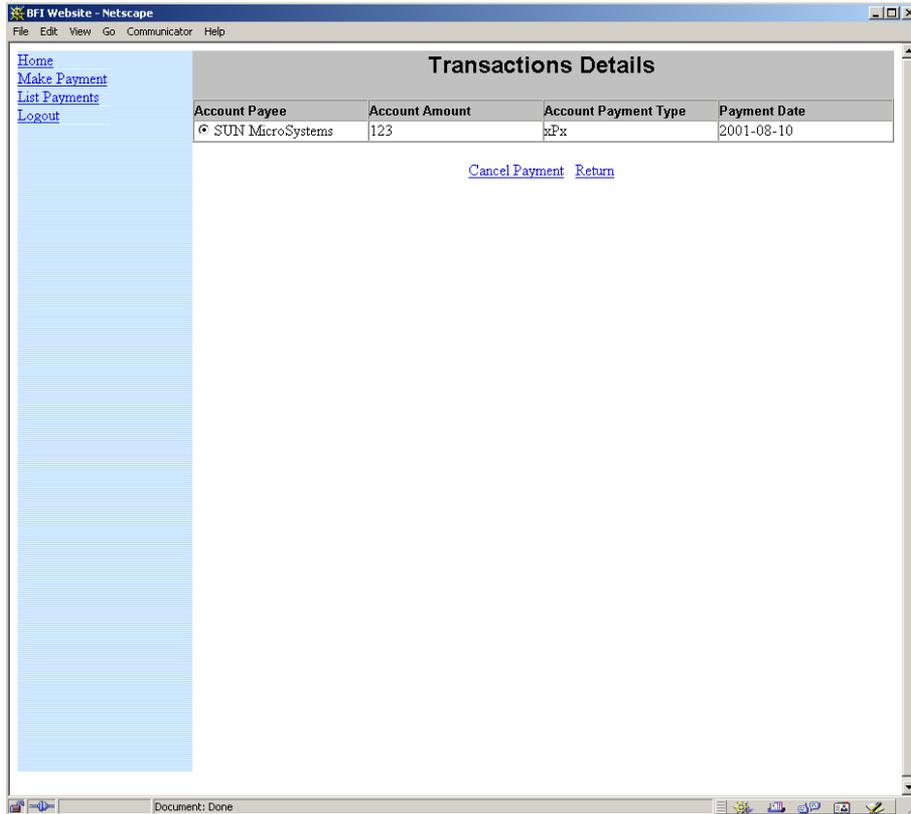
4. Finally when the payment has been initiated a Payment message will be sent to the URL of the Buyers Bank in which you installed iPlanet Trustbase Payment Services on. The following steps take place:
 - a. Buyer Website sends Payment to CPI Library located on the Buyers Website Webserver
 - b. CPI Library forwards this to iPlanet Trustbase Payment Services
 - c. iPlanet Trustbase Payment Services processes the message and forwards the reply to the Buyers CPI Library located on the Buyers Webserver

Figure 3-21 Payment Initiation completed successfully



- Information appears on the Buyers Screen confirming payment. Select <List Payment> to check the information that you have entered has been processed as a payment.

Figure 3-22 List Payment



Condition Management Website

This website will be used by users to alter the status of conditions.

We now illustrate a typical interaction with the Condition Management Website involving a simple purchase by a buyer from the tooledup Website using a Condition payment Order. We introduce two users, each with their own smartcards acting as the following:

- A buyer purchasing a product from Tooled Up on Seller's Website
 - A Conditional Discharge Party
1. We then assign Users (by issuer and subject on their Smart Cards) Organisations and roles. In this case, we only have one user that needs assignment, the buyer.

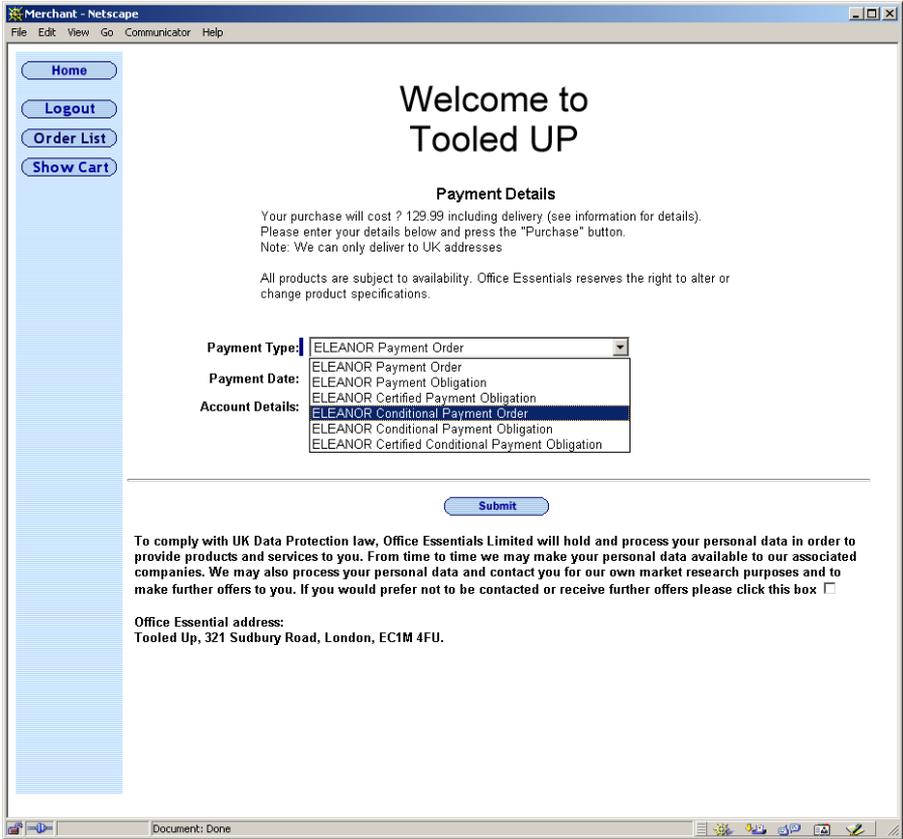
```
telnet buyerbank.buyercompany.com
cd /opt/ittm/Scripts
./runuserdbtool
newrole -role BUYER
neworganisation -organisation BFI
newuser -issuer "CN=BuyerBank CA,OU=BuyerBank,O=BuyerBank,C=GB"
-subject "CN=Buyer Cert,OU=Buyer,O=Buyer,C=GB" -organisation BFI
-email "buyer1@buyercompany.com" -role BUYER
```

2. Buyer goes to the TooledUp Web Site hosted by the seller

<http://myhost.mycompany.com/itps-tdup/logon.html>

- a. Insert your Buyers SmartCard
- b. Login to TooledUp
- c. Select a product
- d. Enter Buyer Delivery Details
- e. Select <Payment Type>
- f. Select <Conditional Payment Order>

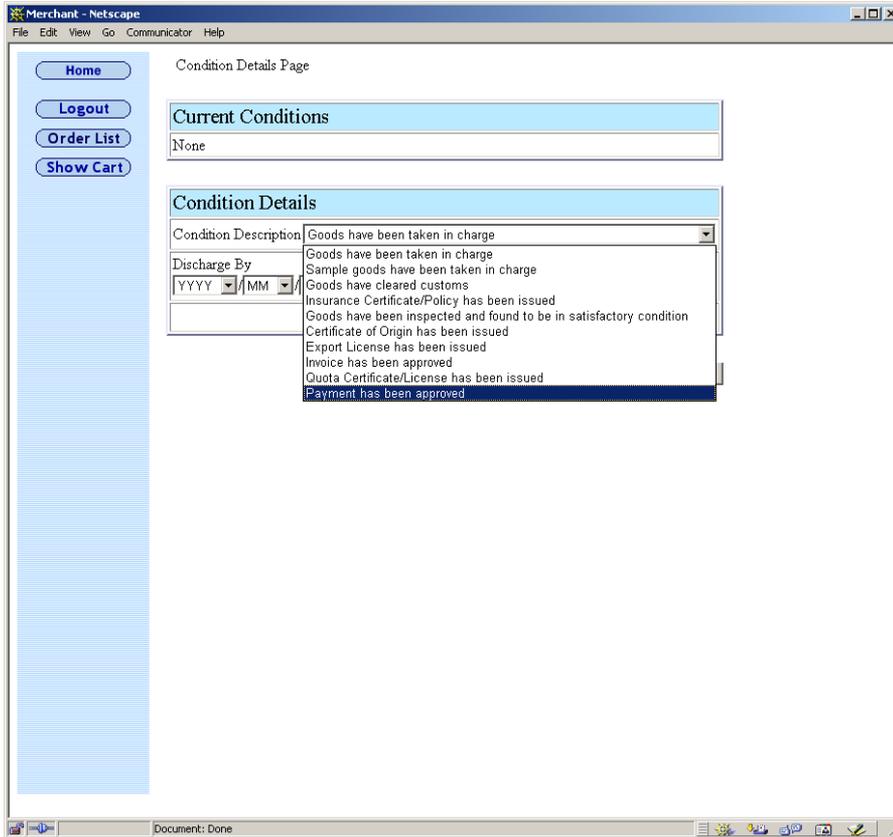
Figure 3-23 Conditional Payment Order



g. Select <submit>

- h. Select the condition <Payment has been approved>

Figure 3-24 Approve Payment



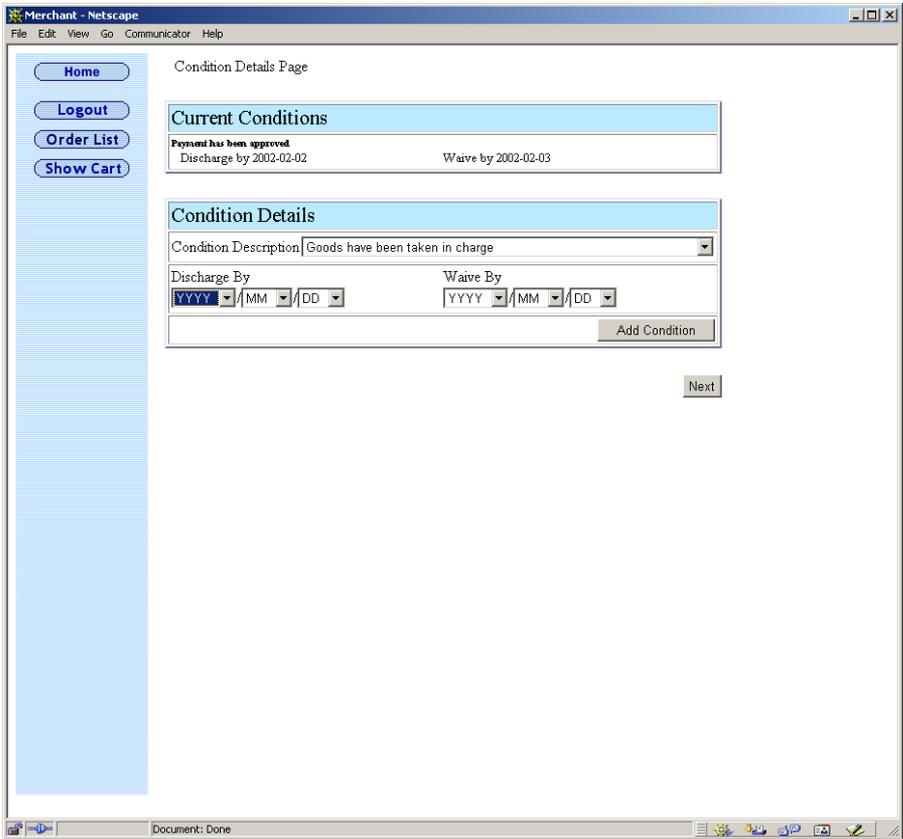
- i. Set Discharge by date to be sometime in the future. This date represents the final day that the CDP will be able to discharge a condition. By “discharge we mean that the CDP has successfully completed the specified condition.
- j. Set the Waive by date to be sometime after the Discharge date. This date represents the last date by which the Buyer can “waive” the requirement that the CDP must discharge the condition. This basically allows the buyer to tell the system to ignore the specified condition.

k. Select <Add Condition>

Note: for the pilot, conditional payments request messages should only contain one discharge-by-date and one waive-by-date. This can be accomplished by either of the following steps:

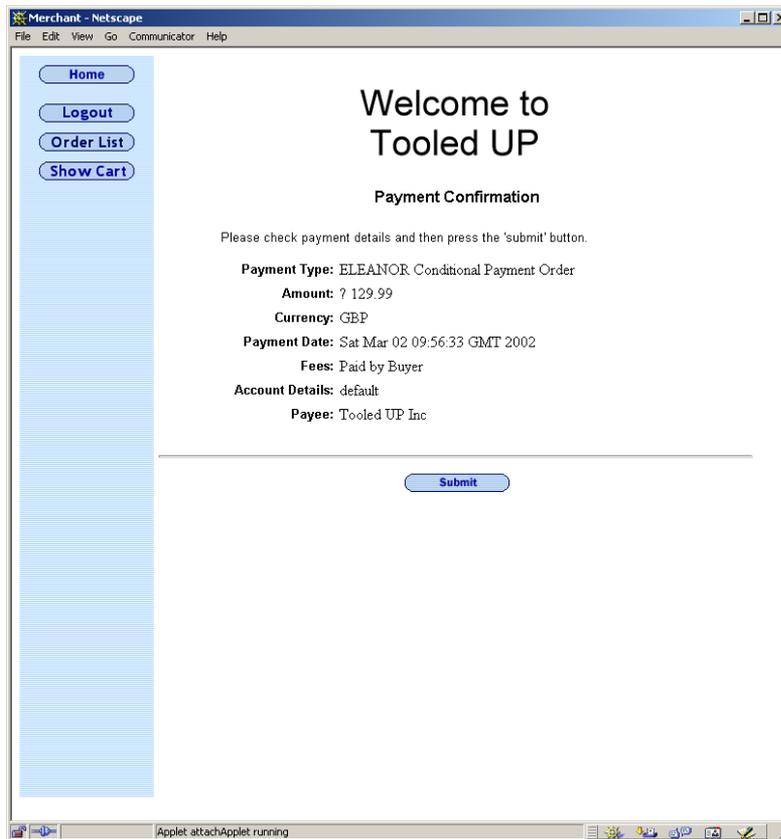
- o The user enters only one condition per payment request message in TooledUp
- o If multiple conditions are included in a payment request, then the discharge-by-dates assigned to each condition must all be the same, and the waive-by-dates assigned to each condition must all be the same

Figure 3-25 A condition has been created



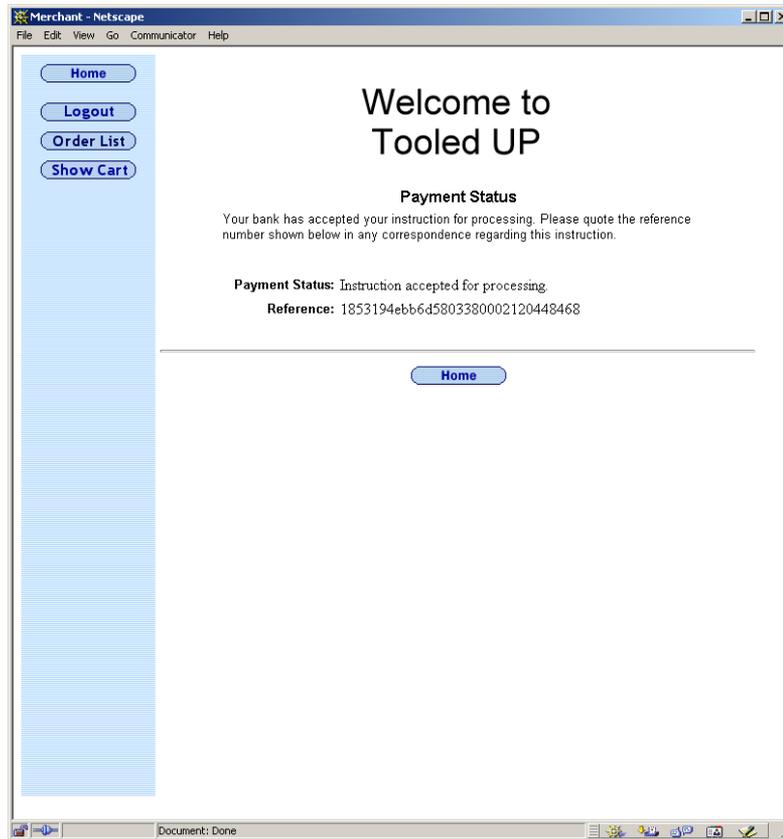
I. Select <Next>

Figure 3-26 Payment Details



m. Select <Submit> and Sign it

n. Make a note of the Payment Reference number to aid in identifying this transaction later.

Figure 3-27 Payment Reference Details

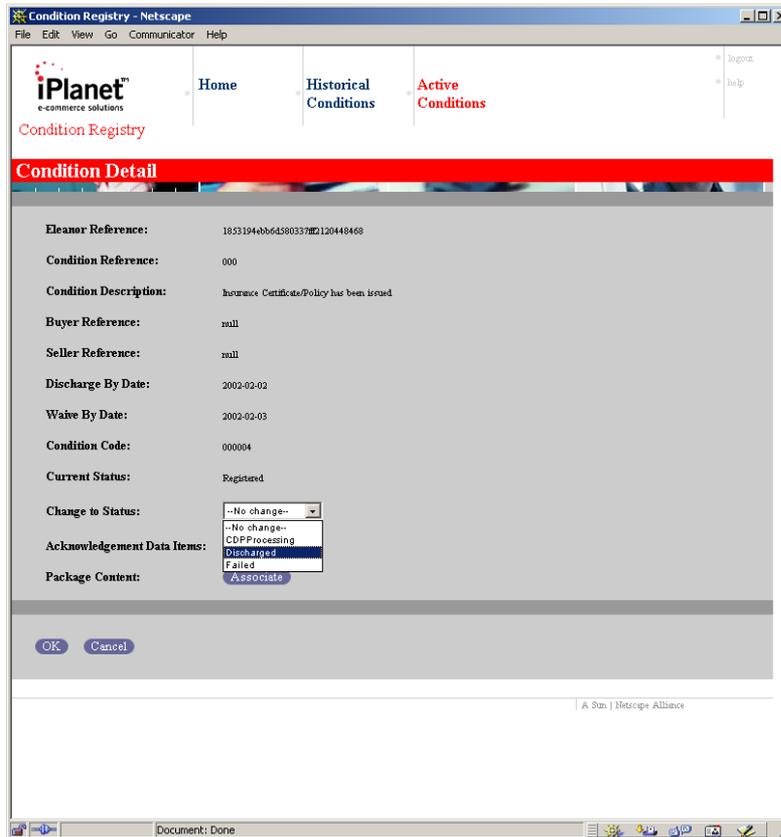
3. In order to confirm that the conditional Payment order had reached the bank's back end system, Go to the Biab Admin Screen
<http://myhost.mycompany.com/itps-biab/logon.html>
 - a. Select Messages in Progress
 - b. View the corresponding Payment Reference
4. The CDP will be sent an email indicating that they have been allocated a condition. A URL of the Condition Management Website is included in this email.

5. Discharge the Condition as follows. Insert CDP Smart Card and go to the Condition Management Website on the BFL.

<http://myhost.mycompany.com/itps-cond/logon.html>

- a. Logon to the system and if successful, Select <Active Conditions>

Figure 3-28 Payment Reference



- b. Select the condition relating to your reference number. The status can be change to “CDP Processing”, “Discharged” or “Failed”.
 - “CDP processing” indicates that the CDP has accepted this condition.

- "Discharged" indicates that the CDP has successfully fulfilled the condition.
- "Failed" indicates that the CDP has not accepted or cannot fulfill the condition.
- c.** It is possible to attach additional documentation with a condition update message. The limit on this attachment size is 2GB

Select <Associate>

Note the Smartcard Web browser plug-in normally has a much lower restriction on data size than the 2GB the condition Website provides

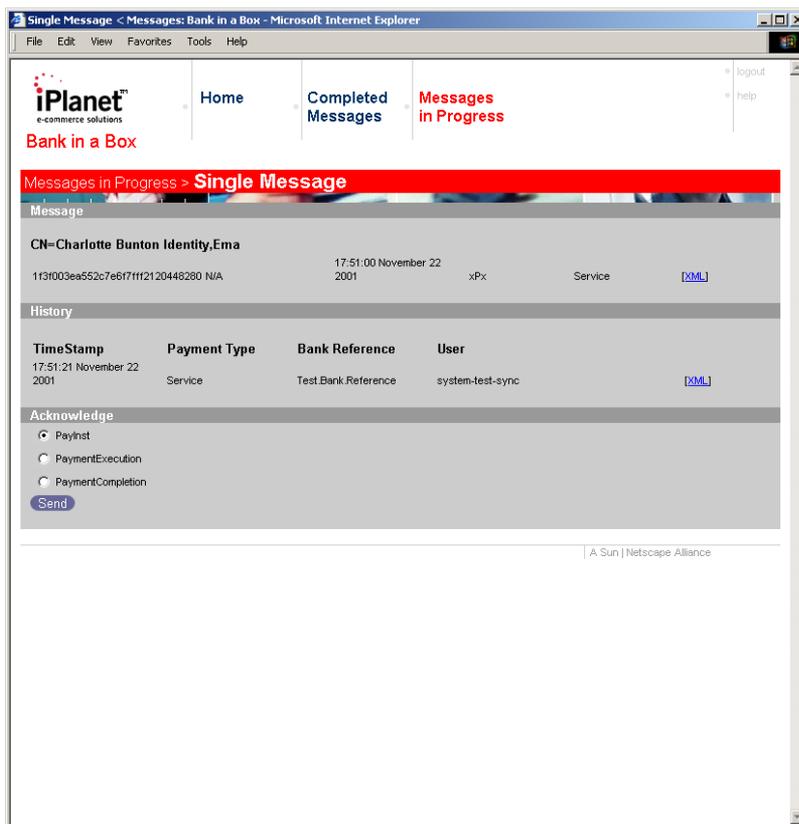
- d.** Select <Discharged>
- e.** Select <ok>
- f.** Sign it
- g.** Send it

6. Finally, since the condition has now been discharged the Buyers Bank makes the payment by returning to the biab website

<http://myhost.mycompany.com/itps-biab/logon.html>

- a. Select Message

Figure 3-29 Make the Payment



- b. Select <send>

Obligation Management Website

This website is used to transfer Obligation Payment products, from the seller to either the BFI or SFI. This website can either be installed at the SFI or BFI. At the SFI, the two roles that can access the site are seller/SFI bank operator. If at BFI, then the only role is BFI bank operator (BANK)

We now illustrate a typical interaction with the Obligation Management Website involving a simple obligation transfer from the Seller to the Buyers bank after a payment is initiated by a buyer from the tooleddup Website using a Payment Obligation. There are two roles that need to be assigned

- The Seller
- The Buyers Bank

As before,

1. Assign Users, Organisations and Roles

```
telnet Sellerbank.sellercompany.com
cd /opt/ittm/Scripts
./runuserdbtool
newrole -role SELLER
neworganisation -organisation SFI
newuser -issuer "CN=BuyerBank CA,OU=BuyerBank,O=BuyerBank,C=GB"
-subject "CN=Buyer Cert,OU=Buyer,O=Buyer,C=GB" -organisation SFI
-email "seller1@sellercompany.com" -role SELLER
telnet buyerbank.buyercompany.com
cd /opt/ittm/Scripts
./runuserdbtool
newrole -role BANK
neworganisation -organisation BFI
newuser -issuer "CN=BuyerBank CA,OU=BuyerBank,O=BuyerBank,C=GB"
-subject "CN=Buyer Cert,OU=Buyer,O=Buyer,C=GB" -organisation BFI
-email "buyerbank1@buyerbank.com" -role BANK
```

2. Initiate Obligation Payment

a. Go to Tooled Up

<http://myhost.mycompany.com/itps-tdup/logon.html>

a. Insert your Buyers SmartCard and Login to TooledUp

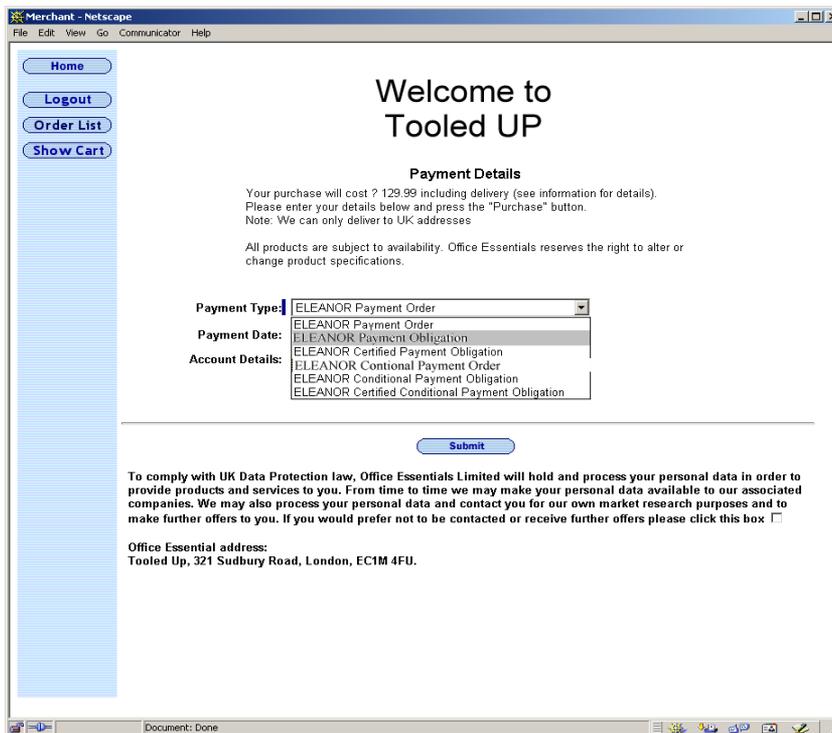
b. Select a product

c. Enter Buyer Delivery Details

d. Select <Payment Type>

e. Select <Payment Obligation>

Figure 3-30 Making a Payment Obligation



f. Make a note of the reference

3. BFI accepts Obligation to make payment.
 - a. Log onto Biab
 http://myhost.mycompany.com/itps-biab/logon.html
 - b. View Sellers Active Messages

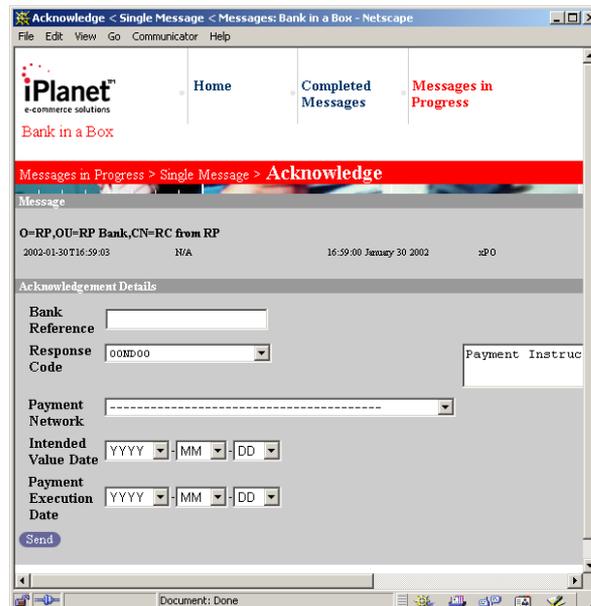
Figure 3-31 Biab Active Messages Screen



- c. Select Messages that match the reference
- d. Select SFI or Seller
- e. Send an Obligation Acknowledgment

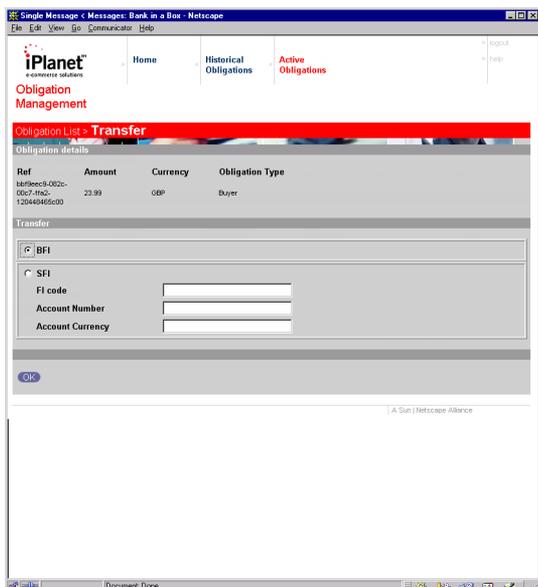
Figure 3-32 Send Acknowledgement

- f. Fill in details
- g. Send Obligation Acknowledgement

Figure 3-33 Send Obligation Acknowledgement Screen

4. Seller transfers obligation from seller to either BFI or SFI
 - a. Logon to Obligation Management Website Enter your SmartCard
<http://myhost.mycompany.com/itps-om/login.html>
 - b. Select <Active Obligation>
 - c. Select Correct Message
 - d. Make the transfer by selecting the <obligation transfer> page

Figure 3-34 Transfer Obligation



- e. Fill in details of where the transfer should take place including the bank code, account and currency of the FI
- f. Select <ok>

Running the CPI Test program

Please refer to the Developer Guide

Running the CPI Test program

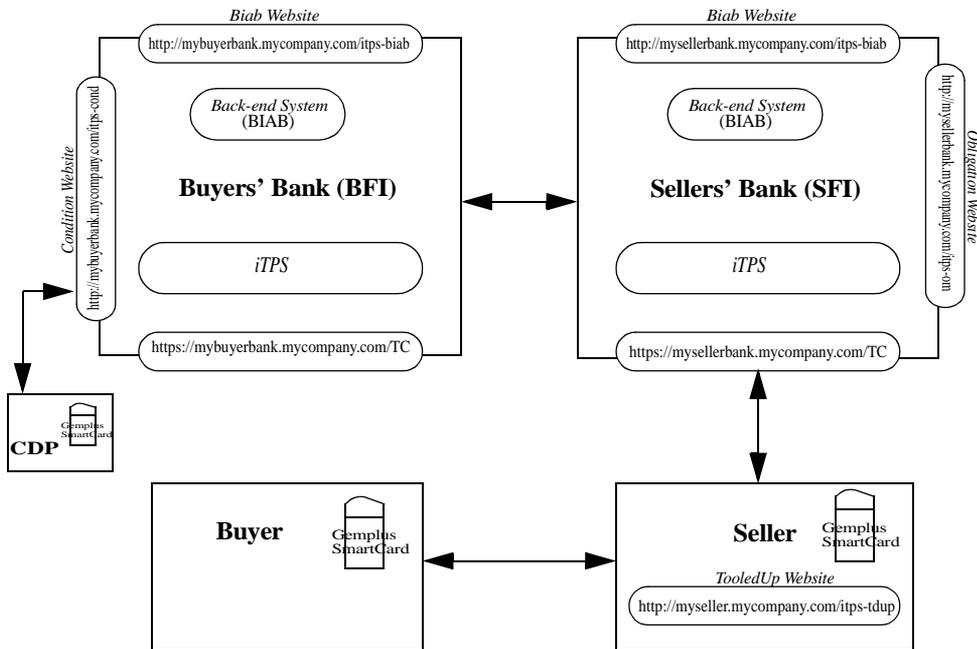
Running the Four Corner Model

Introduction

This chapter describes the configurations and setups necessary for executing transactions involving all of the Eleanor payments products in a 4 corner model. The chapter further explains detailed operational steps for each of the payment types.

Figure 4-1 Four Corner Model in Operation

Four Corner Payment Model (SFIM)



Setup for a 4 Corner model

CDP

The CDP user's smartcard must have following certificates.

1. The Identrus Root CA certificate.
2. The Buyer's bank L1 CA certificate.
3. The utility and identity certificates issued by the Buyer's Bank CA.

The CDP user should provide a valid email address in his smartcard certificates for receiving email notifications.

Buyer

The Buyer's smart card must have following certificates.

1. The Identrus Root CA certificate.
2. The Buyer's bank CA certificate.
3. The utility and identity certificates issued by Buyer's Bank CA.

The Buyer should provide a valid email address in his smartcard certificates for receiving email notifications.

Seller

1. A smart card with following certificates.
 - a. The Identrus Root CA certificate.
 - b. The Buyer's Bank CA certificate.
 - c. The utility and identity certificates issued by Seller's Bank CA.
2. The instance of the webserver with Tooled Up should be running at the seller's site. If the Webserver instance hosting Tooled Up application is not running, then start the same by doing the following.
 - a. `cd /opt/iws6/< virtual id of server with Tooled Up installation>`
 - b. `./start`

3. An entry in the "CDPCert" table, for the database which the seller (Tooled Up) uses. The entry in table CDPCert should have the "CDP_DN" and "CDP_ISSUER_DN" values matching that in the SubjectDN and IssuerDN respectively of the CDP. You should also add the CDP's email address in this table.

For example: `insert into CDPCert values(2,'<subjectDN of CDP>','<issuerDN of CDP>','cdpuser@cdphost.com');` COMMIT;

4. The CERTID column in table CDPCert should have a matching entry in table CONDITION for the same column name, specifying the CDP for the particular condition.

For example: `update CONDITION set CERTID=2 where CERTID=1;` COMMIT;

Buyer's Bank (BFI)

1. The webserver instances with iTTM, BiaB and Condition Management should be running. If not, start the same by doing the following,

- a. iTTM

```
cd /opt/iws6/<virtual id of server with iTTM>
./start
```

- b. BiaB

```
cd /opt/iws6/<virtual id of server with BiaB>
./start
```

- c. Condition Management

```
cd /opt/iws6/ <virtual id of server with Condition Mgmt>
./start
```

2. The iTTM must be running. If not, start the same by doing the following,

```
cd/opt/ittm/Scripts
./startias
./starttbase
```

3. The Bank In A Box application must be running. If not, start the same by doing the following,

```
cd /opt/itps-biab/scripts
./biab -debug
```

4. The Buyer's Bank iTTM should have the Condition Registry service enabled. The service can be enabled by logging in as administrator at

<http://mybuyerbank.mycompany.com:<PORT>/NASAdapter/logon.html>.

- a. Select "Add Service" option under "Authorisation".

```
Service Name -ConditionRegistryService
Role - Identrus
```

- b. Click "Add" and then "Submit" to enable the service.

5. Create an entry for the BUYER with the appropriate IssuerDN and SubjectDN for the BUYER using the userdbtool.

```
cd /opt/ittm/Scripts
```

```
./runuserdbtool  
newrole -role BUYER  
neworganisation -organisation "<Organisation Name of BUYER>"  
newuser -issuer "<IssuerDN of BUYER>" -subject "<SubjectDN of  
BUYER>" -organisation "<Organisation Name of BUYER>" -email "<  
Valid email id >" -role BUYER
```

6. Login as administrator at

<http://mybuyerbank.mycompany.com:<PORT>/NASAdapter/logon.html>

and go to Payments option under Services and do the following.

- a. Click on the hyperlink "Membership List under "Payments Configuration".
- b. Use the "Add New" button to provide the following details.

- - Bank Name - < Buyer's Bank Name >
- - Comment- < Anything >
- - FI Code - < 11 digit FI Code >
- - Routing URL - URL of the TC on Buyer's bank
<https://mybuyerbank.mycompany.com:<SSL PORT>/TC>
- -Bank Distinguished Name - < SubjectDN of Buyer's bank CA Cert>
- -Issuer Distinguished Name - < Issuer DN of Buyer's bank CA Cert >
- - Effective Date - < Current Date or earlier >
- - Membership status - Active
- - Service Status - Available
- c. Follow the same set of procedures as described before to provide the Seller Bank's Inter Participant Signing Certificate details. Details should be filled in as following.
 - Bank Name <Seller Bank > IPSC
 - Comment- <Anything >
 - FI Code - <11 digit FI Code >
 - Routing URL URL of the TC on Seller's bank
 - <https://mysellerbank.mycompany.com:<SSL PORT>/TC>

- Bank Distinguished Name < Subject DN of Seller's Bank IPSC >
- Issuer Distinguished Name <Issuer DN of Seller's Bank IPSC >
- Effective Date <Any date earlier than current date >
- Membership status Active
- Service Status Available

Seller's Bank (SFI)

The Webserver instances of iTTM and Obligation Management should be running. If not, start the same by doing the following.

1. iTTM Webserver instance

```
cd /opt/iws6/<virtual id of server with iTTM>
./start
```

2. Obligation Management Webserver instance

```
cd /opt/iws6/<virtual id of server with Obligation Mgmt>
./start
```

3. iTTM

```
cd/opt/ittm/Scripts
./startias
./starttbase
```

**4. Login as administrator of the iTTM at
<http://mysellerbank.mycompany.com:<PORT>/NASAdapter/logon.html>**

5. Set your Financial Institution Administration

- a. Select <Services><Payments>
- b. Select <Payments Configuration>
- c. select <Settlement Chain>
- d. Select the “Financial Institution Administration” and do the following;
 - Add a 11 digit FI Code.
 - Select settlement role as “Beneficiary Institution”.
 - Enter appropriate values for all other fields and click on “Save”.

6. Set your Currency Code Administration

- a. Select <Services><Payments><Settlement Chain><Currency code Administration>
 - b. Under Current Selected Transaction Currency Code click on the hyperlinked currency (For ex. Pound Sterling if you have selected GBP)
 - c. Select the “FI Code” and click on “Add Link”. This links the FI Code and the selected Currency.
7. The Seller's Bank iTTM should have the Obligation Registry service enabled. The service can be enabled by logging in as administrator at <http://mysellerbank.mycompany.com:<PORT>/NASAadapter/logon.html>.
- a. Select <Authorisation><Add Service>
 - b. Select <Service Name> ObligationMgmntService
 - c. Select <Role>- Identrus
 - d. Click “Add” and then “Submit” to enable the service.
8. Create an entry for the SELLER with the appropriate IssuerDN and SubjectDN for the SELLER using the userdbtool.

```
cd /opt/ittm/Scripts
./runuserdbtool
newrole -role SELLER
neworganisation -organisation "SPD:seller.name"
newuser -issuer "< IssuerDN of SELLER >" -subject "< SubjectDN of SELLER >" -organisation "SPD:seller.name" -email "< Valid email id >" -role SELLER
```

Operational Steps in a 4 Corner Model

Payment Order

1. The Buyer logs into the Tooled Up site at
`http://myseller.mycompany.com:<PORT>/itps-tdup/logon.html`
with the smartcard.
2. After selecting the goods he wishes to purchase from the Tooled Up site, he proceeds to do the following.
 - a. He selects "Payment Type" as "ELEANOR Payment Order", chooses a "Payment Date", provides appropriate account details and selects <Submit>.
 - b. He verifies the "Payment Type", "Amount", "Currency", "Payment Date", "Fees", "Account Details" and signs the data by selecting <Submit>
 - c. Upon completion of placement of the payment order, Buyer sees a success message indicating to him a successful placement of "Eleanor Payment Order".
3. The BiaB administrator at Buyer's bank after logging into BiaB application at URL
`http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html`
does the following.
 - a. Selects the message with the appropriate "Eleanor Reference Number" and sends an acknowledgement (PayInst ack or PayExecution ack)
 - b. On the Acknowledgement details page enters
 - bank reference < Bank Reference String >
 - response code < 00PR20 >
 - payment network < Select Network type >
 - intended value date < A valid date >
 - payment execution date < A valid date >and sends the acknowledgement message. Upon success a mail is received by the BUYER with details of transaction reference, status message.

Payment Obligation

1. The Buyer logs into the Tooled Up site at
<http://myseller.mycompany.com:<PORT>/itps-tdup/logon.html>
 with the smartcard.
2. After selecting the goods he wishes to purchase from the Tooled Up site, he proceed to do the following.
 - a. He selects “Payment Type” as “ELEANOR Payment Obligation”, chooses a “Payment Date”, provides appropriate account details and clicks on “Submit”.
 - b. He verifies the “Payment Type”, “Amount”. “Currency”, ”Payment Date”, “Fees”, ”Account Details” and signs the data by clicking on “Submit”.

Upon completion of placement of the payment order, Buyer sees a success message indicating him a successful placement of “ELEANOR Payment Obligation”.

3. The BiaB administrator logs into the BiaB application at
<http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html>
 and does the following
 - a. Selects the message with the appropriate Eleanor Reference Number and sends an Obligation acknowledgement.
 - b. He enters Acknowledgement details as following
 - Bank Reference < Bank Reference string>
 - Response Code < 000B07 > code for registration of buyer obligation
 - Payment Network < Select network type>
 - Intended Value Date < A valid date later than current date >
 - Payment Execution Date < A valid date >
 - c. Select <Submit>

Upon success a mail is received by the BUYER stating the registration of Obligation.

4. The SELLER logs on to the Obligation Management site at

`http://mysellerbank.mycompany.com:<PORT>/itps-om/logon.html`
using smart card and does the following.

- a. He selects “Active Obligations” to browse the obligations registered.
- b. As an option, he might transfer the obligation to the Seller's Bank(SFI) or the Buyer's Bank(BFI).

5. The BiaB administrator logs into the BiaB application at

`http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html`
and does the following,

- a. Select the message with the particular Eleanor reference and sends a PayExecution acknowledgement.
- b. On the Acknowledgement details page he enters the details as following.
 - Bank Reference < Bank Reference String >
 - Response Code < 00PR20 >
 - Payment Network < Select Network Type >
 - Intended Value Date < A valid date >
 - Payment Execution Date < A valid date >

and sends the acknowledgement message. Upon success a mail is received by the BUYER with details of transaction reference, status message.

Certified Payment Obligation

1. The Buyer logs into the Tooled Up site at
<http://myseller.mycompany.com:<PORT>/itps-tdup/logon.html>
 with the smart card.
2. After selecting the goods he wishes to purchase from the Tooled Up site, he proceed to do the following.
 - a. He selects “Payment Type” as “ELEANOR Certified Payment Obligation”, chooses a “Payment Date”, provides appropriate account details and clicks on “Submit”.
 - b. He verifies the “Payment Type”, “Amount”, “Currency”, “Payment Date”, “Fees”, “Account Details” and signs the data by clicking on “Submit”.

Upon completion of placement of the payment order, Buyer sees a success message indicating him a successful placement of “ELEANOR Certified Payment Obligation”.

3. The BiaB administrator logs into the BiaB application at
<http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html>
 and does the following
 - a. Selects the message with the appropriate Eleanor Reference Number and sends an Obligation acknowledgement.
 - b. He enters Acknowledgement details as following
 - Bank Reference < Bank Reference string >
 - Response Code < 000B00 > code for Certified Obligation accepted by bank.
 - Payment Network - < Select network type >
 - Intended Value Date - < A valid date later than current Date >
 - Payment Execution Date - < A valid date > and clicks on “Submit”.

Upon success a mail is received by the BUYER stating the registration of Obligation.

4. The SELLER logs on to the Obligation Management site at
`http://mysellerbank.mycompany.com:<PORT>/itps-om/logon.html`
using smart card and does the following.
 - a. He selects “Active Obligations” to browse the obligations registered.
 - b. As an option, he might transfer the obligation to the Seller's Bank(SFI) or the Buyer's Bank(BFI).

5. The BiaB administrator logs into the BiaB application at
`http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html`
and does the following
 - a. Select the message with the particular Eleanor reference and sends a PayExecution acknowledgement.

 - b. On the Acknowledgement details page he enters the details as following.
 - Bank Reference < Bank Reference String >
 - Response Code < 00PR20 >
 - Payment Network < Select Network date >
 - Intended Value Date < A valid date >
 - Payment Execution Date < A valid date >and sends the acknowledgement message.

Upon success a mail is received by the BUYER with details of transaction reference, status message.

Conditional Payment Order

1. The Buyer logs into the Tooled Up site at
<http://myseller.mycompany.com:<PORT>/itps-tdup/logon.html>
 with the smartcard.
2. After selecting the goods he wishes to purchase from the Tooled Up site, he proceed to do the following.
 - a. He selects “Payment Type” as “ELEANOR Conditional Payment Order”, chooses a “Payment Date”, provides appropriate account details and selects <Submit>.
 - b. He selects a condition from the “Condition Description” dropdown and provides details for “Discharge By Date” and “Waive By Date” fields. The entered “Waive By Date” should be greater than the “Discharge By Date” and both the dates should be greater than the current date).
 - c. Clicks on “Add Condition” to add the condition and clicks on “Next”
 - d. Sign the data by clicking on “Submit”.

The screen will display the Buyer a success message indicating him a successful placement of “conditional payment order”. The CDP gets an email notification informing him that the conditions have been registered and the Eleanor Transaction Reference for his transaction.

3. The CDP logs in to the Condition Registry site hosted at the Buyer’s Bank
<http://mybuyerbank.mycompany.com:<PORT>/itps-cond/logon.html>
 He clicks on the hyperlinked “Eleanor Reference Number” and changes the status to CDP Processing/Discharged/Failed as appropriate.
4. The BiaB administrator at Buyer's bank after logging into BiaB at URL
<http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html>
 does the following.
 - a. Clicks on the hyperlinked Eleanor Transaction Reference number.
 - b. Select PayInst/PayExecution under “Acknowledge”.
 - c. Clicks on “Send”.

d. Provides the required information Bank Reference, Response Code, Payment Network, Value Term, Intended Value Date, Payment Execution Date.

- Bank Reference : < Any Reference number >
- Response Code : <The Default selected one>
- Payment Network: < Select Any >
- Value Term: < A Valid number of days, say 10 >
- Intended Value Date : < Don't select any date >
- Payment Execution Date: < A valid date later than current date>

Upon success a mail is received by the BUYER with details of transaction reference, status message.

Conditional Payment Obligation

1. The Buyer logs into the Tooled up site at
`http://myseller.mycompany.com :<PORT>/itps-tdup/logon.html`
 with the smart card.

2. After selecting the goods he wishes to purchase from the Tooled Up site, he proceeds to do the following.
 - a. He selects “Payment Type” as “ELEANOR Conditional Payment Obligation”, chooses a “Payment Date”, provides appropriate account details and clicks on “Submit”.
 - b. He selects a condition from the “Condition Description” dropdown and provides details for “Discharge By Date” and “Waive By Date” fields. The entered “Waive By Date” should be greater than the “Discharge By Date” and both the dates should be greater than the current date.
 - c. Clicks on “Add Condition” to add the condition and clicks on “Next”.
 - d. Sign the data by clicking on “Submit”.

The screen will display the Buyer a Success message indicating him a successful placement of “Conditional Payment Obligation”. The CDP gets an email notification informing him that the conditions have been registered and the Eleanor Transaction Reference for his transaction.

3. The CDP logs in to the Condition Registry site hosted at the Buyer's Bank
`http://mybuyerbank.mycompany.com:<PORT>/itps-cond/logon.html`
 He clicks on the hyperlinked Eleanor Reference number and changes the status to CDP Processing/Discharged/Failed as appropriate.

4. The BiaB Administrator at the Buyer's Bank logs into the BiaB application at following url.
`http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html`
 The BiaB administrator after logging into BiaB, does the following.
 - a. Clicks on the hyperlinked Eleanor Transaction Reference number.
 - b. Select “Obligation” under “Acknowledge”.
 - c. Clicks on “Send”.

d. Provides the required information Bank Reference, Response Code, Payment Network, Value Term, Intended Value Date, Payment Execution Date.

- Bank Reference : < Any Reference number >
- Response Code : <The Default selected one>
- Payment Network: < Select Any >
- Value Term: < A Valid number of days, say 10 >
- Intended Value Date : < Don't select any date >
- Payment Execution Date: < A valid date >

Repeat the same steps under 4, selecting “Obligation” and then for “Payment Execution” under “Acknowledge”.

Upon success a mail is received by the BUYER with details of transaction reference, status message.

- 5.** The SELLER with his smart card logs into the Obligation Management site hosted at the Seller's bank at

`http://mysellerbank.mycompany.com:<PORT>/itps-om/logon.html`

and he sees the obligations as “Active Obligations”. As an optional step he may transfer the obligation to the Seller's Bank(SFI) or Buyer's Bank(BFI).

- 6.** The BiaB Administrator at the Buyer's Bank logs into the BiaB application at following url.

`http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html`

The BiaB administrator after logging into BiaB, does the following.

- a.** Clicks on the hyperlinked Eleanor Transaction Reference number.
 - b.** Select “PayExecution” under “Acknowledge”.
 - c.** Clicks on “Send”.
 - d.** Provides the required information Bank Reference, Response Code, Payment Network, Value Term, Intended Value Date, Payment Execution Date.
- Bank Reference : < Any Reference number >
 - Response Code : <The Default selected one>

- Payment Network : < Select Any >
- Value Term: < A Valid number of days, say 10 >
- Intended Value Date : < Don't select any date >
- Payment Execution Date : < A valid date >

Upon success a mail is received by the BUYER with details of transaction reference, status message.

Certified Conditional Payment Obligation

1. The Buyer logs into the Tooled up site at

`http://myseller.mycompany.com:<PORT>/itps-tdup/logon.html`

with the smartcard.

2. After selecting the goods he wishes to purchase from the Tooled Up site, he proceed to do the following.
 - a. He selects “Payment Type” as “ELEANOR Certified Conditional Payment Obligation”, chooses a “Payment Date”, provides appropriate account details and clicks on Submit.
 - b. He selects a condition from the “Condition Description” dropdown and provides details for “Discharge By Date” and “Waive By Date” fields. The entered “Waive By Date” should be greater than the “Discharge By Date” and both the dates should be greater than the current date.
 - c. Clicks on “Add Condition” to add the condition and clicks on “Next”
 - d. Sign the data by clicking on “Submit”.

The screen will display the BUYER a success message indicating him a successful placement of “Eleanor Certified Conditional Payment Obligation”. The CDP gets an email notification informing him that the conditions have been registered and the Eleanor Transaction Reference for his transaction.

3. The CDP user logs in to the Condition Registry site hosted at the Buyer’s Bank

`http://mybuyerbank.mycompany.com:<PORT>/itps-cond/logon.html`

He clicks on the hyperlinked Eleanor Reference number and changes the status to CDP Processing/Discharged/Failed as appropriate.

4. The BiaB Administrator at the Buyer’s Bank logs into the BiaB application at following url.

`http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html`

The BiaB administrator after logging into BiaB, does the following.

- a. Clicks on the hyperlinked Eleanor Transaction Reference number.
- b. Selects “Obligation” under “Acknowledge”.
- c. Clicks on “Send”.

- d. Provides the required information Bank Reference, Response Code, Payment Network, Value Term, Intended Value Date, Payment Execution Date.

- Bank Reference : < Any Reference number >
 - Response Code : <The Default selected one>
 - Payment Network: < Select Any >
 - Value Term: < A Valid number of days, say 10 >
 - Intended Value Date : < Don't select any date >
 - Payment Execution Date: < A valid date >
5. The SELLER with his smart card logs into the Obligation Management site hosted by the Seller's bank at

`http://mysellerbank.mycompany.com:<PORT>/itps-om/logon.html`

and he sees the obligations as “Active Obligations”. As an optional step he may transfer the obligation to the Seller's Bank or Buyer's Bank.

6. The BiaB Administrator at the Buyer's Bank logs into the BiaB application at following url.

`http://mybuyerbank.mycompany.com:<PORT>/itps-biab/logon.html`

The BiaB administrator after logging into BiaB, does the following.

- a. Clicks on the hyperlinked Eleanor Transaction Reference number.
 - b. Select “PayExecution” under “Acknowledge”.
 - c. Clicks on “Send”.
 - d. Provides the required information Bank Reference, Response Code, Payment Network, Value Term, Intended Value Date, Payment Execution Date.
- Bank Reference : < Any Reference number >
 - Response Code : <The Default selected one>
 - Payment Network: < Select Any >
 - Value Term: < A Valid number of days, say 10 >
 - Intended Value Date : < Don't select any date >
 - Payment Execution Date: < A valid date >

Upon success a mail is received by the BUYER with details of transaction reference, status message.

Email Notification

Introduction

This document describes the parties that are emailed as notifications of events occurring in the Payment system.

It also describes where the system obtains the email addresses of these parties, which is dependent on the type of messages being sent, i.e. Asynchronous acknowledgements, condition status update notifications, etc.

Email Location Retrieval

Signing Certificate

The email address is obtained from the signing certificate(s) of the payment instruction messages. The SubjectAltName extension in these certificates contains the email address.

These addresses are used when asynchronous acknowledgements are sent. Both the Buyer and Seller can receive email notifications of these type of acknowledgements:

- email address in TooledUp seller certificate used for signing payment instruction messages
- email address in Buyer Smart Card used for signing.

User Database

Buyer information is added to the User database in order to control access to the Condition Management web site. One of the attributes that can be added to the Buyer information profile is an email address.

It is this email address that is used to notify the Buyer of updates to the status of Conditions, and Condition sets. The following acronyms are used:

- email address in Buyer details in User Db

Message Contents

For conditional payment instruction messages the email address supplied in the contact element contained within the individual condition elements is used to inform the CDP of updates to the status of conditions relating to the them.

- CDP details obtained from the payment instruction message contents

Message Types

All the messages described below relate to SFIM messages, but the results broadly relate to the same as

Payment Order

A Payment Order instruction has been sent to the BFI, via the SFI from the seller, and has been successfully acknowledged with a synchronous Service acknowledgement.

The following acknowledgements have all been sent from the BFI's back end systems, in the following order: PayInst, PaymentExecution, and Payment Completion.

<i>Originating From BFI</i>	<i>Pay Inst Ack</i>	<i>Payment Execution Ack</i>	<i>Payment Completion Ack</i>
Buyer	Yes 1 Buyer Smart Card used for signing	Yes 1 Buyer Smart Card used for signing	Yes 1 Buyer Smart Card used for signing
Seller via SFI	Yes	Yes	Yes

A Payment Completion acknowledgement has been sent from the SFI's back end systems.

<i>Originating From SFI</i>	<i>Payment Completion Ack</i>
Buyer via BFI	Yes 1 Buyer Smart Card used for signing
Seller	Yes

Payment Obligation

A Payment Obligation instruction has been sent to the BFI, via the SFI from the seller, and has been successfully acknowledged with a synchronous Service acknowledgement.

The following acknowledgements have all been sent from the BFI's back end systems, in the following order: Obligation, PaymentExecution, and Payment Completion.

<i>Originating From BFI</i>	<i>Obligation Ack</i>	<i>Registry Updated Ack</i>	<i>Pay Exec Ack</i>	<i>Pay Comp Ack</i>
Buyer	Yes 1 Buyer Smart Card used for signing	---	Yes 1 Buyer Smart Card used for signing	Yes 1 Buyer Smart Card used for signing
Seller via SFI	Yes	Yes	---	---

A Payment Completion acknowledgement has been sent from the SFI's back end systems.

<i>Originating From SFI</i>	<i>Pay Comp Ack</i>
Buyer via BFI	Yes 1 Buyer Smart Card used for signing
Seller	Yes

Conditional Payment Order

A Conditional Payment Order instruction has been sent to the BFI, via the SFI from the seller, and has been successfully acknowledged with a synchronous Service acknowledgement.

This message contains a single condition.

Scenario A

First, a PayInst acknowledgement is sent from the BFI's back end systems.

This registers the condition.

The CDP then accepts the condition at the BFI's Condition Management web site, which changes the condition status to CDPProcessing.

The CDP then Discharges the condition through the BFI's Condition Management web site, which changes the condition status to Discharged.

The following acknowledgements are then sent from the BFI's back end systems, in the following order: PaymentExecution, and Payment Completion.

<i>Originating From BFI</i>	<i>Pay Inst Ack</i>	<i>Payment Condition: Registered</i>	<i>Payment Condition: CDP Processing</i>	<i>Payment Condition: Discharged</i>	<i>Pay Exec Ack</i>	<i>Pay Comp Ack</i>
Buyer	Yes 1 Buyer Smart Card used for signing	---	---	Yes 2 Buyer details in User Db	Yes 1 Buyer Smart Card used for signing	Yes 1 Buyer Smart Card used for signing
Seller via SFI	Yes	---	Yes	Yes	Yes	Yes
CDP	---	Yes	---	---	---	---

A Payment Completion acknowledgement has been sent from the SFI's back end systems.

<i>Originating From SFI</i>	<i>Pay Comp Ack</i>
Buyer via BFI	Yes 1 Buyer Smart Card used for signing
Seller	Yes

Scenario B

First, a PayInst acknowledgement is sent from the BFI's back end systems.

This registers the condition.

The CDP then accepts the condition at the BFI's Condition Management web site, which changes the condition status to CDPProcessing.

When the condition's waive-by-date has passed, a Payment Condition message is sent by iTPS signifying that the condition status has changed to Expired.

<i>Originating From BFI</i>	<i>Pay Inst Ack</i>	<i>Payment Condition: Registered</i>	<i>Payment Condition: CDP Processing</i>	<i>Payment Condition: Expired</i>
Buyer	Yes 1 Buyer Smart Card used for signing	---	---	---
Seller via SFI	Yes	---	Yes	Yes
CDP	---	Yes	---	---

Scenario C

First, a PayInst acknowledgement is sent from the BFI's back end systems.

This registers the condition.

The CDP then accepts the condition at the BFI's Condition Management web site, which changes the condition status to CDPProcessing.

The CDP then fails the condition at the BFI's Condition Management web site, which changes the condition status to failed.

The Buyer then waives the condition at the BFI's Condition Management web site.

The BFI's back end systems acknowledge that the Buyer has the appropriate authority, and a Payment Condition Received Acknowledgement is sent.

This positive acknowledgement updates the condition status to waived.

<i>Originating From BFI</i>	<i>Pay Inst Ack</i>	<i>Payment Condition: Registered</i>	<i>Payment Condition: CDP Processing</i>	<i>Payment Condition : Failed</i>	<i>Payment Condition Received Ack</i>	<i>Payment Condition: Waived</i>
Buyer	yes 1 Buyer Smart Card used for signing	---	---	---	Yes 1 Buyer Smart Card used for signing	Yes 2 Buyer details in User Db
Seller via SFI	Yes	---	Yes	Yes	Yes	---
CDP	---	Yes	---	---	---	---

A Payment Completion acknowledgement has been sent from the SFI's back end systems.

<i>Originating From SFI</i>	<i>Pay Comp Ack</i>
Buyer via BFI	Yes 1 Buyer Smart Card used for signing
Seller	Yes

Scenario D

First, a PayInst acknowledgement is sent from the BFI's back end systems.

This registers the condition.

The CDP accepts the condition for processing then discharges the condition, then the payment is canceled.

The CDP then Discharges the condition through the BFI's Condition Management web site, which changes the condition status to Discharged.

A Payment Cancellation message is then received by the BFI, which successfully returns a synchronous Service acknowledgement.

A Cancellation acknowledgement is then sent from the BFI's back end systems.

<i>Originating From BFI</i>	<i>Pay Inst Ack</i>	<i>Payment Condition: Registered</i>	<i>Payment Condition: CDP Processing</i>	<i>Payment Condition: Discharged</i>	<i>Cancellation Ack</i>
Buyer	Yes 1 Buyer Smart Card used for signing	---	---	Yes 2 Buyer details in User Db	Yes 1 Buyer Smart Card used for signing
Seller via SFI	Yes	---	Yes	Yes	Yes
CDP	---	Yes	---	---	---

Scenario E

First, a PayInst acknowledgement is sent from the BFI's back end systems.

This registers the condition.

The CDP accepts the condition for processing then discharges the condition, then the payment is canceled.

A Payment Cancellation message is then received by the BFI, which successfully returns a synchronous Service acknowledgement.

A Cancellation acknowledgement is then sent from the BFI's back end systems.

The condition status is now updated to the status Cancelled.

<i>Originating From BFI</i>	<i>Pay Inst Ack</i>	<i>Payment Condition: Registered</i>	<i>Payment Condition: CDP Processing</i>	<i>Cancellation Ack</i>	<i>Payment Condition: Cancelled</i>
Buyer	Yes 1 Buyer Smart Card used for signing	---	---	Yes 1 Buyer Smart Card used for signing	Yes 2 Buyer details in User Db
Seller via SFI	Yes	---	Yes	Yes	Yes
CDP	---	Yes	---	---	Yes

Glossary

Asynchronous Message	(See also Eleanor Technical Specification and also Synchronous message) means that messages can be sent over a delayed time frame. Following a request, a response can be sent at any time. Whereas with a Synchronous message following a request the system waits until it gets a response.
Bank Name	The name of the Scheme Member to whom this entry relates.
BIC-11	is an 11 digit Bank Identifier Code. The Bank Identifier Code is a unique address which, in telecommunication messages, identifies precisely the financial institutions involved in financial transactions. The BIC Directory Site can be found at http://www.bicdirectory.swift.com/ .
BFI	(See also Eleanor Technical Specification) The Buyers Bank or in Identrus terminology the IP.
BFIM	(See also Eleanor Technical Specification) This is the model used for making a payment. The instruction is submitted by the submitting Corporate through the Buyer Financial Institution.
Biab	Bank in a Box
Buyer	The Buyer wants to purchase goods or services from the Seller. The Buyer is in possession of an Identrus smartcard. The Buyer is granted access to the payment facility by his bank. This is also abbreviated as BU in the Eleanor Scheme and as the SC in the Identrus four corner model
Buyers Bank	The Buyer's Bank manages the Buyer's account from which payment is to be made. The Buyer's Bank issues the Buyer with his Identrus smartcard. The Buyer's Bank is a member of the Identrus schemes.
Cache	A cache is a 'local' store used to hold recently accessed information, so that if further access is required a local copy may be used rather than a 'remote' copy. In most schemes this specifically refers to a local store containing copies of responses from the Identrus Root to certificate status checks.
Cancellation	A cancellation is the revocation of a Payment Request. It may only be applied to a Payment Request, not the payment. Therefore payments that have been paid cannot be cancelled by this method.
Certified Payment Obligation (xPC)	Where an Assured Payment is used, the Buyer requests the Buyer's Bank to underwrite (or assure) the payment to the Seller.
Certified Conditional Payment Obligation (CPC)	This product has the same core characteristics as the Payment Obligation product, with the additional requirement that payment will not be released until evidence that all conditions attached to the payment have been met or

waived. Since its certified the BFI is obliged to make the payment since the Buyer requests the Buyer's Bank to underwrite (or assure) the payment to the Seller.

Conditional Payment Order (CPx)

The Conditional Payment Order has the same core characteristics as the Payment Order product with the additional requirement that payment will not be released until evidence that all conditions attached to the payment have been met or waived. This product is also unilaterally revocable by the Buyer.

Conditional Payment Obligation (CPO)

The Conditional Payment Obligation has the same core characteristics as the payment Obligation product, with the additional requirement that payment will not be released until evidence that all conditions attached to the payment have been met or waived. As with the Payment Obligation, the Buyers Financial institution is not obliged to make the payment if, for instance, there are insufficient funds available in the Buyers account, and the product is bilaterally revocable.

CMS iPlanet Certificate Management System

CPI Corporate Payment Initiation API Library

Customer For the purposes of this document this term describes a customer of a Member of the Identrus Scheme.

FI Code A BIC-11 code owned by the Scheme Member to whom this entry relates.

Identrus four-corner Model

This describes the four parties involved in an Identrus enabled transaction, namely two banks and their respective customers. Where two customers have the same bank, only three parties are involved, and this is known as a 'three party' model.

Identrus Root

The Identrus Root manages membership of the Identrus scheme. The Buyer's Bank and Seller's Bank verify each other's identity via the Identrus Root.

Issuing Participant (IP)

In the Identrus four-corner model this refers to the level 1 Identrus participant that issued the certificate to the Subscribing customer. This equates to "Buyer's Bank" in other payment transaction

iWS iPlanet Web Server

iAS iPlanet Application Server

iTTM iPlanet Trustbase Transaction Manager

iMQ iPlanet Message Queue

iMS iPlanet Messaging System

iTPS	iPlanet Trustbase Payment Services
JMS	is an API. Many implementations of JMS are available from different providers (like IBM MQ and iMQ) and any of them can be used with iTPS
Membership	The current status of the institution concerned. This can take the values Pending, Active, Suspended, Terminated.
Payment Order (xPx)	A Payment order is a revocable, unconditional electronic instruction from the Buyer requesting the Buyer's Bank to execute a credit payment to the Seller on a specific date for a specified amount.
Payment Obligation (xPO)	The commitment from a Buyer to pay a Seller a specified amount on a specified date. There is no obligation on the Buyers Financial Institution to pay if there are insufficient funds available on the due date. The instruction is only revocable bilaterally, i.e. with the assent of the current Holder of the obligation. This product is only supported in the SFI Model, although it will be possible to build it into a procurement application using the CPI library.
Relying Customer (RC)	In the Identrus four-corner model this is the organisation that relies on the identity of the Subscribing customer in order to conduct trade. This equates to 'Seller' in a payment transaction.
Relying Participant (RP)	This refers to the Relying Customer's bank. This equates to "Seller's Bank" in a payment transaction.
Service	The current status of a service. This is used to mark temporary service interruptions. The allowed values are Available and Unavailable.
Seller	The Seller wants to supply goods or services to the Buyer. The Seller is in possession of an Identrus private key. The Seller is granted access to the payment facility by his bank. This is also abbreviated as SE in the Eleanor Scheme and as the RC in the Identrus four corner model.
Sellers Bank	The Seller's Bank manages the Seller's account into which payment is to be made. The Seller's Bank is a member of the Identrus schemes.
SFI	(See also Eleanor Technical Specification) The Sellers Bank or in Identrus terminology the RP
SFIM	(See also Eleanor Technical Specification) This is the model used for initiating a payment. The instruction is submitted by the submitting Corporate through the Seller Financial Institution. This is essentially the same as the Identrus four corner model.

Scheme Register	(See also Eleanor Technical Specification) The Eleanor Scheme has membership criteria. Each participating Financial Institution ensures that corresponding institutions are members of the scheme. It does so via an XML message that is referred to as a scheme register.
Subscribing Customer (SC)	In the Identrus four-corner model this is the end customer of the Identrus enabled service. This equates to the 'Buyer' in a payment transaction.
Synchronous Message	(See also Eleanor Technical Specification) See Asynchronous Message. (See also Eleanor Technical Specification and also Synchronous message) means that messages cannot be sent over a delayed time frame. Following a request, a response is sent immediately before the system can proceed. Whereas with an asynchronous message, following a request, a response can be sent at anytime.
Timeout	is the amount of time (in seconds) for which a client will wait for a server to respond before dropping the connection and returning with a timeout error. In the context of these screens, it is the amount of time the Seller's Bank will wait for the Buyer's Bank to respond.
Transaction	This refers to a complete end to end transaction, potentially involving multiple request-response pairs. Where a single message in such a transaction is referred to the term 'message' is used.
Transaction Reference	(See also Eleanor Technical Specification) The provision and handling of transaction references is key to allowing the Eleanor Payment products to be used effectively from third party systems and to assist in reconciliation of data

Index

A

Add to Shopping Basket 116
Asynchronous Message 198, 201

B

Bank in a box 111, 126
Bank Name 57, 198
BankinaBox MainMenu 127
BFI 134, 198
BFIM 112, 198
BIC-11 198, 199
Buyer 111, 112, 134, 137, 198, 199, 200, 201
Buyers Bank 19, 111, 112, 134, 137, 198
Buyers Bank Certificates 19
Buyers Bank Website Homepage 134

C

cache 198
Cancellation 198
Certificate Configuration 19
Certified Payment Obligation 198
Configuration 17, 18, 19, 53, 157
Configuration Overview 18
Confirm Delivery Details 119, 121

Customer 199, 200, 201

E

Eleanor 13, 57, 134, 198, 200, 201

End User Certificates 129

Enter Delivery Details 118

F

FI Code 57, 199

G

Glossary 197

I

Identrus Four-Corner Model 199, 200, 201

Identrus four-corner Model 199, 200, 201

Identrus Root 19, 198, 199

Initiate Payment 134, 135

Initiating Payment via Buyers Bank Website 134

Initiating Payment via Sellers Website TooledUp 113

Installation 19

Inter-Participant Timeouts 60

Inter-Participant Timeouts Screen 60

Introduction 11

iPlanet Trustbase Payment Services 19, 111, 112, 137

iPlanet Trustbase Payment Services Certificates 19

iPlanet Trustbase Transaction Manager Certificates 19

Issuing Participant (IP) 199

J

JMS 54, 200

M

Making a Payment via the Buyers Bank (BFIM) 112

Membership 56, 199, 200, 201

O

Order List 124

Overall Layout 12

P

Payment 19, 53, 54, 111, 112, 113, 118, 119, 122, 123, 124, 134, 135, 136, 137, 138, 139, 198, 199, 200, 201

Payment Accepted 122

Payment Gateway Preferences 54

Payment Gateway Preferences Screen 54

Payment Initiation 138

Payment Initiation completed successfully 138

Payment Main Menu 53

Payment Order 200

Payment Products 201

Payment Type 119

R

Related Documents 11, 13

Relying Customer (RC) 200

Relying Participant (RP) 200

Restart procedure 93

Running the Four Corner Model (SFIM) 111

Running the Models 111

Running the System 91, 97

Running the Three Corner Model 111

S

Scheme Membership List 56

Scheme Register 201

Seller 111, 198, 199, 200, 201

Sellers Bank 200

Sellers Website Tooled Up Certificates 19

Service 200, 201

SFI 200

SFIM 111, 200

Shopping Bag Details 117

Sign Payment 136

Subscribing Customer (SC) 201

Synchronous Message 198, 201

System Configuration 53

T

Timeout 54, 60, 201

TooledUp Category Selection 115

TooledUp Ltd Catalogs 114

TooledUp Main Menu 113

Transaction 13, 19, 111, 123, 199, 200, 201

Transaction Reference 201

U

Update Backend 133