Balance XML Reporting Guide

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For the latest technical documentation, see the Documentation Portal.

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About this Guide

This guide is intended as a reference guide, to provide information on the available Thredd XML reports.

It describes the Balance XML Data Schema elements, sub-elements and attributes.

Target Audience

Technical teams responsible for the handling and processing of the Thredd balance XML files.

You should have reasonable knowledge of XML/XSD and of the Cards industry.

What's Changed?

If you want to find out what's changed since the previous release, see the Document History section.

How to use this Guide

If you are new to Thredd and want to understand when and how XML files are provided to you, the types of XML files available and how they can be used, see the Introduction and Balance Data Files topics.

To view an example of a Balance report file, see Balance Report Example.

To view the current data schema, see Balance Report XML Schema.

Note: For upcoming versions of the Balance XML schema, see the XSD Schemas section on the Documentation Portal.

For information about the record types and fields in the Balance XML file, see Primary Elements.

Related Documents

Refer to the table below for a list of other relevant documents that should be used together with this guide.

Document	Description
Transaction XML Reporting Guide	Describes the structure and content of the Transaction XML report.
EHI Guide	Provides details of the Thredd External Host Interface (EHI).
Smart Client Guide	Describes how to use the Thredd Smart Client to manage your account.
Web Services Guide (SOAP)	Describes how to use the Thredd SOAP web services API to manage your cards.
Cards API website (REST)	Describes how to use the Thredd REST-based Cards API to manage your cards.

Tip: For the latest technical documentation, see the Documentation Portal.

Section 1: Getting Started

You should read this section if you are new to Thredd reports and want to understand what types of reports are available how they are provided.

Topics covered in this section:

- About this Guide
- Introduction
- Transactional Data Files
- Transactional Data Schema

Tip: To find out what has changed, see the Document History.

1.1 Introduction

Thredd provide a number of daily reports, containing details of transactions processed on the system during the past 24 hours.

This includes both authorisations and financial transactions.

Reports are provided by Secure File Transfer Protocol (sFTP).

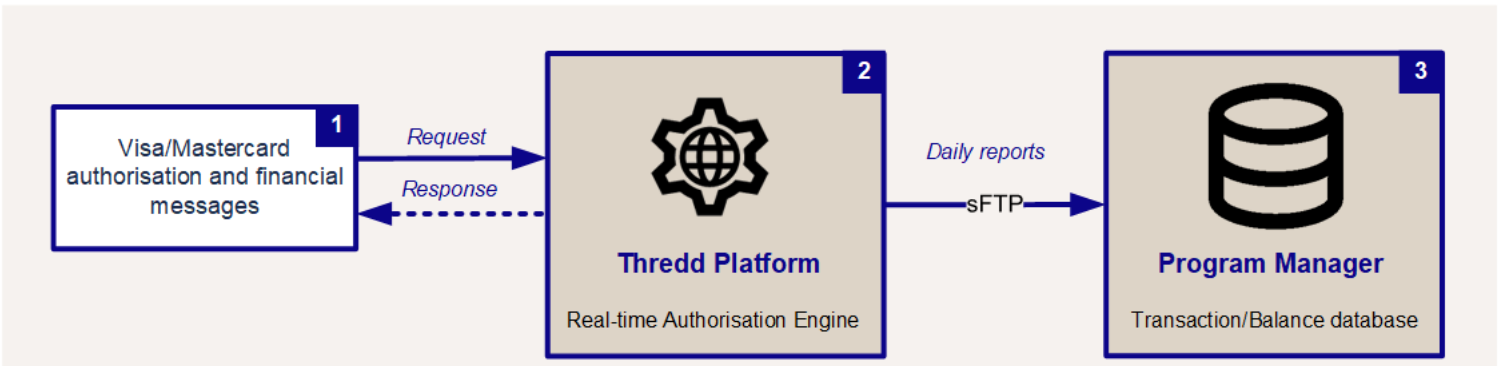

Figure 1: Figure: XML Reporting

1.1.1 Types of Reports

Thredd provides the following daily reports to Program Managers:

- **Balance XML Report** - provides details of the balance on each card
- **Transaction XML Report** - contains details of daily transactions

For Issuers (BIN sponsors) and Self-Issuers, Thredd provides two additional reports:

- **Fee Collection Report** - gives a summary of Scheme (VISA/Mastercard) Fees by ICA and currency
- **Quarterly Management Report (QMR)** - contains information needed to complete your regulatory Quarterly Management Report

Balance XML Report

Balance XML reports are relevant where Thredd maintains details of card balances, such as in the following EHI modes: Cooperative Processing (mode 2), Full Service Processing (mode 3), Gateway Processing with STIP (mode 4) and Gateway Processing with STIP (mode 5). Or it is applicable where EHI is not being used.

The Balance XML report provides details of the balance on each card as at midnight UK time[1] or the time when the XML is run (configurable). You can use this report to confirm how much money is on the card according to Thredd systems (where Thredd maintain the balance). You can compare this to information you hold in your local card database.

The format and content of the balance XML report is described in this guide.

Transaction XML Report

The Transaction XML report provides details of authorisation and financial advices and any other non-scheme transactions that take place, such as card loads/unloads, balance adjustments (via web services), cardholder fees generated by Thredd (you have set up in your fee groups), network scheme fees.

You can use this report to reconcile against Mastercard or Visa settlement advices.

You can also use it to reconcile with data received from EHI.

For more information, see the *Transaction XML Reporting Guide*.

Fee Collection Report

Fee Collection reports are provided to issuers (BIN sponsors) and self-issuers.

The report is a summary of Scheme (Mastercard/Visa) fees by ICA and currency and can be used to reconcile against the Mastercard/Visa Settlement summary reports. It includes transaction categories such as Interregional non-financial ATM transaction fees, fees for ATM PIN management and ATM Balance Inquiry fees. For more information, contact your Thredd Implementation Manager or Account Manager.

Quarterly Scheme Reports (QSRs)

QSRs are provided to issuers and self-issuers and contain quarterly data needed to submit quarterly scheme reports:

- **Mastercard** – Quarterly Management Reports
- **VISA** – Global Operating Certificates

The report provides details needed for quarterly reporting to the Scheme, and includes details such as the number of live cards, card issued, and information on card activity and status. For more information, contact your Thredd Implementation Manager or Account Manager.

[1]Local UK time, which is either Greenwich Mean Time (GMT) or British Summer Time (BST); For details, see: https://www.gov.uk/when-do-the-clocks-change.

1.2 Balance Data Files

Thredd can supply you with daily balance files. Balance files are provided by sFTP.

Note: sFTP files are deleted from the Thredd sFTP server after two calendar days. They are stored on our archive server for a limited period.

1.2.1 Sending of Files

The balance is the balance of the card at the point the report is generated daily, including non-working days and holidays (usually shortly after midday); the generation job can take up to two hours. Balance data arrives around 5pm UK time [1], but this can be configured to align with your chosen cut-off time.

Mastercard Cycles

Mastercard has 6 cycles clearing cycles per day, seven days per week. After each clearing cycle, Mastercard sends us clearing files, which contain the settlement data.

We wait until we process all 8 cycles before generating the balance XML report. We send you a single daily file.

Data from cycles 5-8 from the night before and 1-4 from current day form a compete settlement day picture for most regions. These contain all the information you need to reconcile your settlements with Mastercard.

Asia-Pacific

For Asia-Pacific clients we process cycles 2-8 for the previous day and cycle 1 from the current day, and include them in the daily transaction XML report.

Visa Cycles

Visa provide two files (Domestic and International) each day with different timings for some regions (For example, Australia and Hong Kong). There is a maximum filesize so for the largest clients it is possible that more than one Domestic and/or International file will be received on the same day. [2]

After processing, we will create the balance XML file and send to you.

1.2.2 File Contents

Thredd provides one UTC Balance XML file per Program Manager daily.

The Balance XML file contains a snapshot of balances from the previous day, which is either:

- Cut off of card balance up to midnight UK time from the previous day or the equivalent local midnight cut-off time in your country (if your program has the balance xml at midnight setting enabled in Smart Client).[1]
  - or -
- As at the moment the balance XML is generated, usually around 3:30pm to 6pm UK time, depending on presentment import.

Example 1: midnight setting turned off

On the Saturday 2nd Jan 2023 a file called *GPS-PPPPbalexp20230101.P1.xml* is generated at 5pm, which contains a snapshot of balances as at report creation time of 5pm on Saturday.

---

[1] The *XMLCutoffUTCtime* setting allows you to set the equivalent local midnight cut-off time in your country, if this differs from the UK time. This only applies if the *BalanceXmlAtMidnight* flag is also turned on.

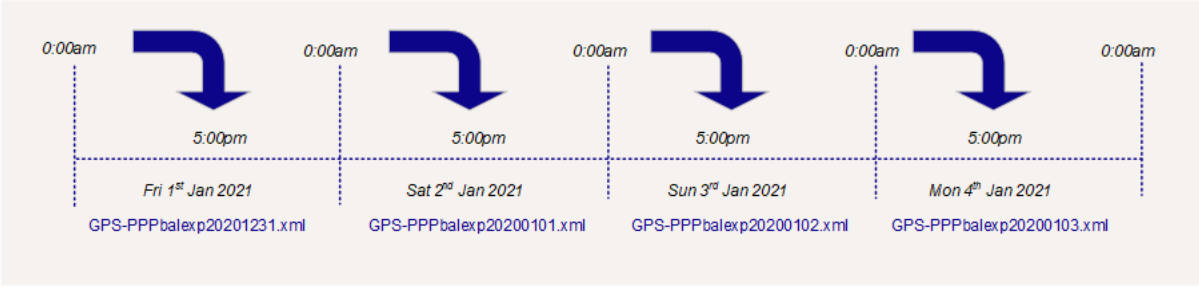

Figure 2: Balance File Reporting Schedule and Filename

Example 2: Midnight setting turned on

On the Saturday 2nd Jan 2023 a file called *GPS-PPPPbalexp20230101.P1.xml* is generated at 5pm, which contains a snapshot of balances as at midnight on Friday.

Example 3: Midnight setting turned on (Australia)

On the Saturday 2nd Jan 2023 a file called *GPS-PPPPbalexp20230101.P1.xml* is generated at 3am local Australian time, which contains a snapshot of balances as at midnight Friday UK time (10am on Saturday Australian time).

1.2.3 File Format and Encryption

For an example of a balance XML file, see Balance XML Example.

File Naming Convention

The balance XML file use the following naming convention:

On-Premise Customers (P0)

GPS-PPPPbalexpYYYYMMDD.xml

Thredd Cloud (P1 and P2)

GPS-PPPPbalexpYYYYMMDD.Pn.xml

Where:

- PPP= The 3-10 letter XML file prefix set up for your programme.
- YYYY= year (4 digits)
- MM = month (2 digits)
- DD = day (2 digits)
- Pn = production environment (2 digits), such as P1and P2. (Not applicable to customers in our UK data centre production environment)

For example:

GPS-NWCtxnexp20230131.P1.xml

Note: The production environment variable is relevant to customers in one of our AWS Cloud-based production environments (P1and P2) and does not apply to exisiting customers in our UK data centre production environment (P0). For details of which production environment applies to your programme, please check with your Thredd implementation manager or account manager.

Encryption

XML files are encrypted using PGP, which requires sharing of keys. For details, contact your Thredd implementation manager or account manager.

Encoding / Type

balance XML data files are well-formed XML (UTF-8 encoded).

> **Note:** XML is case-sensitive, ensure you follow the correct casing for all XML elements and attribute names when processing the message.

[1]Local UK time, which is either Greenwich Mean Time (GMT) or British Summer Time (BST). For details, see: https://www.gov.uk/when-do-the-clocks-change.

[2]Visa Domestic cycle at 9am and International cycle at mid-day, 7 days a week.

1.3 Balance Data Schema

The Balance Data Schema (BDS) describes the structure and possible data values of the Thredd Balance XML file .

You can validate the Balance files you receive against the Schema (XSD file) to check it is in the correct format.

The BDS is an evolving standard and is subject to change as the standard evolves. When we make changes to the BDS, we will implement a new version and notify you.

1.3.1 Schema Versions

The schema is not publicly available. Thredd sends schema files when a new version of the XML is published. The schema filename indicates the schema version number. The schema file contains a comments section with details of version changes.

For an example of the current Balance Data Schema, see Balance XML Schema.

For a history of changes to the Balance Data Schema, see Schema Changes.

Note: For upcoming/future versions of the Balance XML schema, see the XSD Schemas section on the Documentation Portal.

1.3.2 Schema Elements

An XML file conforming to the schema consists of the following elements:

- Primary elements
- Sub-elements and attributes

SECTION 2:
PRIMARY ELEMENTS

This section describes the primary elements in the Balance XML schema.

2.1 Primary Elements

Primary Elements are listed within a <SCHEME> parent element, which defines the top-level entities of the message.

- A SCHEME element can contain multiple ACCOUNT elements
- An ACCOUNT element can contain multiple CARD elements

2.1.1 Balance Report Example showing the Primary Elements

```
<?xml version="1.0" encoding="utf-8"?>
<SCHEME ID="ABC">
  <ACCOUNT>
    …detail ommitted…
    <CARD>…detail ommitted…</CARD>
    <CARD>…detail ommitted…</CARD>
  </ACCOUNT>
  <ACCOUNT>…detail ommitted…</ACCOUNT>
  <ACCOUNT>…detail ommitted…</ACCOUNT>
</SCHEME>
```

2.2 SCHEME

SCHEME records are used to identify the name of scheme used within Thredd. This is a container for the accounts element.

Child Element	Description	Data Type	Required	Constraints/ Permitted Values
ID	The ID attribute identifies the Scheme. This is typically absent for most clients.	xs:string	No	Alphanumeric
ACCOUNT	Account elements describe accounts linked to the Scheme.	ACCOUNT	No	See ACCOUNT

Example

```
<SCHEME>
  <ACCOUNT>
    …detail ommitted…
  </ACCOUNT>
</SCHEME>
```

2.3 ACCOUNT

The ACCOUNT element describes an account, balance and currency information. Cards linked to this account are described inside the CARD element.

An account is included in the Balance report if any of the conditions below are met:

- the account has a non-zero balance
- the account has blocked funds
- the account had a non-zero balance or blocked funds within the last two days

Accounts with a zero balance and no blocked funds will be excluded from the Balance report.

Note: Account Number (ACCNO) and Currency Code (CURRCODE) combine to form a unique record key. Only one instance of an ACCNO/CURRCODE combination can appear in the ACCOUNT element in a Balance report file.

For example:

- You can have two accounts with the same account numbers but different currency codes.
- You cannot have the same account number and the same currency code more than once.

Child Element	Description	Occurs	Data Type	Required	Constraints / Permitted Values
ACCNO	Account number.	1	<ACCNO>	Yes	See ACCNO
CURRCODE	Account 3-letter ISO currency code.	1	<CRDCURRCODE>	Yes	See CRDCURRCODE
ACCTYPE	Account type.	1	<ACCTYPE>	Yes	See ACCTYPE
SORTCODE	Agency Banking sort code (if applicable).	0-1	<SORTCODE>	Optional	See SORTCODE
BANKACC	Agency Banking account number assigned to the card account (if applicable).	0-1	<BANKACC>	Optional	See BANKACC
FEEBAND	Agency Banking Auth Fee Group code (if applicable).	0-1	xs:string	Optional	Alpha, maximum. 10 characters
PAYMENT	Additional payment options activated by card account holder.	0-1	<PAYMENT>	Optional	See PAYMENT
FINAMT	Full account balance. (If negative, will be signed, e.g., -7.00)	1	xs:decimal	Yes	Decimal value
BLKAMT	Pending authorisations amount. (If negative, will be signed)	1	xs:decimal	Yes	Decimal value
AMTAVL	Account balance amount available (i.e., *AMTAVL = FINAMT - BLKAMT*). (If negative, will be signed)	1	xs:decimal	Yes	Decimal value
LINKEDTOKEN	If the card is linked to	0-1	<LINKEDTOKEN>	Optional	See LINKEDTOKEN

Child Element	Description	Occurs	Data Type	Required	Constraints / Permitted Values
	another card with a different account, then the field holds the Thredd public token of the linked card.				
CARD	A card linked to this account.	0-n	<CARD>	Optional	See CARD

Each of the three Account Balance child elements (FINAMT, BLKAMT and AMTAVL) can be updated by the following transaction types:

Note: For details of the transaction type records below, refer to the *Transaction XML Reporting Guide*.

2.3.1 FINAMT

- CardFinancial transactions (RecordType ADV & REV)
- CardChrgBackRepRes transactions (RecordType CB, CBREV, REPRES & REPRESREV)
- CardLoadUnload transactions (RecordType LOAD, LOADREV, UNLOAD & UNLOADREV)
- CardFee transactions
- CardBalAdjust (RecType ADV & REV)
- Approved AgencyBanking transactions

2.3.2 BLKAMT

- CardAuthorisation transactions (RecType ADV)
- A subsequent matching CardAuthorisation Reversal (RecType REV)

2.3.3 AMTAVL

AMTAVL = sum of FINAMT less BLKAMT

Example

```
<ACCOUNT>
  <ACCNO>12345678910121145</ACCNO>
  <CURRCODE>GBP</CURRCODE>
  <ACCTYPE>00</ACCTYPE>
  <FINAMT>238.76</FINAMT>
  <BLKAMT>10.00</BLKAMT>
  <AMTAVL>228.76</AMTAVL>
  <CARD>…detail ommitted…</CARD>
  <CARD>…detail ommitted…</CARD>
</ACCOUNT>
```

2.4 CARD

The CARD element describes a card linked to an ACCOUNT element.

Child Element	Description	Occurs	Data Type	Required	Constraints / Permitted Values
PAN	Primary Account Number.	1	<PAN>	Yes	See PAN
VIRTUAL	Indicates if the card is a physical or virtual card.	1	<VIRTUAL>	Yes	See VIRTUAL
PRIMARY	Indicates whether or not this is the primary card for the account.	1	<PRIMARY>	Yes	See PRIMARY
CRDPRODUCT	The Card Scheme (payment network), which is either Visa (VISA) or Mastercard (MCRD).	1	<CRDPRODUCT>	Yes	See CRDPRODUCT
PROGRAMID	The Co-Brand (i.e. Sub-Scheme) that the Program Manager operates.	0-1	<PROGRAMID>	Optional	See PROGRAMID
CUSTCODE	This may be left blank or populated with the last 8 digits of the PAN.	1	<CUSTCODE>	Yes	See CUSTCODE
STATCODE	The status of the card.	1	<STATCODE>	Yes	See STATCODE
EXPDATE	The expiry date assigned when the card is created. This is either the date you specified when creating the card, or, if a date was not specified, it is based on the default Card Scheme (payment network) validity period in months (i.e., 36 months from the date of card creation). This date is embossed on the card.	1	<EXPDATE>	Yes	See EXPDATE
GPSEXPDATE	The expiry date you specified on activation of the card or on card activation and load. If no expiry date is specified, this date	1	<GPSEXPDATE>	Yes	See GPSEXPDATE

Child Element	Description	Occurs	Data Type	Required	Constraints / Permitted Values
	is based on the Thredd validity period in days configured at product level (e.g., 1095 days from the date of card activation).				
CRDACCNO	Account number of the card. This will be the same as the PAN.	1	<CRDACCNO>	Yes	See CRDACCNO
PRIMARYTOKEN	If you are able to receive full PAN details for your cards, then this field provides the full Primary Account Number (PAN) of the card, as follows: • If the card is a primary card, then this field will display the PAN of the primary card • If the card is a secondary card, then this field will display the PAN of the linked primary card **Note**: This field will not be displayed if you do not receive full PAN or this is a Multi-FX card.	1	<PRIMARYTOKEN>	Optional	See PRIMARYTOKEN
CRDCURRCODE	The 3-digit ISO currency code linked to the card.	1	<CRDCURRCODE>	Yes	See CRDCURRCODE
LINKEDTOKEN	If the card is linked to another card with a different account, then this field holds the Thredd public token of the linked card.	0-1	<LINKEDTOKEN>	Optional	See LINKEDTOKEN
PRODUCTID	Indicates the ID (unique numeric identifier) of the Thredd product associated with the	1	xs:string	Yes	See PRODUCTID

Child Element	Description	Occurs	Data Type	Required	Constraints / Permitted Values
	card.				
LASTUPDATED	Timestamp indicating at what point the reported balance was in effect. This is also the date and time of the last transaction for the current card before the balance report was generated.	1	xs:string	Yes	Maximum 14 characters, DateTime in the format: *YYYYMMDDHHMMSS*

Example

```
<ACCOUNT>
  …detail ommitted…
  <CARD>
    <PAN>1234567812345678</PAN>
    <VIRTUAL>N</VIRTUAL>
    <PRIMARY>Y</PRIMARY>
    <CRDPRODUCT>ABCD</CRDPRODUCT>
    <PROGRAMID>FEDCBA</PROGRAMID>
    <CUSTCODE></CUSTCODE>
    <STATCODE>00</STATCODE>
    <EXPDATE>2022-01-31</EXPDATE>
    <GPSEXPDATE>2021-01-31</GPSEXPDATE>
    <CRDACCNO>DEF123</CRDACCNO>
    <PRIMARYTOKEN>234321042355666</PRIMARYTOKEN>
    <CRDCURRCODE>GBP</CRDCURRCODE>
    <LINKEDTOKEN>6543210123456789</LINKEDTOKEN>
    <PRODUCTID>9001</PRODUCTID>
    <LASTUPDATED>20190307045701</LASTUPDATED>
  </CARD>
  <CARD>
    <PAN>8765432187654321</PAN>
    <VIRTUAL>N</VIRTUAL>
    <PRIMARY>N</PRIMARY>
    <CRDPRODUCT>ABCD</CRDPRODUCT>
    <PROGRAMID>FEDCBA</PROGRAMID>
    <CUSTCODE></CUSTCODE>
    <STATCODE>00</STATCODE>
    <EXPDATE>2022-01-15</EXPDATE>
    <GPSEXPDATE>2021-01-15</GPSEXPDATE>
    <CRDACCNO>DEF123</CRDACCNO>
    <PRIMARYTOKEN>234321042355666</PRIMARYTOKEN>
    <CRDCURRCODE>GBP</CRDCURRCODE>
    <LINKEDTOKEN>6543210123456789</LINKEDTOKEN>
    <PRODUCTID>9001</PRODUCTID>
    <LASTUPDATED>20181012162432</LASTUPDATED>
  </CARD>
</ACCOUNT>
```

SECTION 3:
SUB-ELEMENTS AND ATTRIBUTES

This section describes the sub-elements and attributes in the Balance XML schema.

3.1 Sub-elements and Attributes

This section describes the message sub-elements and attributes, listed below in alphabetical order.

ACCNO	EXPDATE	PRODUCTID
ACCTYPE	ID	PROGRAMID
BANKACC	LINKEDTOKEN	SORTCODE
CRDACCNO	PAN	STATCODE
CRDCURRCODE	PAYMENT	VIRTUAL
CRDPRODUCT	PRIMARY	
CUSTCODE	PRIMARYTOKEN	

3.1.1 ACCNO

The ACCNO element is used to describe the account number in the ACCOUNT element. This number is the 16-19 digit Thredd public token of the created card, and is generated by Thredd. It uses the ACCNO data type.

Description	Base Data Type	Constraints / Permitted Values
The 16-19 digit Thredd public token of the created card generated by Thredd.	xs:string	Numeric, 16-19 characters.

Example

```
<ACCNO>5432160123456789</ACCNO>
```

3.1.2 ACCTYPE

The ACCTYPE element is used to indicate the type of card account.

Description	Base Data Type	Constraints / Permitted Values
Account card type.	xs:string	Numeric string Valid values are: 00 = Domestic Maestro 01 = Mastercard 02 = Visa

Example

```
<ACCTYPE>00</ACCTYPE>
```

3.1.3 BANKACC

The BANKACC element indicates the agency banking account number assigned to the cardholder's account.

Description	Base Data Type	Constraints / Permitted Values
Virtual agency bank account number assigned to the cardholder’s account.	xs:string	Numeric, 8 characters.

Example

```
<BANKACC>12345678</BANKACC>
```

3.1.4 CRDACCNO

The CRDACCNO is used to describe the account number in the CARD element. It uses the CRDACCNO data type.

Description	Base Data Type	Constraints / Permitted Values
Card Account Number.	Xs:string	Numeric, 16-19 characters

Example

```
<CRDACCNO>5432160123456789</CRDACCNO
```

3.1.5 CRDCURRCODE

- The CURRCODE element indicates the currency the ACCOUNT operates.
- The CRDCURRCODE indicates the currency the CARD operates.

Both elements are based on the CRDCURRCODE data type.

Description	Base Data Type	Constraints / Permitted Values
Currency code (ISO 3 digit).	xs:string	Alphanumeric, maximum 3 characters. See Currency Codes.

Example

```
<CURRCODE>GBP</CURRCODE>
<CRDCURRCODE>GBP</CRDCURRCODE>
```

3.1.6 CRDPRODUCT

The CRDPRODUCT element is used to indicate the card network, which is either Visa (VISA) or Mastercard (MCRD).

Description	Base Data Type	Constraints / Permitted Values
The card network, which is either Visa (VISA) or Mastercard (MCRD).	xs:string	Alphanumeric, maximum 4 characters.

Example

```
<CRDPRODUCT>MCRD</CRDPRODUCT>
```

3.1.7 CUSTCODE

This may be left blank or populated with the last 8 digits of the PAN.

Description	Base Data Type	Constraints / Permitted Values
This may be left blank or populated with the last 8 digits of the PAN.	xs:string	Numeric, maximum 8 characters.

Example

```
<CUSTCODE>12345678</CUSTCODE>
```

3.1.8 EXPDATE

The EXPDATE element indicates the expiry date of the card as specified when the card is created.

Description	Base Data Type	Constraints / Permitted Values
The expiry date assigned when the card is created. This is either the date you specified when creating the card, or, if a date was not specified, it is based on the default Card Scheme (payment network) validity period in months (e.g., 36 months from the date of card creation). This date is embossed on the card.	xs:string	Alphanumeric, maximum 10 characters, in the format: *YYYY-MM-DD*.

Example

```
<EXPIRYDATE>2021-01-31</EXPIRYDATE>
```

3.1.9 GPSEXPDATE

The GPSEXPDATE element indicates the expiry date of the card as specified when the card is activated.

Description	Base Data Type	Constraints / Permitted Values
The expiry date you specified on activation of the card or on card activation and load. If no expiry date is specified, this date is based on the Thredd validity period in days configured at product level (e.g., 1095 days from the date of card activation). **Note**: If there is an unknown card without an expiry date (primarily found in the event of a BIN attack) Thredd will convert the null Thredd Expiry Date to an empty string.	xs:string	Alphanumeric, maximum 10 characters, in the format: *YYYY-MM-DD*.

Example

```
<GPSEXPIRYDATE>2021-01-31</GPSEXPIRYDATE>
```

3.1.10 ID

The ID attribute identifies the scheme to which the Balance XML data belongs.

Description	Base Data Type	Constraints / Permitted Values
Scheme to which the balance XML belongs. This is typically blank.	xs:string	Alphanumeric, maximum 3 characters.

Example

```
<SCHEME ID="ABC">
```

3.1.11 LINKEDTOKEN

If the card is linked to another card with a different account, then this field holds the Thredd public token of the linked card.

Description	Base Data Type	Constraints / Permitted Values
This field is populated when the card is linked to another card on a different account. If the card is not linked then this element may be omitted (i.e. not presented at all).	xs:string	Thredd full length public token. Numeric, 16 to 19 digits length.

Example

```
<LINKEDTOKEN>6543210123456789</LINKEDTOKEN>
```

3.1.12 PAN

The PAN element is used to indicate the Primary Account Number of a CARD element. If you are not PCI DSS Compliant then will contain the Thredd 16-digit public token.

Description	Base Data Type	Constraints / Permitted Values
Primary Account Number.	xs:string	Numeric, 16 to 19 characters.

Example

```
<PAN>1234567812345678</PAN>
```

Thredd 16-digit public token

The format of the 16-digit Thredd public token is as follows:

xxxYYYYYYYYYzzzz

where:

- *xxx* – is the 3 digits derived from the Thredd internal scheme ID
- *YYYYYYYYY* – is the 9-digit Thredd public token
- *zzzz* – is the last 4 digits of the card's PAN

3.1.13 PAYMENT

The PAYMENT element describes additional payment options selected by the card account holder.

<table>
<tr><th>Description</th><th>Base Data Type</th><th>Constraints / Permitted Values</th></tr>
<tr><td>Additional payment options activated by the card account holder. The code is a combination of the code for activated receipt options and the code for activated payment options.</td><td>xs:string</td><td>Alphanumeric string of 4 characters.
Valid receipt values are:

<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>R0</td><td>No Receipt Options</td></tr>
<tr><td>R1</td><td>BACS Receipts Only</td></tr>
<tr><td>R2</td><td>Faster Payment Receipts Only</td></tr>
<tr><td>R5</td><td>Both Receipt Options</td></tr>
</table>

Valid payment values are:

<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>P0</td><td>No Outbound Options</td></tr>
<tr><td>P1</td><td>Outbound Faster Payments Only</td></tr>
<tr><td>P2</td><td>Direct Debit Payments Only</td></tr>
<tr><td>P5</td><td>Both Outbound Payments Option</td></tr>
</table>
</td></tr>
</table>

Example

```
<PAYMENT>R5P1</PAYMENT>
```

3.1.14 PRIMARY

The PRIMARY element indicates whether or not the card is the Primary card on the account. There can only be one Primary card on a given account.

Description	Base Data Type	Constraints / Permitted Values
Primary Account flag.	xs:string	Valid values: Y = Yes N= No

Example

```
<PRIMARY>Y</PRIMARY>
```

3.1.15 PRIMARYTOKEN

Provides the full Primary Account Number (PAN) of the card.

Note: This field is only available if you receive the full, unencrypted PAN; if you do not receive the full PAN, then this field will not appear.

Description	Base Data Type	Constraints / Permitted Values
Provides the full Primary Account Number (PAN) of the card. • If the card is a primary card, then this field will display the PAN of the primary card • If the card is a secondary card, then this field will display the PAN of the linked primary card	xs:string	Thredd full length PAN. Numeric, 16 to 19 digits length.

Example

```
<PRIMARYTOKEN>234321042355666</PRIMARYTOKEN>
```

3.1.16 PRODUCTID

The PRODUCTID element indicates the ID of product associated with the card.

Description	Base Data Type	Constraints / Permitted Values
The ID of the product associated with the card.	xs:string	Numeric, 5 maximum.

Example

```
<PRODUCTID>1234</PRODUCTID>
```

3.1.17 PROGRAMID

The PROGRAMID element indicates the program to which the card is linked.

Description	Base Data Type	Constraints / Permitted Values
Program Identifier, the Co-Brand (i.e. Sub-Scheme) that the Programme Manager operates.	xs:string	Alphanumeric, maximum 6 characters.

Example

```
<PROGRAMID>FEDCBA</PROGRAMID>
```

3.1.18 SORTCODE

The SORTCODE element indicates the agency banking sort code assigned to the card program.

Description	Base Data Type	Constraints / Permitted Values
Agency banking sort code applicable to the card program.	xs:string	Numeric, 6 characters.

Example

```
<SORTCODE>123456</SORTCODE>
```

3.1.19 STATCODE

The STATCODE element indicates the card status.

Description	Base Data Type	Constraints / Permitted Values
The card status.	xs:string	Numeric, maximum 2 characters, see Card Status Codes.

Example

```
<STATCODE>00</STATCODE>
```

3.1.20 VIRTUAL

The VIRTUAL element indicates whether the card is a physical or a virtual card.

Description	Base Data Type	Constraints / Permitted Values
Physical or virtual card flag.	xs:string	Valid values: Y = Virtual card N = Physical card

Example

```
<VIRTUAL>Y</VIRTUAL>
```

SECTION 4: APPENDICES

This section provides a list of appendices.

4.1 Appendices

Refer to the table below for details of available appendices:

Appendix	Description
ISO Country Codes	List of ISO country codes.
ISO Currency Codes	List of ISO currency codes.
Card Status Codes	Card status codes.
Balance Report Example	Provides an example of a balance report.
Balance Report XML Schema	Provides a description of the balance report XML schema.

4.2 ISO Country Codes

The table below provides details of ISO two-digit country codes.

Value	Country names
AD	Andorra
AE	United Arab Emirates
AF	Afghanistan
AG	Antigua and Barbuda
AI	Anguilla
AL	Albania
AM	Armenia
AN	Netherlands Antilles
AO	Angola
AQ	Antarctica
AR	Argentina
AS	American Samoa
AT	Austria
AU	Australia
AW	Aruba
AX	Åland Islands
AZ	Azerbaijan
BA	Bosnia and Herzegovina
BB	Barbados
BD	Bangladesh
BE	Belgium
BF	Burkina Faso
BG	Bulgaria

Value	Country names
GL	Greenland
GM	Gambia
GN	Guinea
GP	Guadeloupe
GQ	Equatorial Guinea
GR	Greece
GS	South Georgia and the South Sandwich Islands
GT	Guatemala
GU	Guam
GW	Guinea-Bissau
GY	Guyana
HK	Hong Kong
HM	Heard Island and McDonald Islands
HN	Honduras
HR	Croatia
HT	Haiti
HU	Hungary
ID	Indonesia
IE	Ireland
IL	Israel
IM	Isle of Man
IN	India

Value	Country names
NP	Nepal
NR	Nauru
NU	Niue
NZ	New Zealand
OM	Oman
PA	Panama
PE	Peru
PF	French Polynesia
PG	Papua New Guinea
PH	Philippines
PK	Pakistan
PL	Poland
PM	Saint Pierre and Miquelon
PN	Pitcairn
PR	Puerto Rico
PS	Palestinian Territory, Occupied
PT	Portugal
PW	Palau
PY	Paraguay
QA	Qatar
QZ	UNMI Kosovo
RE	Réunion
RO	Romania

Value	Country names
BH	Bahrain
BI	Burundi
BJ	Benin
BL	Saint Barthélemy
BM	Bermuda
BN	Brunei Darussalam
BO	Bolivia, Plurinational State of
BQ	Bonaire, Sint Eustatius and Saba
BR	Brazil
BS	Bahamas
BT	Bhutan
BV	Bouvet Island
BW	Botswana
BY	Belarus
BZ	Belize
CA	Canada
CC	Cocos (Keeling) Islands
CD	Congo, the Democratic Republic of the
CF	Central African Republic
CG	Congo
CH	Switzerland
CI	Côte d'Ivoire
CK	Cook Islands
CL	Chile

Value	Country names
IO	British Indian Ocean Territory
IQ	Iraq
IR	Iran, Islamic Republic of
IS	Iceland
IT	Italy
JE	Jersey
JM	Jamaica
JO	Jordan
JP	Japan
KE	Kenya
KG	Kyrgyzstan
KH	Cambodia
KI	Kiribati
KM	Comoros
KN	Saint Kitts and Nevis
KP	Korea, Democratic People's Republic of
KR	Korea, Republic of
KW	Kuwait
KY	Cayman Islands
KZ	Kazakhstan
LA	Lao People's Democratic Republic
LB	Lebanon
LC	Saint Lucia
LI	Liechtenstein

Value	Country names
RS	Serbia
RU	Russian Federation
RW	Rwanda
SA	Saudi Arabia
SB	Solomon Islands
SC	Seychelles
SD	Sudan
SE	Sweden
SG	Singapore
SH	Saint Helena, Ascension and Tristan da Cunha
SI	Slovenia
SJ	Svalbard and Jan Mayen
SK	Slovakia
SL	Sierra Leone
SM	San Marino
SN	Senegal
SO	Somalia
SR	Suriname
SS	South Sudan
ST	Sao Tome and Principe
SV	El Salvador
SX	Sint Maarten(D)
SY	Syrian Arab Republic
SZ	Swaziland
TC	Turks and Caicos Islands

Value	Country names
CM	Cameroon
CN	China
CO	Colombia
CR	Costa Rica
CU	Cuba
CV	Cape Verde
CW	Curaçao
CX	Christmas Island
CY	Cyprus
CZ	Czech Republic
DD	Federal Republic of Germany
DE	Germany
DJ	Djibouti
DK	Denmark
DM	Dominica
DO	Dominican Republic
DZ	Algeria
EC	Ecuador
EE	Estonia
EG	Egypt
EH	Western Sahara
ER	Eritrea
ES	Spain
ET	Ethiopia
FI	Finland

Value	Country names
LK	Sri Lanka
LR	Liberia
LS	Lesotho
LT	Lithuania
LU	Luxembourg
LV	Latvia
LY	Libyan Arab Jamahiriya
MA	Morocco
MC	Monaco
MD	Moldova, Republic of
ME	Montenegro
MF	Saint Martin (French part)
MG	Madagascar
MH	Marshall Islands
MK	Macedonia, the former Yugoslav Republic of
ML	Mali
MM	Myanmar
MN	Mongolia
MO	Macao
MP	Northern Mariana Islands
MQ	Martinique
MR	Mauritania
MS	Montserrat
MT	Malta
MU	Mauritius

Value	Country names
TD	Chad
TF	French Southern Territories
TG	Togo
TH	Thailand
TJ	Tajikistan
TK	Tokelau
TL	Timor-Leste
TM	Turkmenistan
TN	Tunisia
TO	Tonga
TR	Turkey
TT	Trinidad and Tobago
TV	Tuvalu
TW	Taiwan, Province of China
TZ	Tanzania, United Republic of
UA	Ukraine
UG	Uganda
UM	United States Minor Outlying Islands
US	United States
UY	Uruguay
UZ	Uzbekistan
VA	Holy See (Vatican City State)
VC	Saint Vincent and the Grenadines

Value	Country names
FJ	Fiji
FK	Falkland Islands (Malvinas)
FM	Micronesia, Federated States of
FO	Faroe Islands
FR	France
GA	Gabon
GB	United Kingdom
GD	Grenada
GE	Georgia
GF	French Guiana
GG	Guernsey
GH	Ghana
GI	Gibraltar

Value	Country names
MV	Maldives
MW	Malawi
MX	Mexico
MY	Malaysia
MZ	Mozambique
NA	Namibia
NC	New Caledonia
NE	Niger
NF	Norfolk Island
NG	Nigeria
NI	Nicaragua
NL	Netherlands
NO	Norway

Value	Country names
VE	Venezuela, Bolivarian Republic of
VG	Virgin Islands, British
VI	Virgin Islands, U.S.
VN	Viet Nam
VU	Vanuatu
WF	Wallis and Futuna
WS	Samoa
YE	Yemen
YT	Mayotte
ZA	South Africa
ZM	Zambia
ZW	Zimbabwe

4.3 ISO Currency Codes

The table below lists the ISO and Visa/Mastercard currency codes.

Code	Number	Exponent	Currency
AED	784	2	United Arab Emirates dirham
AFN	971	2	Afghan afghani
ALL	008	2	Albanian lek
AMD	051	2	Armenian dram
ANG	532	2	Netherlands Antillean guilder
AOA	973	2	Angolan kwanza
ARS	032	2	Argentine peso
AUD	036	2	Australian dollar
AWG	533	2	Aruban florin
AZN	944	2	Azerbaijani manat
BAM	977	2	Bosnia and Herzegovina convertible mark
BBD	052	2	Barbados dollar
BDT	050	2	Bangladeshi taka
BGN	975	2	Bulgarian lev
BHD	048	3	Bahraini dinar
BIF	108	0	Burundian franc
BMD	060	2	Bermudian dollar
BND	096	2	Brunei dollar
BOB	068	2	Boliviano
BOV	984	2	Bolivian Mvdol
BRL	986	2	Brazilian real
BSD	044	2	Bahamian dollar
BTN	064	2	Bhutanese ngultrum
BWP	072	2	Botswana pula
BYN	933	2	Belarusian ruble (new)
BYR	974	2	Belarusian Ruble (old)

Code	Number	Exponent	Currency
BZD	084	2	Belize dollar
CAD	124	2	Canadian dollar
CDF	976	2	Congolese franc
CHE	947	2	Swiss WIR Euro
CHF	756	2	Swiss franc
CHW	948	2	Swiss WIR Franc
CLF	990	4	Chile Unidad de Fomento
CLP	152	0	Chilean peso
CNH	157	2	Chinese Offshore Renminbi/Yuan
CNY	156	2	Chinese Renminbi/Yuan
COP	170	2	Colombian peso
COU	970	2	Unidad de Valor Real (UVR)
CRC	188	2	Costa Rican colon
CUC	931	2	Cuban convertible peso
CUP	192	2	Cuban peso
CVE	132	0	Cape Verde escudo
CZK	203	2	Czech koruna
DJF	262	0	Djiboutian franc
DKK	208	2	Danish krone
DOP	214	2	Dominican peso
DZD	012	2	Algerian dinar
EGP	818	2	Egyptian pound
ERN	232	2	Eritrean nakfa
ETB	230	2	Ethiopian birr
EUR	978	2	Euro
FJD	242	2	Fiji dollar
FKP	238	2	Falkland Islands pound
GBP	826	2	Great Britain (UK) Pound Sterling

Code	Number	Exponent	Currency
GEL	981	2	Georgian lari
GHS	936	2	Ghanaian cedi
GIP	292	2	Gibraltar pound
GMD	270	2	Gambian dalasi
GNF	324	0	Guinean franc
GTQ	320	2	Guatemalan quetzal
GYD	328	2	Guyanese dollar
HKD	344	2	Hong Kong dollar
HNL	340	2	Honduran lempira
HRK	191	2	Croatian kuna
HTG	332	2	Haitian gourde
HUF	348	2	Hungarian forint
IDR	360	2	Indonesian rupiah
ILS	376	2	Israeli new shekel
INR	356	2	Indian rupee
IQD	368	3	Iraqi dinar
IRR	364	2	Iranian rial
ISK	352	0	Icelandic króna
JMD	388	2	Jamaican dollar
JOD	400	3	Jordanian dinar
JPY	392	0	Japanese yen
KES	404	2	Kenyan shilling
KGS	417	2	Kyrgyzstani som
KHR	116	2	Cambodian riel
KMF	174	0	Comoro franc
KPW	408	2	North Korean won
KRW	410	0	South Korean won
KWD	414	3	Kuwaiti dinar

Code	Number	Exponent	Currency
KYD	136	2	Cayman Islands dollar
KZT	398	2	Kazakhstani tenge
LAK	418	2	Lao kip
LBP	422	2	Lebanese pound
LKR	144	2	Sri Lankan rupee
LRD	430	2	Liberian dollar
LSL	426	2	Lesotho loti
LYD	434	3	Libyan dinar
MAD	504	2	Moroccan dirham
MDL	498	2	Moldovan leu
MGA	969	2	Malagasy ariary
MKD	807	2	Macedonian denar
MMK	104	2	Myanmar kyat
MNT	496	2	Mongolian tögrög
MOP	446	2	Macanese pataca
MRO	478	2	Mauritanian ouguiya (old)
MRU	929	2	Mauritanian ouguiya (new)
MUR	480	2	Mauritian rupee
MVR	462	2	Maldivian rufiyaa
MWK	454	2	Malawian kwacha
MXN	484	2	Mexican peso
MXV	979	2	Mexican Unidad de Inversion (UDI)
MYR	458	2	Malaysian ringgit
MZN	943	2	Mozambican metical
NAD	516	2	Namibian dollar
NGN	566	2	Nigerian naira
NIO	558	2	Nicaraguan córdoba
NOK	578	2	Norwegian krone

Code	Number	Exponent	Currency
NPR	524	2	Nepalese rupee
NZD	554	2	New Zealand dollar
OMR	512	3	Omani rial
PAB	590	2	Panamanian balboa
PEN	604	2	Peruvian sol
PGK	598	2	Papua New Guinean kina
PHP	608	2	Philippine peso
PKR	586	2	Pakistani rupee
PLN	985	2	Polish zloty (new)
PYG	600	0	Paraguayan guaraní
QAR	634	2	Qatari riyal
RON	946	2	Romanian leu
RSD	941	2	Serbian dinar
RUB	643	2	Russian ruble (old)
RUR	810	2	Russian ruble
RWF	646	0	Rwandan franc
SAR	682	2	Saudi riyal
SBD	090	2	Solomon Islands dollar
SCR	690	2	Seychelles rupee
SDG	938	2	Sudanese pound
SEK	752	2	Swedish krona/kronor
SGD	702	2	Singapore dollar
SHP	654	2	Saint Helena pound
SLE	925	2	Sierra Leonean leone (new)
SLL	694	2	Sierra Leonean leone (old)
SOS	706	2	Somali shilling
SRD	968	2	Surinamese dollar
SSP	728	2	South Sudanese pound

Code	Number	Exponent	Currency
STD	678	2	São Tomé and Príncipe dobra (old)
STN	930	2	São Tomé and Príncipe dobra (new)
SVC	222	2	Salvadoran colón
SYP	760	2	Syrian pound
SZL	748	2	Swazi lilangeni
THB	764	2	Thai baht
TJS	972	2	Tajikistani somoni
TMM	795	0	Turkmenistan manat (old)
TMT	934	2	Turkmenistan manat (new)
TND	788	3	Tunisian dinar
TOP	776	2	Tongan pa-anga
TRL	792	2	Turkish lira
TRY	949	2	Turkish lira
TTD	780	2	Trinidad and Tobago dollar
TWD	901	2	New Taiwan dollar
TZS	834	2	Tanzanian shilling
UAH	980	2	Ukrainian hryvnia
UGX	800	0	Ugandan shilling
USD	840	2	United States dollar
USN	997	2	US Dollar (next day)
USS	998	2	US Dollar (same day)
UYI	940	0	Uruguay Peso en Unidades Indexadas
UYU	858	2	Uruguayan peso
UYW	927	4	Unidad previsional
UZS	860	2	Uzbekistan som
VEF	937	2	Venezuelan Bolivar Fuerte (old)
VES	928	2	Venezuelan bolívar soberano (new)
VND	704	0	Vietnamese dong

Code	Number	Exponent	Currency
VUV	548	0	Vanuatu vatu
WST	882	2	Samoan tala
XAF	950	0	CFA franc BEAC
XAG	961	2	Silver (one troy ounce)
XAU	959	2	Gold (one troy ounce)
XBA	955	2	European Composite Unit (EURCO) (bond market unit)
XBB	956	2	European Monetary Unit (E.M.U.-6) (bond market unit)
XBC	957	2	European Unit of Account 9 (E.U.A.-9) (bond market unit)
XBD	958	2	European Unit of Account 17 (E.U.A.-17) (bond market unit)
XCD	951	2	East Caribbean dollar
XDR	960	2	Special drawing rights
XOF	952	0	CFA franc BCEAO
XPD	964	2	Palladium (one troy ounce)
XPF	953	0	CFP franc (franc Pacifique)
XPT	962	2	Platinum (one troy ounce)
XSU	994	2	SUCRE
XTS	963	2	Code reserved for testing purposes
XUA	965	2	ADB Unit of Account
XXX	999	2	No currency
YER	886	2	Yemeni rial
ZAR	710	2	South African rand
ZMK	894	2	Zambian kwacha (old)
ZMW	967	2	Zambian kwacha (new)
ZWD	716	2	Zimbabwean dollar
ZWL	932	2	Zimbabwean dollar A/10

4.4 Card Status Codes

The table below provides details of possible card status codes. These are status values that you can set for a card via Smart Client or ThreddAPI or the Cards API (refer to the *Web Services Guide SOAP* or the Cards API website).

Status Code	Description
00	All Good. Indicates that the card is good for use, but does not indicate whether it is active.
02	Card not yet activated
04	Capture card
05	Do not honour
14	Invalid card (if you receive this status, it indicates that this card does not exist on the Thredd system and was used for a fraudulent transaction)
41	Lost card
43	Stolen card
46	Closed account
54	Expired card
57	Transaction not permitted to cardholder
59	Suspected fraud
62	Restricted card
63	Security violation
70	Cardholder to contact Issuer (BIN sponsor).
83	Card destroyed
98	Refund given to customer
99	Card voided
G1	A short-term block which temporarily blocks card usage for all card transactions (excluding Credits and Refunds) for a short period.
G2	Short-term full block (all transactions are blocked).
G3	Long-term block (excluding Credits and Refunds).
G4	Long-term full block (all transactions are blocked).
G5	Thredd Protect: A short-term block which temporarily blocks card usage for all card transactions (excluding Credits and Refunds) for a short period.
G6	Thredd Protect: Short-term full block (all transactions are blocked).
G7	Thredd Protect: Long-term block (excluding Credits and Refunds).

Status Code	Description
G8	Thredd Protect: Long-term full block (all transactions are blocked).
G9	IVR Lost/Stolen block. Non-reversable status, equivalent to status code 41.

4.5 Balance Report Example

Below is an example of a Balance report, containing fictional data. For a description of the XML schema, see Balance Report XML Schema.

```
<?xml version="1.0" encoding="UTF-8"?>
<SCHEME ID="<MadCap:variable name="General.BrandName" xmlns:MadCap="http://www.madcapsoftware.com/Schemas/MadCap.xsd" />">
  <ACCOUNT>
    <ACCNO>3641040414129330</ACCNO>
    <CURRCODE>GBP</CURRCODE>
    <ACCTYPE>01</ACCTYPE>
    <FINAMT>5.70</FINAMT>
    <BLKAMT>0.00</BLKAMT>
    <AMTAVL>5.70</AMTAVL>
    <LINKEDTOKEN>1234040414129331</LINKEDTOKEN>
    <CARD>
      <PAN>1234040414129330</PAN>
      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>Y</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
      <PROGRAMID>PMT</PROGRAMID>
      <CUSTCODE>14129330</CUSTCODE>
      <STATCODE>00</STATCODE>
      <EXPDATE>2022-01-31</EXPDATE>
      <GPSEXPDATE>2021-01-31</GPSEXPDATE>
      <CRDACCNO>3641040414129330</CRDACCNO>
      <PRIMARYTOKEN>1234040414129330</PRIMARYTOKEN>
      <CRDCURRCODE>GBP</CRDCURRCODE>
      <LINKEDTOKEN>3641040414129330</LINKEDTOKEN>
      <PRODUCTID>1234</PRODUCTID>
      <LASTUPDATED>20190306141804</LASTUPDATED>
    </CARD>
    <CARD>
      <PAN>1234241730512284</PAN>
      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>N</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
      <PROGRAMID>PMT</PROGRAMID>
      <CUSTCODE>30512284</CUSTCODE>
      <STATCODE>00</STATCODE>
      <EXPDATE>2022-01-31</EXPDATE>
      <GPSEXPDATE>2021-01-31</GPSEXPDATE>
      <CRDACCNO>3641040414129330</CRDACCNO>
      <PRIMARYTOKEN>1234241730512284</PRIMARYTOKEN>
      <CRDCURRCODE>GBP</CRDCURRCODE>
      <LINKEDTOKEN>3641040414129330</LINKEDTOKEN>
      <PRODUCTID>1234</PRODUCTID>
      <LASTUPDATED>20190128010438</LASTUPDATED>
    </CARD>
  </ACCOUNT>
  <ACCOUNT>
    <ACCNO>1234002317022966</ACCNO>
    <CURRCODE>GBP</CURRCODE>
    <ACCTYPE>01</ACCTYPE>
    <FINAMT>28.45</FINAMT>
    <BLKAMT>0.00</BLKAMT>
    <AMTAVL>28.45</AMTAVL>
    <CARD>
      <PAN>1234002317022966</PAN>
      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>Y</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
      <PROGRAMID>PMT</PROGRAMID>
      <CUSTCODE>17022966</CUSTCODE>
      <STATCODE>00</STATCODE>
      <EXPDATE>2022-01-31</EXPDATE>
      <GPSEXPDATE>2021-01-31</GPSEXPDATE>
      <CRDACCNO>3641002317022966</CRDACCNO>
      <PRIMARYTOKEN>1234002317022966</PRIMARYTOKEN>
      <CRDCURRCODE>GBP</CRDCURRCODE>
      <PRODUCTID>1234</PRODUCTID>
```

```
      <LASTUPDATED>20190207204750</LASTUPDATED>
    </CARD>
  </ACCOUNT>
  <ACCOUNT>
    <ACCNO>3213425220704785</ACCNO>
    <CURRCODE>EUR</CURRCODE>
    <ACCTYPE>01</ACCTYPE>
    <FINAMT>-7.00</FINAMT>
    <BLKAMT>0.00</BLKAMT>
    <AMTAVL>-7.00</AMTAVL>
    <LINKEDTOKEN>3213425220704785</LINKEDTOKEN>
    <CARD>
      <PAN>3213366722963138</PAN>
      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>N</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
      <PROGRAMID>448</PROGRAMID>
      <CUSTCODE>22963138</CUSTCODE>
      <STATCODE>00</STATCODE>
      <EXPDATE>2022-01-31</EXPDATE>
      <GPSEXPDATE>2021-01-31</GPSEXPDATE>
      <CRDACCNO>3213425220704785</CRDACCNO>
      <PRIMARYTOKEN>3213425220704785</PRIMARYTOKEN>
      <CRDCURRCODE>EUR</CRDCURRCODE>
      <LINKEDTOKEN>3213425220704785</LINKEDTOKEN>
      <PRODUCTID>1234</PRODUCTID>
      <LASTUPDATED>20190301063737</LASTUPDATED>
    </CARD>
    <CARD>
      <PAN>3213425220704785</PAN>
      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>Y</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
      <PROGRAMID>448</PROGRAMID>
      <CUSTCODE>20704785</CUSTCODE>
      <STATCODE>00</STATCODE>
      <EXPDATE>2022-01-31</EXPDATE>
      <GPSEXPDATE>2021-01-31</GPSEXPDATE>
      <CRDACCNO>3213425220704785</CRDACCNO>
      <CRDCURRCODE>EUR</CRDCURRCODE>
      <PRIMARYTOKEN>3213425220704785</PRIMARYTOKEN>
      <LINKEDTOKEN>3213425220704785</LINKEDTOKEN>
      <PRODUCTID>1234</PRODUCTID>
      <LASTUPDATED>20190303181455</LASTUPDATED>
    </CARD>
    <CARD>
      <PAN>3219518230396859</PAN>
      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>N</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
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      <CRDCURRCODE>EUR</CRDCURRCODE>
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      <LINKEDTOKEN>3213425220704785</LINKEDTOKEN>
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  <ACCOUNT>
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    <CURRCODE>GBP</CURRCODE>
    <ACCTYPE>01</ACCTYPE>
    <FINAMT>5.00</FINAMT>
    <BLKAMT>0.00</BLKAMT>
    <AMTAVL>5.00</AMTAVL>
    <LINKEDTOKEN>5273593578585571</LINKEDTOKEN>
```

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      <PRIMARY>N</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
      <PROGRAMID>PMT</PROGRAMID>
      <CUSTCODE>07791793</CUSTCODE>
      <STATCODE>00</STATCODE>
      <EXPDATE>2022-01-31</EXPDATE>
     <GPSEXPDATE>2021-01-31</GPSEXPDATE>
      <CRDACCNO>5273593578585571</CRDACCNO>
      <PRIMARYTOKEN>5273593578585571</PRIMARYTOKEN>
      <CRDCURRCODE>GBP</CRDCURRCODE>
      <LINKEDTOKEN>5273593578585571</LINKEDTOKEN>
      <PRODUCTID>1234</PRODUCTID>
      <LASTUPDATED>20190226112604</LASTUPDATED>
    </CARD>
  </ACCOUNT>
  <ACCOUNT>
    <ACCNO>5273593578585571</ACCNO>
    <CURRCODE>GBP</CURRCODE>
    <ACCTYPE>01</ACCTYPE>
    <FINAMT>2.75</FINAMT>
    <BLKAMT>0.00</BLKAMT>
    <AMTAVL>2.75</AMTAVL>
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    <CARD>
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      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>Y</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
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      <CUSTCODE>78585571</CUSTCODE>
      <STATCODE>00</STATCODE>
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      <PRIMARYTOKEN>5273593578585571</PRIMARYTOKEN>
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      <LINKEDTOKEN>5273593578585571</LINKEDTOKEN>
      <PRODUCTID>1234</PRODUCTID>
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  <ACCOUNT>
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    <ACCTYPE>02</ACCTYPE>
    <FINAMT>-15.81</FINAMT>
    <BLKAMT>0.00</BLKAMT>
    <AMTAVL>-15.81</AMTAVL>
    <CARD>
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      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>Y</PRIMARY>
      <CRDPRODUCT>VISA</CRDPRODUCT>
      <PROGRAMID>EXVUSD</PROGRAMID>
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      <GPSEXPDATE>2021-01-31</GPSEXPDATE>
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      <PRIMARYTOKEN>4321000987654321</PRIMARYTOKEN>
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    </CARD>
  </ACCOUNT>
  <ACCOUNT>
    <ACCNO>5679871234554321</ACCNO>
    <CURRCODE>GBP</CURRCODE>
```

```
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    <SORTCODE>012345</SORTCODE>
    <BANKACC>12345678</BANKACC>
    <FEEBAND>SAMPLE-AB</FEEBAND>
    <PAYMENT>R5P1</PAYMENT>
    <FINAMT>19.20</FINAMT>
    <BLKAMT>17.00</BLKAMT>
    <AMTAVL>2.20</AMTAVL>
    <CARD>
      <PAN>1234871234554321</PAN>
      <VIRTUAL>N</VIRTUAL>
      <PRIMARY>Y</PRIMARY>
      <CRDPRODUCT>MCRD</CRDPRODUCT>
      <PROGRAMID>SAMPLE</PROGRAMID>
      <CUSTCODE>05623001</CUSTCODE>
      <STATCODE>00</STATCODE>
      <EXPDATE>2022-01-31</EXPDATE>
      <GPSEXPDATE>2021-01-31</GPSEXPDATE>
      <CRDACCNO>5679871234554321</CRDACCNO>
      <PRIMARYTOKEN>1234871234554321</PRIMARYTOKEN>
      <CRDCURRCODE>GBP</CRDCURRCODE>
      <PRODUCTID>1235</PRODUCTID>
      <LASTUPDATED>20190303160638</LASTUPDATED>
    </CARD>
  </ACCOUNT>
</SCHEME>
```

4.6 Balance Report XML Schema

Below is a copy of the latest Balance Report XML schema.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns="" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:msdata="urn:schemas-microsoft-com:xml-msdata" id="Balances">
  <xs:complexType name="CARD">
    <xs:sequence>
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          <xs:restriction base="xs:string">
            <xs:minLength value="15"/>
            <xs:maxLength value="19"/>
            <xs:pattern value="^\d+$"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="VIRTUAL" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:enumeration value="Y"/>
            <xs:enumeration value="N"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="PRIMARY" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:enumeration value="Y"/>
            <xs:enumeration value="N"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
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            <xs:maxLength value="4"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
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          <xs:restriction base="xs:string">
            <xs:maxLength value="6"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="CUSTCODE" minOccurs="1" maxOccurs="1" nillable="false">
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          <xs:restriction base="xs:string">
            <xs:maxLength value="8"/>
          </xs:restriction>
        </xs:simpleType>
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      <xs:element name="STATCODE" type="STATCODE" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="EXPDATE" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="10"/>
            <xs:pattern value="^(20)\d\d[- /.](0[1-9]|1[012])[- /.](0[1-9]|[12][0-9]|3[01])$"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="GPSEXPDATE" minOccurs="0" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="10"/>
            <xs:pattern value="^$|^(20)\d\d[- /.](0[1-9]|1[012])[- /.](0[1-9]|[12][0-9]|3[01])$"/>
          </xs:restriction>
        </xs:simpleType>
```

```
      </xs:element>
      <xs:element name="CRDACCNO" type="ACCNO" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="PRIMARYTOKEN" minOccurs="0" maxOccurs="1" nillable="false">
        <xs:simpleType>
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            <xs:minLength value="15"/>
            <xs:maxLength value="19"/>
            <xs:pattern value="^\d+$"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="CRDCURRCODE" type="CRDCURRCODE" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="LINKEDTOKEN" type = "xs:decimal" minOccurs = "0" maxOccurs = "1" nillable = "false"/>
      <xs:element name="PRODUCTID" minOccurs="0" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="5"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="LASTUPDATED" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:pattern value=""/>
            <xs:maxLength value="14"/>
            <xs:pattern value="([2-9]\d{3}((0[1-9]|1[012])(0[1-9]|1\d|2[0-8])|(0[13456789]|1[012])(29|30)|(0[13578]|1[02])31)|
(([2-9]\d)(0[48]|[2468][048]|[13579][26])|(([2468][048]|[3579][26])00))0229)([0-1][0-9]|[2][0-3])([0-5][0-9])([0-5][0-9])"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
    </xs:sequence>
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  <xs:complexType name="ACCOUNT">
    <xs:sequence>
      <xs:element name="ACCNO" type="ACCNO" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="CURRCODE" type="CRDCURRCODE" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="ACCTYPE" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:enumeration value="00"/>
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          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="SORTCODE" type="SORTCODE" minOccurs="0" maxOccurs="1" nillable="false"/>
      <xs:element name="BANKACC" type="BANKACC" minOccurs="0" maxOccurs="1" nillable="false"/>
      <xs:element name="FEEBAND" minOccurs="0" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="10"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="PAYMENT" type="PAYMENT" minOccurs="0" maxOccurs="1" nillable="false"/>
      <xs:element name="FINAMT" type="xs:decimal" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="BLKAMT" type="xs:decimal" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="AMTAVL" type="xs:decimal" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="LINKEDTOKEN" type = "xs:decimal" minOccurs = "0" maxOccurs = "1" nillable = "false"/>
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        <xs:element name="CARD" type="CARD"/>
      </xs:sequence>
    </xs:sequence>
  </xs:complexType>
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    <xs:sequence maxOccurs="unbounded">
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    </xs:sequence>
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```

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</xs:simpleType>
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    <xs:enumeration value="01"/>
    <xs:enumeration value="02"/>
    <xs:enumeration value="03"/>
    <xs:enumeration value="04"/>
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```
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```

```
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```

```
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      <xs:enumeration value="UAH"/>
      <xs:enumeration value="UGX"/>
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      <xs:enumeration value="XPF"/>
      <xs:enumeration value="YER"/>
      <xs:enumeration value="ZAR"/>
      <xs:enumeration value="ZMK"/>
      <xs:enumeration value="ZWD"/>
      <xs:enumeration value="ZWL"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="SORTCODE">
    <xs:restriction base="xs:string">
      <xs:minLength value="6"/>
      <xs:maxLength value="6"/>
      <xs:pattern value="^(\d){6}$"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="BANKACC">
    <xs:restriction base="xs:string">
      <xs:minLength value="8"/>
      <xs:maxLength value="8"/>
```

```
      <xs:pattern value="^(\d){8}$"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="PAYMENT">
    <xs:restriction base="xs:string">
      <xs:maxLength value="4"/>
      <xs:pattern value="(R0|R1|R2|R5)?(P0|P1|P2|P5)?"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="SCHEME" type="SCHEME"/>
</xs:schema>
```

4.6.1 Schema Changes

Refer to the list of changes below.

Version	Description
V1.11	Added missing STATCODE values: G1,G2,G3,G4,G5,G6,G7,G8,G9,93,6P,59 & 46. See Status Codes.
V1.10	Added the ability to accept empty strings in the GPSEXPDATE.
V1.09	Added a new field PRIMARYTOKEN.
V1.08	Added a new field GPSEXPDATE.
V1.07	Spaces added as SchemeID are allowed.
V.1.06	Thredd Balance XML Schema for normal balance files.

General FAQs

This section provides answers to frequently asked questions.

Types of Reports

What type of reports does Thredd provide?

Thredd provides the following reports to Program Managers:

- Transaction report
- Balance report

Note:
For Issuers (BIN sponsors) and Self-Issuers, Thredd provides two additional reports:
• Fee Collection Report
• Quarterly Management Report (QMR)
For details, please contact your implementation manager or account manager

Can I configure the details provided in each report?

No, the Thredd reports are standard. If you require bespoke reports, please speak to your account manager.

How often are reports provided? Can I change this?

The Thredd reports are provided daily. For specific details regarding report timing, please speak to your account manager.

For more frequent transaction information, we recommend you use the External Host Interface (EHI) which provides transaction reporting in real-time.

How are reports provided to customers?

The daily reports are provided via sFTP. This is on a push only basis.

How often do you change the fields in the report?

Thredd will add new fields to the report in line with updates from the Card Schemes (payment network) or to reflect other changes relevant to the payments industry or our service. Currently the payment networks are Visa and Mastercard.

When we make changes to the reports, we will update the technical documentation and notify you of the change.

Are reports encrypted?

Yes. Reports are encrypted using the PGP standard.

How do I identify the version of the report?

The XML schema version is listed in the comments section of the schema, together with details of what has changed. See Balance Report XML Schema. We currently do not provide the XML version within the XML report.

How large is a typical report?

This is based on the number of your transactions and can be anything from 1Kb to 2GB. We will split up anything larger than 2GB into smaller files: eg., *filename.001*, *filenename.002* and so on.

Do you store reports and if so, for how long?

Reports are stored for up to 2 calendar days on the sFTP server, after which they are deleted from the sFTP server. We keep an archive of historical files for a limited period. For access to historical files, please raise a JIRA request.

How can I use the reports?

You can use them to do the following:

- Update to your card balance/transaction database
- For card balance/transaction reconciliation purposes

Glossary

This page provides a list of glossary terms used in this guide.

A

Acquirer

The merchant acquirer or bank that offers the merchant a trading account, to enable the merchant to take payments in store or online from cardholders.

Authentication

This includes checks to confirm the cardholder identity, such as PIN, CVV2 and CAVV.

Authorisation

Stage where a merchant requests approval for a card payment by sending a request to the card issuer to check that the card is valid, and that the requested authorisation amount is available on the card. At this stage the funds are not deducted from the card.

B

BIN Attack

A BIN attack is a type of BIN scamming in which a fraudster takes the first six numbers and runs software to generate the rest of the numbers. After the fraudster identifies a full account number, they will test it via credit card testing.

C

Card Scheme (Network)

Card payment network, such as MasterCard or Visa, responsible for managing transactions over the network and for arbitration of any disputes.

Chargeback

Where a cardholder disputes a transaction on their account and is unable to resolve directly with the merchant, they can raise a chargeback with their card issuer. The chargeback must be for a legitimate reason, such as goods and services not received, faulty goods, or a fraudulent transaction.

Clearing File/Clearing Transaction

Thredd receive batch clearing files from the card networks, containing clearing transactions, such as presentments and network fees. The card issuer (BIN sponsor) transfers the requested settlement amount to the acquirer and 'clears' the amount on the card, reducing the available card balance accordingly.

E

External Host Interface (EHI)

The External Host Interface provides a facility to enable exchange of data between Thredd and external systems via our web services. All transaction data processed by Thredd is transferred to the External Host side via EHI in real time. For certain types of transactions, such as Authorisations, the External Host can participate in payment transaction authorisation.

I

ICA

The Interbank Card Association Number (ICA) is a five-digit number assigned by MasterCard to a financial institution, third-party processor or other member to identify the member in the transaction.

Issuer (BIN sponsor)

The card issuer, typically a financial organisation authorised to issue cards. The issuer has a direct relationship with the relevant Card Scheme (payment network).

M

Merchant

The shop or store providing a product or service that the cardholder is purchasing. A merchant must have a merchant account, provided by their acquirer, in order to trade. Physical stores use a terminal or card reader to request authorisation for transactions.

Online sites provide an online shopping basket and use a payment service provider to process their payments.

Merchant Category Code (MCC)

A unique identifier of the merchant, to identity the type of account provided to them by their acquirer.

P

Program Manager

A Thredd customer who manages a card program. The program manager can create branded cards, load funds and provide other card or banking services to their end customers.

Q

Quarterly Management Report

Quarterly Management Report which Issuers (BIN sponsors) send to their Card Scheme (payment network) on a quarterly basis. Contact your Scheme for details.

S

sFTP

Secure File Transfer Protocol. File Transfer Protocol FTP) is a popular unencrypted method of transferring files between two remote systems. SFTP (SSH File Transfer Protocol, or Secure File Transfer Protocol) is a separate protocol packaged with SSH that works in a similar way but over a secure connection.

Smart Client

Smart Client is Thredd's user interface for managing your account on the Thredd Thredd Platform. Smart Client is installed as a desktop application and requires a VPN connection to Thredd systems in order to be able to access your account.

Document History

This section provides details of what has changed since in each document release.

Version	Date	Reason	Who
2.0.5	21/03/2024	Updates to content and graphics to align with taxonomy updates on our Documentation Portal.	KD
	27/02/2024	Updated the description of the BLKAMT field. See the ACCOUNT element.	WS
	31/05/2023	Updated Operations email address to be occ@thredd.com	MW
	27/04/2023	Guide rebrand to reflect new company name and brand identity.	WS
2.0.4	28/02/2023	Added Chinese Offshore Renminbi (currency code CNH) to the list of supported currencies. See Currency Codes.	WS
	25/01/2023	Update to the description of the XML report file naming convention. See Balance Data Files.	WS
	20/01/2023	Update to description of frequency of XML reports in FAQs section.	WS
	01/12/2022	Updated the Copyright Statement	MW
2.0.3	28/10/2022	Added a description of the Thredd 16-digit public token.	WS
	12/10/2022	Updates to description of when the balance XML files can be generated. Updates to the Balance XML filename format to include details of the applicable Production environment. See Balance Data Files.	WS
	29/06/2022	Updates made to Introduction (QMR section) and Transactional Data Files (Sending of Files section).	JB
2.0.2	08/04/2022 09/05/2022	Added the following missing STATCODE values to the XML schema: G1,G2,G3,G4,G5,G6,G7,G8,G9,93,6P,59 & 46. See Status Codes. New field PRIMARYTOKEN added to the CARD element, which shows the full Primary Account Number (PAN) of the card; If this is a secondary card, shows the full PAN of the linked primary card. See PRN-109. Added the ability to accept empty strings in the GPSEXPDATE. Added details of the *XMLCutoffUTCtime* setting, which allows you to set the equivalent local midnight cut-off time for receiving balance XML reports if the time zone in your country differs from the UK time. See Balance Data Files. Added a link to the Downloads page on the Documentation Portal, where you can view and download upcoming/future schema versions.	WS
2.0.1	23/08/2021 01/10/2021	New *GPSEXPDATE* field added to the CARD element. See PRN-60. Updates to Card Satus Codes. See PRN-48.	WS
2.0	09/06/2021	Major revamp to look and feel and organisation of the guide. Rewrite of content to simplify and make the guide easier to use.	WS
1.08	24/07/2020	Changed SchemeID, ProgramID and statcode as per DEV_REPORTING-396.	DM
1.07	11/05/2020	Updated Balance Data Files - Reporting Contents Description.	VS
1.06	10/06/2019	Added CRDACCNO description.	IF

Version	Date	Reason	Who
1.05	08/03/2019	Added PRODUCTID and LASTUPDATED to the CARD element.	IF
1.04	16/04/2018	Updated Appendix B – Card Status Codes.	IF
1.01	12/09/2016	Added fields for Agency Banking and further corrections and small changes.	IF
1.0	23/08/2010	Initial draft.	IF

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Technical Publications

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