



Balance XML Reporting Guide

Version: 2.0.7

04 July 2024

Publication number: BXML-2.0.5-5/31/2024

For the latest technical documentation, see the [Documentation Portal](#).

Thredd, Kingsbourne House, 229-231 High Holborn, London, WC1V 7DA

Support Email: occ@thredd.com

Support Phone: +44 (0) 203 740 9682

© Thredd 2024





Copyright

© Thredd 2024

The material contained in this guide is copyrighted and owned by Thredd Ltd together with any other intellectual property in such material.

Except for personal and non-commercial use, no part of this guide may be copied, republished, performed in public, broadcast, uploaded, transmitted, distributed, modified or dealt with in any manner at all, without the prior written permission of Thredd Ltd., and, then, only in such a way that the source and intellectual property rights are acknowledged.

To the maximum extent permitted by law, Thredd Ltd shall not be liable to any person or organisation, in any manner whatsoever from the use, construction or interpretation of, or the reliance upon, all or any of the information or materials contained in this guide.

The information in these materials is subject to change without notice and Thredd Ltd. assumes no responsibility for any errors.



About this Guide

This guide is intended as a reference guide, to provide information on the available Thredd reports. It describes the Balance Report Data Schema elements, sub-elements and attributes.

Target Audience

Technical teams responsible for the handling and processing of the Thredd balance report 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 report files are provided to you, the types of 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 XML data schema, see [Balance Report XML Schema](#).

Note: For upcoming/future 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 report file, see [Primary Elements](#).

Related Documentation

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 in Global Balance Reporting. This will enable you to understand what types of reports are available and 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

A balance report contains details of card balances on the system in the past 24 hours. This guide explains about how the Balance XML Report works including descriptions of the schema. Thredd sends UTC reports of card balances according to preset UTC (Coordinated Universal Time) times in the past 24 hours, rather than at any time that you require. You can use the Balance report to confirm how much money is on a card according to Thredd systems (where Thredd maintain the balance), allowing you to compare the information you hold in your local card database.

Balance reports use Thredd's XML reporting system, which employs the Secure File Transfer Protocol (sFTP). In the reporting system, Thredd processes incoming requests from the Card Schemes (payment networks) using its real-time authorisation engine.

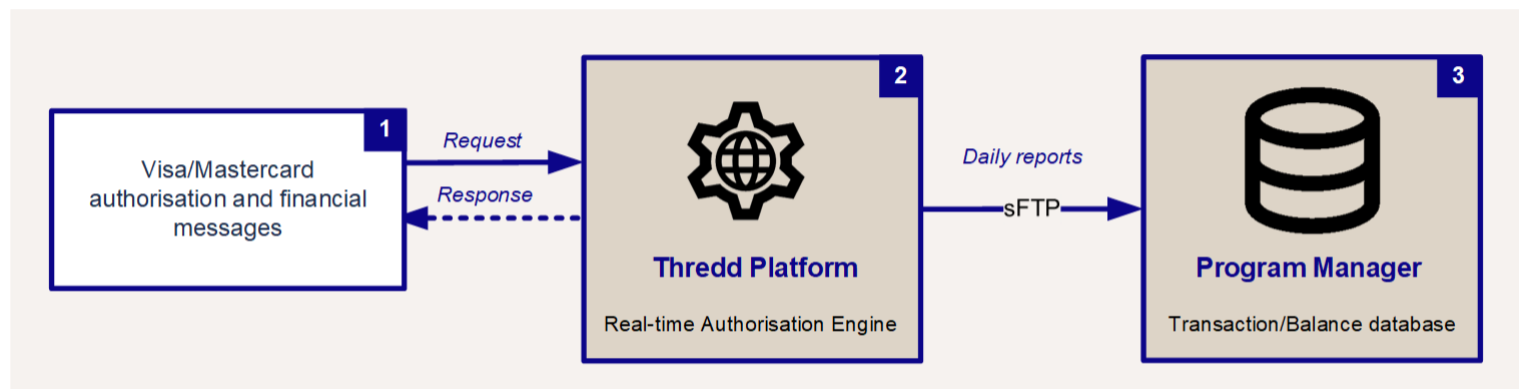


Figure 1: XML Reporting

Note: There is a new version of balance reports that allows you to receive reports at any point you require. For more details, refer to the *New Balance XML Reporting Guide*.

1.1.1 Balance Report Details

Clients in the following EHI modes use these reports where Thredd maintains details of card balances. These include:

- Cooperative Processing (mode 2)
- Full Service Processing (mode 3)
- Gateway Processing with STIP (mode 4)
- Gateway Processing with STIP (mode 5)

Note: You can also use reports for balances where EHI is not being used.

To deliver flexibility on when to run reports, the Balance XML report can provide details of the balance on each card as at midnight UK time¹ or at a specific time when the XML is run.

1.1.2 Other Types of Reports

In addition to reports for balances, Thredd provides these other types of reports:

- **Transaction XML Report:** – provides details of authorisation and financial advices and other non-scheme transactions that take place. Non-scheme transactions include card loads/unloads, balance adjustments through web services, cardholder fees generated by Thredd (that you have set up in your fee groups) and network scheme fees. You can use this report to reconcile against Mastercard or Visa settlement advices and reconcile it with data received from EHI. For more information, see the Transaction XML Reporting Guide.
- **Fee Collection Report:** – gives a summary of Scheme (VISA/Mastercard) Fees by ICA and currency. You can use this report to reconcile against Mastercard/Visa Settlement summary reports. The Fee Collection Report 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 Report:** – contains information to complete your scheme regulatory reporting for Mastercard's Quarterly Management Reports and Visa's Global Operating Certificates. Thredd provides this report to Issuers and Self-Issuers. Sent on a quarterly basis, this report includes details such as the number of live cards, cards issued, and information on card activity and status. For more information, contact your Implementation Manager or Account Manager.

¹Local 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 XML Report files at preset times. The balance is the amount on the card at the point when the report is generated daily (usually shortly after midday), and includes non-working days and holidays. The generation job can take up to two hours. Balance data arrives around 5pm UK time, but this can be configured to align with your chosen cut-off time. Thredd sends Balance XML Report files through sFTP.

Note: Thredd deletes the sFTP files from the sFTP server after two calendar days. The files are stored on Thredd's archive server for a limited period. Bear in mind that if you need to keep transaction records over time, you must follow the right business processes for maintaining the records.

For an example of a Balance XML Report file, see [Balance XML Example](#).

1.2.1 File Contents

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

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

- 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
- Balance at the moment the XML is generated, usually around 3:30pm to 6pm UK time, depending on the import of presentment data.

Example 1: Midnight Setting Turned Off

On the Saturday 2nd Jan 2023, a file named *GPS-PPPPbalex20230101.P1.xml* is generated at 5pm, which contains a snapshot of balances as at the report creation time of 5pm on Saturday.

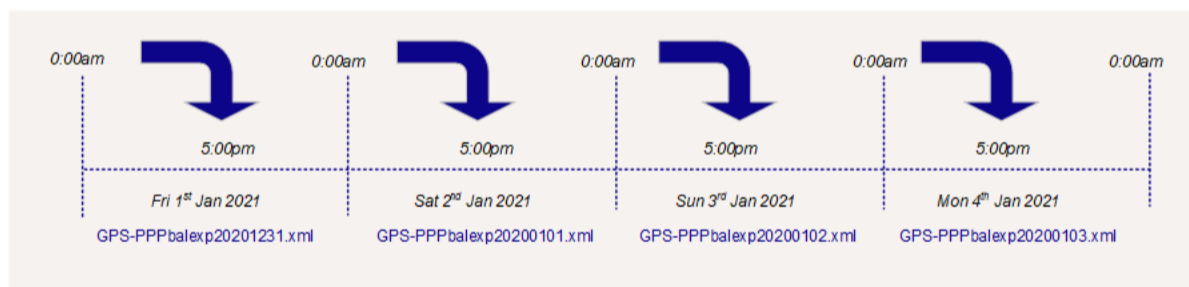


Figure 2: Balance File Reporting Schedule and Filename

Example 2: Midnight Setting Turned On

On the Saturday 2nd Jan 2023, a file named *GPS-PPPPbalex20230101.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 named *GPS-PPPPbalex20230101.P1.xml* is generated at 3am local Australian time. This file contains a snapshot of balances as at midnight Friday UK time (10am on Saturday Australian time).

Card Scheme Considerations

If you want the Balance XML Reports to include Visa and Mastercard transactions, you need to consider the clearing cycles for these card schemes. The clearing cycles can influence the time of day Thredd sends the balance files.

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



Scheme	Cycle Description
Mastercard	<p>Mastercard has 6 clearing cycles per day, seven days per week. Mastercard sends Thredd the clearing files, which contain the settlement data.</p> <p>Thredd processes all 8 cycles before generating the Balance XML Report with clearing data.</p> <p>Data from cycles 5-8 from the night before and 1-4 from current day form the aggregate data of a settlement day for most regions. The cycles contain all the information you need to reconcile your settlements with Mastercard.</p> <p>For Asia-Pacific clients, Thredd processes cycles 2-8 for the previous day and cycle 1 from the current day, and includes them in the daily Balance XML Report.</p>
Visa	<p>Visa provides two files, Domestic and International, each day with different timings for some regions (for example, Australia and Hong Kong).</p> <p>There is a maximum filesize where, for the largest clients, it is possible that more than one Domestic and/or International file is received on the same day. ¹</p> <p>After processing the files from the card schemes, Thredd creates the Balance XML Report file and sends it to you.</p>

1.2.2 File Naming Convention

The uses the following naming convention:

On-Premise Customers (P0)

[GPS-PPPPbalexYYYYMMDD.xml](#)

Thredd Cloud (P1 and P2)

[GPS-PPPPbalexYYYYMMDD.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 P1 and P2

For example:

[GPS-NWCtxnexp20230131.P1.xml](#)

Note: The production environment variable applies to customers in one of Thredd's AWS Cloud-based production environments (P1 and P2), and does not apply to existing customers in our UK data centre production environment (P0). For details of which production environment is relevant to your programme, check with your implementation manager or account manager.

1.2.3 Encryption and Encoding

XML files are encrypted using Pretty Good Privacy, where keys are shared. For details, contact your implementation manager.

All of the XML data files are well-formed XML (UTF-8 encoded).

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

¹Visa Domestic cycle starts at 9am and the International cycle begins at mid-day. Both cycles happen 7-days a week.



1.3 Balance Data Schema

The Balance Data Schema describes the structure and possible data values of the Thredd Balance Report file.

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

The Balance Data Schema is an evolving standard and is subject to change as the standard evolves. When we make changes to the Balance Data Schema, 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 for reports.



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 omitted...
    <CARD>...detail omitted...</CARD>
    <CARD>...detail omitted...</CARD>
  </ACCOUNT>
  <ACCOUNT>...detail omitted...</ACCOUNT>
  <ACCOUNT>...detail omitted...</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 omitted...  
  </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 another card with a different account, then the field holds the Thredd public token of the linked card.	0-1	<LINKEDTOKEN>	Optional	See LINKEDTOKEN
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>1234567891012145</ACCNO>
  <CURRCODE>GBP</CURRCODE>
  <ACCTYPE>00</ACCTYPE>
  <FINAMT>238.76</FINAMT>
  <BLKAMT>10.00</BLKAMT>
  <AMTAVL>228.76</AMTAVL>
  <CARD>...detail omitted...</CARD>
  <CARD>...detail omitted...</CARD>
</ACCOUNT>
```



2.4 CARD

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

Child Element	Description	Occurs	Data Type	Required	Constraints / 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 is based on the Thredd validity period in days configured at product level (e.g., 1095 days from the date of card activation).	1	<GPSEXPDATE>	Yes	See GPSEXPDATE
CRDACCNO	Account number of the card. This will be the same as the PAN.	1	<CRDACCNO>	Yes	See CRDACCNO
PRIMARYTOKEN	<p>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:</p> <ul style="list-style-type: none"> • 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 <p>Note: This field will not be displayed if you do not receive full PAN or this is a Multi-FX card.</p>	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 card.	1	xs:string	Yes	See PRODUCTID
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 omitted...
  <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

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

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:

xxxYYYYYYYYzzzz

where:

- xxx – is the 3 digits derived from the Thredd internal scheme ID
- YYYYYYYYYY – 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.

Description	Base Data Type	Constraints / Permitted Values																				
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.	xs:string	<p>Alphanumeric string of 4 characters.</p> <p>Valid receipt values are:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Valid payment values are:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <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> </tbody> </table>	Value	Description	R0	No Receipt Options	R1	BACS Receipts Only	R2	Faster Payment Receipts Only	R5	Both Receipt Options	Value	Description	P0	No Outbound Options	P1	Outbound Faster Payments Only	P2	Direct Debit Payments Only	P5	Both Outbound Payments Option
Value	Description																					
R0	No Receipt Options																					
R1	BACS Receipts Only																					
R2	Faster Payment Receipts Only																					
R5	Both Receipt Options																					
Value	Description																					
P0	No Outbound Options																					
P1	Outbound Faster Payments Only																					
P2	Direct Debit Payments Only																					
P5	Both Outbound Payments Option																					

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. <ul style="list-style-type: none"> 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	Value	Country names	Value	Country names
AD	Andorra	GL	Greenland	NP	Nepal
AE	United Arab Emirates	GM	Gambia	NR	Nauru
AF	Afghanistan	GN	Guinea	NU	Niue
AG	Antigua and Barbuda	GP	Guadeloupe	NZ	New Zealand
AI	Anguilla	GQ	Equatorial Guinea	OM	Oman
AL	Albania	GR	Greece	PA	Panama
AM	Armenia	GS	South Georgia and the South Sandwich Islands	PE	Peru
AN	Netherlands Antilles	GT	Guatemala	PF	French Polynesia
AO	Angola	GU	Guam	PG	Papua New Guinea
AQ	Antarctica	GW	Guinea-Bissau	PH	Philippines
AR	Argentina	GY	Guyana	PK	Pakistan
AS	American Samoa	HK	Hong Kong	PL	Poland
AT	Austria	HM	Heard Island and McDonald Islands	PM	Saint Pierre and Miquelon
AU	Australia	HN	Honduras	PN	Pitcairn
AW	Aruba	HR	Croatia	PR	Puerto Rico
AX	Åland Islands	HT	Haiti	PS	Palestinian Territory, Occupied
AZ	Azerbaijan	HU	Hungary	PT	Portugal
BA	Bosnia and Herzegovina	ID	Indonesia	PW	Palau
BB	Barbados	IE	Ireland	PY	Paraguay
BD	Bangladesh	IL	Israel	QA	Qatar
BE	Belgium	IM	Isle of Man	QZ	UNMI Kosovo
BF	Burkina Faso	IN	India	RE	Réunion
BG	Bulgaria			RO	Romania



Value	Country names	Value	Country names	Value	Country names
BH	Bahrain	IO	British Indian Ocean Territory	RS	Serbia
BI	Burundi	IQ	Iraq	RU	Russian Federation
BJ	Benin	IR	Iran, Islamic Republic of	RW	Rwanda
BL	Saint Barthélemy	IS	Iceland	SA	Saudi Arabia
BM	Bermuda	IT	Italy	SB	Solomon Islands
BN	Brunei Darussalam	JE	Jersey	SC	Seychelles
BO	Bolivia, Plurinational State of	JM	Jamaica	SD	Sudan
BQ	Bonaire, Sint Eustatius and Saba	JO	Jordan	SE	Sweden
BR	Brazil	JP	Japan	SG	Singapore
BS	Bahamas	KE	Kenya	SH	Saint Helena, Ascension and Tristan da Cunha
BT	Bhutan	KG	Kyrgyzstan	SI	Slovenia
BV	Bouvet Island	KH	Cambodia	SJ	Svalbard and Jan Mayen
BW	Botswana	KI	Kiribati	SK	Slovakia
BY	Belarus	KM	Comoros	SL	Sierra Leone
BZ	Belize	KN	Saint Kitts and Nevis	SM	San Marino
CA	Canada	KP	Korea, Democratic People's Republic of	SN	Senegal
CC	Cocos (Keeling) Islands	KR	Korea, Republic of	SO	Somalia
CD	Congo, the Democratic Republic of the	KW	Kuwait	SR	Suriname
CF	Central African Republic	KY	Cayman Islands	SS	South Sudan
CG	Congo	KZ	Kazakhstan	ST	Sao Tome and Principe
CH	Switzerland	LA	Lao People's Democratic Republic	SV	El Salvador
CI	Côte d'Ivoire	LB	Lebanon	SX	Sint Maarten(D)
CK	Cook Islands	LC	Saint Lucia	SY	Syrian Arab Republic
CL	Chile	LI	Liechtenstein	SZ	Swaziland
				TC	Turks and Caicos Islands



Value	Country names	Value	Country names	Value	Country names
CM	Cameroon	LK	Sri Lanka	TD	Chad
CN	China	LR	Liberia	TF	French Southern Territories
CO	Colombia	LS	Lesotho	TG	Togo
CR	Costa Rica	LT	Lithuania	TH	Thailand
CU	Cuba	LU	Luxembourg	TJ	Tajikistan
CV	Cape Verde	LV	Latvia	TK	Tokelau
CW	Curaçao	LY	Libyan Arab Jamahiriya	TL	Timor-Leste
CX	Christmas Island	MA	Morocco	TM	Turkmenistan
CY	Cyprus	MC	Monaco	TN	Tunisia
CZ	Czech Republic	MD	Moldova, Republic of	TO	Tonga
DD	Federal Republic of Germany	ME	Montenegro	TR	Turkey
DE	Germany	MF	Saint Martin (French part)	TT	Trinidad and Tobago
DJ	Djibouti	MG	Madagascar	TV	Tuvalu
DK	Denmark	MH	Marshall Islands	TW	Taiwan, Province of China
DM	Dominica	MK	Macedonia, the former Yugoslav Republic of	TZ	Tanzania, United Republic of
DO	Dominican Republic	ML	Mali	UA	Ukraine
DZ	Algeria	MM	Myanmar	UG	Uganda
EC	Ecuador	MN	Mongolia	UM	United States Minor Outlying Islands
EE	Estonia	MO	Macao	US	United States
EG	Egypt	MP	Northern Mariana Islands	UY	Uruguay
EH	Western Sahara	MQ	Martinique	UZ	Uzbekistan
ER	Eritrea	MR	Mauritania	VA	Holy See (Vatican City State)
ES	Spain	MS	Montserrat	VC	Saint Vincent and the Grenadines
ET	Ethiopia	MT	Malta		
FI	Finland	MU	Mauritius		



Value	Country names	Value	Country names	Value	Country names
FJ	Fiji	MV	Maldives	VE	Venezuela, Bolivarian Republic of
FK	Falkland Islands (Malvinas)	MW	Malawi	VG	Virgin Islands, British
FM	Micronesia, Federated States of	MX	Mexico	VI	Virgin Islands, U.S.
FO	Faroe Islands	MY	Malaysia	VN	Viet Nam
FR	France	MZ	Mozambique	VU	Vanuatu
GA	Gabon	NA	Namibia	WF	Wallis and Futuna
GB	United Kingdom	NC	New Caledonia	WS	Samoa
GD	Grenada	NE	Niger	YE	Yemen
GE	Georgia	NF	Norfolk Island	YT	Mayotte
GF	French Guiana	NG	Nigeria	ZA	South Africa
GG	Guernsey	NI	Nicaragua	ZM	Zambia
GH	Ghana	NL	Netherlands	ZW	Zimbabwe
GI	Gibraltar	NO	Norway		



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-reversible 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>
    <PROGRAMID>448</PROGRAMID>
    <CUSTCODE>30396859</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>20190129051659</LASTUPDATED>
  </CARD>
</ACCOUNT>
<ACCOUNT>
  <ACCNO>5276026307791793</ACCNO>
  <CURRCODE>GBP</CURRCODE>
  <ACCTYPE>01</ACCTYPE>
  <FINAMT>5.00</FINAMT>
  <BLKAMT>0.00</BLKAMT>
  <AMTAVL>5.00</AMTAVL>
  <LINKEDTOKEN>5273593578585571</LINKEDTOKEN>
```



```
<CARD>
  <PAN>5276026307791793</PAN>
  <VIRTUAL>N</VIRTUAL>
  <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>
  <LINKEDTOKEN>5273593578585571</LINKEDTOKEN>
  <CARD>
    <PAN>5273593578585571</PAN>
    <VIRTUAL>N</VIRTUAL>
    <PRIMARY>Y</PRIMARY>
    <CRDPRODUCT>MCRD</CRDPRODUCT>
    <PROGRAMID>PMT</PROGRAMID>
    <CUSTCODE>78585571</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>20190113231425</LASTUPDATED>
  </CARD>
</ACCOUNT>
<ACCOUNT>
  <ACCNO>4321000987654321</ACCNO>
  <CURRCODE>USD</CURRCODE>
  <ACCTYPE>02</ACCTYPE>
  <FINAMT>-15.81</FINAMT>
  <BLKAMT>0.00</BLKAMT>
  <AMTAVL>-15.81</AMTAVL>
  <CARD>
    <PAN>4321000987654321</PAN>
    <VIRTUAL>N</VIRTUAL>
    <PRIMARY>Y</PRIMARY>
    <CRDPRODUCT>VISA</CRDPRODUCT>
    <PROGRAMID>EXVUSD</PROGRAMID>
    <CUSTCODE>78636420</CUSTCODE>
    <STATCODE>14</STATCODE>
    <EXPDATE>2022-01-31</EXPDATE>
    <GPSEXPDATE>2021-01-31</GPSEXPDATE>
    <CRDACCNO>4321000987654321</CRDACCNO>
    <PRIMARYTOKEN>4321000987654321</PRIMARYTOKEN>
    <CRDCURRCODE>USD</CRDCURRCODE>
    <PRODUCTID>4321</PRODUCTID>
    <LASTUPDATED>20190226010433</LASTUPDATED>
  </CARD>
</ACCOUNT>
<ACCOUNT>
  <ACCNO>5679871234554321</ACCNO>
  <CURRCODE>GBP</CURRCODE>
```



```
<ACCTYPE>01</ACCTYPE>
<SORTCODE>012345</SORTCODE>
<BANKACC>12345678</BANKACC>
<FEEBAND>SAMPLE-AB</FEEBAND>
<PAYMENT>RSP1</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>
      <xs:element name="PAN" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="15"/>
            <xs:maxLength value="19"/>
            <xs:pattern value="^\d+$"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="VIRTUAL" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:enumeration value="Y"/>
            <xs:enumeration value="N"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="PRIMARY" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:enumeration value="Y"/>
            <xs:enumeration value="N"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="CRDPRODUCT" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="4"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="PROGRAMID" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="6"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="CUSTCODE" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="8"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="STATCODE" type="STATCODE" minOccurs="1" maxOccurs="1" nillable="false"/>
      <xs:element name="EXPDATE" minOccurs="1" maxOccurs="1" nillable="false">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="10"/>
            <xs:pattern value="^(20)\d\d[- /.](0[1-9]|1[012])[- /.](0[1-9]|12)[0-9]|3[01])$"/>
          </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:sequence>
  </xs:complexType>
</xs:schema>
```



```
</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>
    <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="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>
</xs:complexType>
<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"/>
          <xs:enumeration value="01"/>
          <xs:enumeration value="02"/>
        </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"/>
    <xs:sequence minOccurs="0" maxOccurs="unbounded">
      <xs:element name="CARD" type="CARD"/>
    </xs:sequence>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="SCHEME">
  <xs:sequence maxOccurs="unbounded">
    <xs:element name="ACCOUNT" type="ACCOUNT"/>
  </xs:sequence>
  <xs:attribute name="ID" use="optional">
    <xs:simpleType>
      <xs:restriction base="xs:string">
```



```
        <xs:maxLength value="3"/>
        <xs:pattern value="^(([A-Za-z0-9]|\s){3})$"/>
    </xs:restriction>
</xs:simpleType>
</xs:attribute>
</xs:complexType>
<xs:simpleType name="ACCNO">
    <xs:restriction base="xs:string">
        <xs:maxLength value="28"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="STATCODE">
    <xs:restriction base="xs:string">
        <xs:enumeration value="00"/>
        <xs:enumeration value="01"/>
        <xs:enumeration value="02"/>
        <xs:enumeration value="03"/>
        <xs:enumeration value="04"/>
        <xs:enumeration value="05"/>
        <xs:enumeration value="06"/>
        <xs:enumeration value="08"/>
        <xs:enumeration value="10"/>
        <xs:enumeration value="12"/>
        <xs:enumeration value="13"/>
        <xs:enumeration value="14"/>
        <xs:enumeration value="15"/>
        <xs:enumeration value="17"/>
        <xs:enumeration value="30"/>
        <xs:enumeration value="31"/>
        <xs:enumeration value="32"/>
        <xs:enumeration value="33"/>
        <xs:enumeration value="36"/>
        <xs:enumeration value="37"/>
        <xs:enumeration value="38"/>
        <xs:enumeration value="41"/>
        <xs:enumeration value="43"/>
        <xs:enumeration value="46"/>
        <xs:enumeration value="51"/>
        <xs:enumeration value="54"/>
        <xs:enumeration value="55"/>
        <xs:enumeration value="57"/>
        <xs:enumeration value="58"/>
        <xs:enumeration value="59"/>
        <xs:enumeration value="61"/>
        <xs:enumeration value="62"/>
        <xs:enumeration value="63"/>
        <xs:enumeration value="64"/>
        <xs:enumeration value="65"/>
        <xs:enumeration value="66"/>
        <xs:enumeration value="67"/>
        <xs:enumeration value="68"/>
        <xs:enumeration value="6P"/>
        <xs:enumeration value="70"/>
        <xs:enumeration value="71"/>
        <xs:enumeration value="75"/>
        <xs:enumeration value="76"/>
        <xs:enumeration value="77"/>
        <xs:enumeration value="78"/>
        <xs:enumeration value="79"/>
        <xs:enumeration value="80"/>
        <xs:enumeration value="81"/>
        <xs:enumeration value="82"/>
        <xs:enumeration value="83"/>
        <xs:enumeration value="85"/>
        <xs:enumeration value="86"/>
        <xs:enumeration value="87"/>
        <xs:enumeration value="88"/>
        <xs:enumeration value="89"/>
        <xs:enumeration value="90"/>
        <xs:enumeration value="91"/>
        <xs:enumeration value="92"/>
    </xs:restriction>
</xs:simpleType>
```



```
<xs:enumeration value="93"/>
<xs:enumeration value="94"/>
<xs:enumeration value="95"/>
<xs:enumeration value="96"/>
<xs:enumeration value="98"/>
<xs:enumeration value="99"/>
<xs:enumeration value="C0"/>
<xs:enumeration value="C1"/>
<xs:enumeration value="N0"/>
<xs:enumeration value="N7"/>
<xs:enumeration value="P5"/>
<xs:enumeration value="P6"/>
<xs:enumeration value="G1"/>
<xs:enumeration value="G2"/>
<xs:enumeration value="G3"/>
<xs:enumeration value="G4"/>
<xs:enumeration value="G5"/>
<xs:enumeration value="G6"/>
<xs:enumeration value="G7"/>
<xs:enumeration value="G8"/>
<xs:enumeration value="G9"/>
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="CRDCURRCODE">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="AED"/>
    <xs:enumeration value="AFN"/>
    <xs:enumeration value="ALL"/>
    <xs:enumeration value="AMD"/>
    <xs:enumeration value="ANG"/>
    <xs:enumeration value="AOA"/>
    <xs:enumeration value="ARS"/>
    <xs:enumeration value="AUD"/>
    <xs:enumeration value="AWG"/>
    <xs:enumeration value="AZN"/>
    <xs:enumeration value="BAM"/>
    <xs:enumeration value="BBD"/>
    <xs:enumeration value="BDT"/>
    <xs:enumeration value="BGN"/>
    <xs:enumeration value="BHD"/>
    <xs:enumeration value="BIF"/>
    <xs:enumeration value="BMD"/>
    <xs:enumeration value="BND"/>
    <xs:enumeration value="BOB"/>
    <xs:enumeration value="BOV"/>
    <xs:enumeration value="BRL"/>
    <xs:enumeration value="BSD"/>
    <xs:enumeration value="BTN"/>
    <xs:enumeration value="BWP"/>
    <xs:enumeration value="BYR"/>
    <xs:enumeration value="BZD"/>
    <xs:enumeration value="CAD"/>
    <xs:enumeration value="CDF"/>
    <xs:enumeration value="CHE"/>
    <xs:enumeration value="CHF"/>
    <xs:enumeration value="CHW"/>
    <xs:enumeration value="CLF"/>
    <xs:enumeration value="CLP"/>
    <xs:enumeration value="CNY"/>
    <xs:enumeration value="COP"/>
    <xs:enumeration value="COU"/>
    <xs:enumeration value="CRC"/>
    <xs:enumeration value="CSD"/>
    <xs:enumeration value="CUC"/>
    <xs:enumeration value="CUP"/>
    <xs:enumeration value="CVE"/>
    <xs:enumeration value="CYP"/>
    <xs:enumeration value="CZK"/>
    <xs:enumeration value="DJF"/>
    <xs:enumeration value="DKK"/>
```



```
<xs:enumeration value="DOP"/>
<xs:enumeration value="DZD"/>
<xs:enumeration value="EEK"/>
<xs:enumeration value="EGP"/>
<xs:enumeration value="ERN"/>
<xs:enumeration value="ETB"/>
<xs:enumeration value="EUR"/>
<xs:enumeration value="FJD"/>
<xs:enumeration value="FKP"/>
<xs:enumeration value="GBP"/>
<xs:enumeration value="GEL"/>
<xs:enumeration value="GHC"/>
<xs:enumeration value="GHS"/>
<xs:enumeration value="GIP"/>
<xs:enumeration value="GMD"/>
<xs:enumeration value="GNF"/>
<xs:enumeration value="GTQ"/>
<xs:enumeration value="GWP"/>
<xs:enumeration value="GYD"/>
<xs:enumeration value="HKD"/>
<xs:enumeration value="HNL"/>
<xs:enumeration value="HRK"/>
<xs:enumeration value="HTG"/>
<xs:enumeration value="HUF"/>
<xs:enumeration value="IDR"/>
<xs:enumeration value="ILS"/>
<xs:enumeration value="INR"/>
<xs:enumeration value="IQD"/>
<xs:enumeration value="IRR"/>
<xs:enumeration value="ISK"/>
<xs:enumeration value="JMD"/>
<xs:enumeration value="JOD"/>
<xs:enumeration value="JPY"/>
<xs:enumeration value="KES"/>
<xs:enumeration value="KGS"/>
<xs:enumeration value="KHR"/>
<xs:enumeration value="KMF"/>
<xs:enumeration value="KPW"/>
<xs:enumeration value="KRW"/>
<xs:enumeration value="KWD"/>
<xs:enumeration value="KYD"/>
<xs:enumeration value="KZT"/>
<xs:enumeration value="LAK"/>
<xs:enumeration value="LBP"/>
<xs:enumeration value="LKR"/>
<xs:enumeration value="LRD"/>
<xs:enumeration value="LSL"/>
<xs:enumeration value="LTL"/>
<xs:enumeration value="LVL"/>
<xs:enumeration value="LYD"/>
<xs:enumeration value="MAD"/>
<xs:enumeration value="MDL"/>
<xs:enumeration value="MGA"/>
<xs:enumeration value="MKD"/>
<xs:enumeration value="MMK"/>
<xs:enumeration value="MNT"/>
<xs:enumeration value="MOP"/>
<xs:enumeration value="MRO"/>
<xs:enumeration value="MTL"/>
<xs:enumeration value="MUR"/>
<xs:enumeration value="MVR"/>
<xs:enumeration value="MWK"/>
<xs:enumeration value="MXN"/>
<xs:enumeration value="MXV"/>
<xs:enumeration value="MYR"/>
<xs:enumeration value="MZM"/>
<xs:enumeration value="MZN"/>
<xs:enumeration value="NAD"/>
<xs:enumeration value="NGN"/>
<xs:enumeration value="NIO"/>
<xs:enumeration value="NOK"/>
```



```
<xs:enumeration value="NPR"/>
<xs:enumeration value="NZD"/>
<xs:enumeration value="OMR"/>
<xs:enumeration value="PAB"/>
<xs:enumeration value="PEN"/>
<xs:enumeration value="PGK"/>
<xs:enumeration value="PHP"/>
<xs:enumeration value="PKR"/>
<xs:enumeration value="PLN"/>
<xs:enumeration value="PYG"/>
<xs:enumeration value="QAR"/>
<xs:enumeration value="RON"/>
<xs:enumeration value="RSD"/>
<xs:enumeration value="RUB"/>
<xs:enumeration value="RWF"/>
<xs:enumeration value="SAR"/>
<xs:enumeration value="SBD"/>
<xs:enumeration value="SCR"/>
<xs:enumeration value="SDG"/>
<xs:enumeration value="SEK"/>
<xs:enumeration value="SGD"/>
<xs:enumeration value="SHP"/>
<xs:enumeration value="SKK"/>
<xs:enumeration value="SLL"/>
<xs:enumeration value="SOS"/>
<xs:enumeration value="SRD"/>
<xs:enumeration value="STD"/>
<xs:enumeration value="SVC"/>
<xs:enumeration value="SYP"/>
<xs:enumeration value="SZL"/>
<xs:enumeration value="THB"/>
<xs:enumeration value="TJS"/>
<xs:enumeration value="TMT"/>
<xs:enumeration value="TND"/>
<xs:enumeration value="TOP"/>
<xs:enumeration value="TRY"/>
<xs:enumeration value="TTD"/>
<xs:enumeration value="TWD"/>
<xs:enumeration value="TZS"/>
<xs:enumeration value="UAH"/>
<xs:enumeration value="UGX"/>
<xs:enumeration value="USD"/>
<xs:enumeration value="UYI"/>
<xs:enumeration value="UYU"/>
<xs:enumeration value="UZS"/>
<xs:enumeration value="VEF"/>
<xs:enumeration value="VND"/>
<xs:enumeration value="VUV"/>
<xs:enumeration value="WST"/>
<xs:enumeration value="XAF"/>
<xs:enumeration value="XCD"/>
<xs:enumeration value="XOF"/>
<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:restriction>
</xs:simpleType>
```



```
<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 reports
- Balance reports

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.

Thredd provides reports of card balances according to preset UTC times in the past 24 hours, rather than at any time that you require.

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*, *filename.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 identify the type of account provided to them by their acquirer.

P

Pretty Good Privacy (PGP),

An encryption program that provides cryptographic privacy and authentication for data communication.

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.

U

UTC (Coordinated Universal Time) Balance XML Reports

A UTC Balance XML Report allows a client to receive reports from Thredd at preset UTC times.



Document History

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

Version	Date	Reason	Revised by
1.2	26/06/2024	Updated the company address.	PC
1.1	03/06/2024	Description change to remove unneeded references to UTC	KD
	17/05/2024	Improved descriptions for UTC Balance XML Reports. Note that the guide has been renamed from Balance XML Reporting guide to distinguish it from the new version where you can receive reports at any time you prefer.	KD
	21/03/2024	Updates to content and graphics to align with taxonomy updates on our Documentation Portal.	KD
	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
1.0	03/02/2023	First version	WS



Contact Us

Please contact us if you have queries relating to this document. Our contact details are provided below.

Thredd Ltd.

Support Email: occ@thredd.com

Telephone: +44 (0) 203 740 9682

Our Head Office

Kingsbourne House
229-231 High Holborn
London
WC1V 7DA

Technical Publications

If you want to contact our technical publications team directly, for queries or feedback related to this guide, you can email us at: docs@thredd.com.