

Cardholder XML Report Guide

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About this Document

This document describes the format for the GPS Cardholder XML File. This file provides details of cardholders.

What’s Changed?

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

Related Documents

Refer to the table below for other documents which should be used in conjunction with this guide.

Document	Description
Balance XML Reporting Guide	Describes the structure and content of the Balance XML report.
Transaction XML Reporting Guide	Describes the structure and content of the Transaction XML report.

1 Introduction

The Cardholder report can be run in two modes:

- **Daily Report:** Shows cardholder details for new cards issued between the current date and the previous day, plus any cards which have had their status changed on the current report date or previous day; if there has been no new issued cards or cards with a status change, a report with empty fields is returned.
- **Weekly Report:** Shows all issued card cardholder details except cards changed to an irreversible status (Stolen, Destroyed) more than 7 days ago.

Note: This report is currently not available to new customers.

Due to the large size of the cardholder file, this is not an automated report as it impacts system performance.

If you require a cardholder report, please raise a Jira ticket, specifying:

- Format the data is required in.
- If it is a repeat/ one time request
- Reason why the report is required – to ensure that we provide the right level of information
- The fields that are required

1.1 File Naming Conventions

By default, cardholder files have the following naming convention:

1.1.1 On-Premise Customers (P0)

GPS-ISSUERcardholderexpYYYYMMDD.xml

1.1.2 GPSCloud (P1 and P2)

GPS-ISSUERcardholderexpYYYYMMDD.Pn.xml

Where:

- **ISSUER:** Is the Issuer/Program Manager name as held by GPS
- **YYYY:** Is the four digits of the year
- **MM:** Is the two digits of the month
- **DD:** Is the two digits of the day
- **Pn** = production environment (2 digits), such as P1 and P2. (Not applicable to customers in our UK data centre production environment)

1.1.3 Example

GPS-IDTcardholderexp20160322.P1.xml

Note: The production environment variable is relevant to customers in one of our 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 applies to your programme, please check with your GPS implementation manager or account manager.

1.2 Encoding / Type

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

2 Cardholder Data Schema

The Cardholder Data Schema (CDS) describes the structure and possible data values of the GPS Cardholder XML file.

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

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

2.1 Schema Versions

The schema is not publicly available. GPS 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.

2.2 Schema Elements

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

- Primary elements
- Sub-elements and attributes

3 Primary Elements

Below are details of the primary elements included in the cardholder XML file.

Element Name	Description	Data Type	Occurs
Header	Describes processor name, file transmit date	<Header>	1
CardHolderDetails	Provides cardholder details	<CardHolderDetails>	0 - n
Trailer	Describes a count of the card holders	<Trailer>	1

3.1 Example

```
<?xml version="1.0" encoding="utf-8"?>
<CardHolder xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Header>...detail ommitted...</Header>
  <CardHolderDetails>...detail ommitted...</CardHolderDetails>
  <Trailer>...detail ommitted...</Trailer>
</CardHolder>
```

3.2 Header

The Header element provides high-level details about the report:

Child Element	Description	Attribute	Required	Constraints / Permitted Values
ProcessorName	Static data	<ProcessorName>	Yes	'GPS'
ReportName	Static data	<ReportName>	Yes	CUSTOMASTER
FileTransmitDate	Date transmitted by Processor	<FileTransmitDate>	Yes	Current Date
WorkOfDate	Date information is referencing	<WorkOfDate>	Yes	Current Date

Example

```
<Header>
  <ProcessorName>GPS</ProcessorName>
  <ReportName>CUSTOMASTER</ReportName>
  <FileTransmitDate>20210322</FileTransmitDate>
  <WorkOfDate>20210322</WorkOfDate>
</Header>
```

3.3 CardHolderDetails

The CardHolderDetails element provides details of the cardholder and their linked cards.

Child Element	Description	Attributes	Required	Maximum Length
ProgramId	Unique identifier of card programme.	<ProgramId>	Yes	50
CardNumber	Number on the plastic issued to the cardholder.	<CardNumber>	Yes	bigint
CardIssuedDate	Date card was issued.	<CardIssuedDate>	Yes	8 (smalldatetime)
AccountNumber	Number assigned to the customer.	<AccountNumber>	Yes	28
AccountExpiryDate	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 GPS validity period in days configured at	<AccountExpiryDate>	Yes	8 (smalldatetime)

Child Element	Description	Attributes	Required	Maximum Length
	product level (e.g., 1095 days from the date of card activation).			
CardId	Card ID.	<CardId>	Yes	
CustomerCode	Customer code of the cardholder.	<CustomerCode>	Yes	25
BranchCode	The branch code or agent code associated with the card.	<BranchCode >	Yes	8
FirstName	Primary cardholder's first name.	<FirstName >	yes	100
LastName	Primary cardholder's last name.	<LastName >	yes	100
Address1	Cardholder's residential address first line.	<Address1>	Yes	100
Address2	Cardholder's residential address second line.	<Address2>	Yes	100
City	City of residence.	<City>	Yes	50
State	State of residence.	<State>	Yes	20
Zipcode	Residential postcode.	<Zipcode >	Yes	10
Country	Country of residence.	<Country>	Yes	3
DelvAddress1	Cardholder's delivery address first line.	<DelvAddress1>	Yes	100
DelvAddress2	Cardholder's delivery address second line.	<DelvAddress2>	Yes	100
DelvCity	Delivery city.	<DelvCity>	Yes	50
DelvState	Delivery state.	<DelvState>	Yes	
DelvZipcode	Delivery postcode.	<DelvZipcode>	Yes	10
DelvCountry	Delivery country.	<DelvCountry>	Yes	10
Phone1	Cardholder's primary phone number.	<Phone1>	Yes	20
Phone2	Cardholder's secondary phone number.	<Phone2>	Yes	20
IDType1	Type of ID (e.g., Passport, driving license, EU/EEA licence).	<IDType1>	Yes	LEFT BLANK
IDNumber1	Number on ID.	<IDNumber1>	Yes	LEFT BLANK
CountryOfIssuance1	Country the ID was issued by.	<CountryOfIssuance1>	Yes	LEFT BLANK
IDType2	Type of ID (e.g., Passport, driving license, EU/EEA licence).	<IDType2>	Yes	LEFT BLANK
IDNumber2	Number on ID.	<IDNumber2>	Yes	LEFT BLANK
CountryOfIssuance2	Country the ID was issued by.	<IDNumber2>	Yes	LEFT BLANK
CardStatus	Status of card.	<CardStatus >	Yes	2
CardStatusDate	Indicates last status change date of card.	<CardStatusDate>	Yes	8(smalldatetime)
ActualBalance	Settled balance, not available balance.	<ActualBalance>	Yes	13(Decimal)
ActualBalanceSign	Sign if settled balance Positive or Negative.	<ActualBalanceSign>	Yes	1
AccountCreatedDate	Date account number created.	<AccountCreatedDate>	Yes	8(smalldatetime)
CardActivationDate	Card activation date.	<CardActivationDate>	Yes	8(smalldatetime)
NegBalDate	Date current balance exceeded available balance	<NegBalDate>	Yes	8(smalldatetime)
NegBalPrincipleAmt	Negative balance amount due to transactions.	<NegBalPrincipleAmt>	Yes	13

Child Element	Description	Attributes	Required	Maximum Length
NegBalFeeAmt	Negative balance amount due to fees.	<NegBalFeeAmt>	Yes	13
TypeOfCard	For Visa only, indicates the type of card (e.g., Payroll, Gift card, Corporate card or other).	<TypeOfCard>	Yes	LEFT BLANK
AuthenticationType	The card's authentication type: SIG = Signature based PIN = PIN based.	<AuthenticationType>	Yes	3
EnrollmentNumber	Unique to a specific program. N/A to all others.	<EnrollmentNumber>	Yes	
AccountStatus	Status of account.	<AccountStatus>	Yes	2
AccountStatusDate	Indicates last status change date of account.	<AccountStatusDate>	Yes	8 (smalldatetime)
DateOfBirth	Date of birth of Cardholder.	<DateOfBirth>	Yes	8 (smalldatetime)
AvailableBalance	Available balance.	<AvailableBalance>	Yes	13 (Decimal)
AvailableBalanceSign	Sign of available Balance: + or -	<AvailableBalanceSign>	Yes	2
PrimaryCard	If this is the Primary card, lists the first letter of card type; if not Primary (i.e., S=Secondary, I=Independent and provide comparison in the lookup file).	<PrimaryCard>	Yes	2
CardExpiryDate	Expiration date as at card creation and printed on the card.	<CardExpiryDate>	Yes	8 (smalldatetime)
FirstLoadDate	Date the customer first loaded the card.	<FirstLoadDate>	Yes	8 (smalldatetime)
LastTransactionDate	Date of the last transaction.	<LastTransactionDate>	Yes	8 (smalldatetime)
LastReissuedDate	Date the card was reissued.	<LastReissuedDate>	Yes	8 (smalldatetime)
NumberOfCards	Number of plastics with the same card number.	<NumberOfCards>	Yes	2
Email	Email address of cardholder.	<Email>	Yes	128
IPAddress	IP address used at the time of the account application.	<IPAddress>	Yes	50
FeeGroupCode	Field used to identify which fee plan is assigned to the customer.	<FeeGroupCode>	Yes	10
ProgramName	Program name linked to the card record.	<ProgramName>	Yes	50
CardCreateDate	Date the card was created.	<CardCreateDate>	Yes	8 (smalldatetime)
PrimaryCardIndicator	System indicator which identifies the card record as a primary cardholder, authorised user or secondary user.	<PrimaryCardIndicator>	Yes	LEFT BLANK
AccountCurrency	Account currency.	<AccountCurrency>	Yes	3
CardProduct	Product associated with the card.	<CardProduct>	Yes	50
Virtual	Indicates if card is virtual: Y = Virtual N = Not virtual	<Virtual>	Yes	1

Example

Below is an example of a typical cardholder record.

```
<CardHolder xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Header>
    <ProcessorName>GPS</ProcessorName>
    <ReportName>CUSTMASTER</ReportName>
    <FileTransmitDate>20210726</FileTransmitDate>
    <WorkOfDate>20210726</WorkOfDate>
  </Header>
  <CardHolderDetails>
    <ProgramId>ONEUKA</ProgramId>
    <CardNumber>1131218142558186</CardNumber>
    <CardIssuedDate>20210723</CardIssuedDate>
    <AccountNumber>4623801132</AccountNumber>
    <AccountExpiryDate>20240730</AccountExpiryDate>
    <CardId>121814255</CardId>
    <CustomerCode>4623801132</CustomerCode>
    <BranchCode />
    <FirstName>John</FirstName>
    <LastName>Tester</LastName>
    <Address1>57 Haven Meadows</Address1>
    <Address2 />
    <City>Boston</City>
    <State />
    <Zipcode>PE21 8HH</Zipcode>
    <Country>826</Country>
    <DelvAddress1>Taylor Made Services UK Limited</DelvAddress1>
    <DelvAddress2>2A Pump Square</DelvAddress2>
    <DelvCity>BOSTON</DelvCity>
    <DelvState />
    <DelvZipcode>PE21 6QW</DelvZipcode>
    <DelvCountry>826</DelvCountry>
    <Phone1>+447774478784</Phone1>
    <Phone2 />
    <IDType1 />
    <IDNumber1 />
    <CountryOfIssuance1 />
    <IDType2 />
    <IDNumber2 />
    <CountryOfIssuance2 />
    <CardStatus>02</CardStatus>
    <CardStatusDate>20210723</CardStatusDate>
    <ActualBalance>0.00</ActualBalance>
    <ActualBalanceSign>-</ActualBalanceSign>
    <AccountCreatedDate>20210706</AccountCreatedDate>
    <CardActivationDate />
    <CardTransferNumberFrom />
    <NegBalDate />
    <NegBalPrincipleAmt>0.00</NegBalPrincipleAmt>
    <NegBalFeeAmt>0.00</NegBalFeeAmt>
    <TypeOfCard>MCRD</TypeOfCard>
    <AuthenticationType>PIN</AuthenticationType>
    <EnrollmentNumber>N/A</EnrollmentNumber>
    <AccountStatus>02</AccountStatus>
    <AccountStatusDate>20210723</AccountStatusDate>
    <DateOfBirth>20050116</DateOfBirth>
    <AvailableBalance>0.00</AvailableBalance>
    <AvailableBalanceSign>-</AvailableBalanceSign>
    <PrimaryCard>I</PrimaryCard>
    <CardExpiryDate>20240630</CardExpiryDate>
    <FirstLoadDate />
    <LastTransactionDate />
    <LastReissuedDate>20210723</LastReissuedDate>
    <NumberOfCards>1</NumberOfCards>
    <Email />
    <IPAddress />
    <FeeGroupCode>1143</FeeGroupCode>
    <ProgramName>ONEUKA</ProgramName>
    <CardCreateDate>20210706</CardCreateDate>
    <PrimaryCardIndicator />
    <AccountCurrency>GBP</AccountCurrency>
    <CardProduct>OnePay AllPay Payroll</CardProduct>
    <Virtual>N</Virtual>
  </CardHolderDetails>
</CardHolder>
```

```
</CardHolderDetails>  
</CardHolder>
```

3.4 Trailer

The Trailer element is used to describe the Count record.

Child Element	Description	Data Type	Required	Constraints / Permitted Values
Count	Count of total Cardholder details	<Count>	Yes	int

Example

```
<TRAILER>
<Count>1618</Count>
</TRAILER>
```

3.5 Empty Report Example

Below is an example of an empty report, returned if there were no cards issued in the last 24 hour period.

```
<CardHolder xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" >
  <Header>
    <ProcessorName>GPS</ProcessorName>
    <ReportName>CUSTMASTER</ReportName>
    <FileTransmitDate>20210614</FileTransmitDate>
    <WorkOfDate>20210614</WorkOfDate>
  </Header>
  <Trailer>
    <Count>0</Count>
  </Trailer>
</CardHolder>
```

Glossary

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

3

3D Secure

3D Secure (3-domain structure), also known as a payer authentication, is a security protocol that helps to prevent fraud in online credit and debit card transactions. This security feature is supported by Visa and Mastercard and is branded as 'Verified by Visa' and 'Mastercard SecureCode' respectively.

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.

Automated Fuel Dispenser (AFD)

Automatic fuel dispensers (AFDs) are used at petrol or gas stations for customer self-service fuel payments. Typically the customer inserts their card and enters a PIN number and the AFD authorises a fixed amount (e.g. £99). Once the final payment amount is known, the AFD may reverse the authorisation and/or request a second authorisation.

C

Card Scheme

Card 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

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

E

EMV

EMV originally stood for "Europay, Mastercard, and Visa", the three companies which created the standard. EMV cards are smart cards, also called chip cards, integrated circuit cards, or IC cards which store their data on integrated circuit chips, in addition to magnetic stripes for backward compatibility.

External Host

The external system to which GPS sends real-time transaction-related data. The URL to this system is configured within GPS per programme or product. The Program Manager uses their external host system to hold details of the balance on the cards in their programme and perform transaction-related services, such as payment authorisation, transaction matching and reconciliation.

F

Fee Groups

Groups which control the card transaction authorisation fees, and other fees, such as recurring fees and GPS web service API fees.

H

Hanging Filter

The period of time during which GPS waits for an approved authorisation amount to be settled. This is defined at a GPS product level. A typical default is 7 days for an auth and 10 days for a pre-auth.

I

Incremental Authorisation

A request for an additional amount on a prior authorisation. An incremental authorisation is used when the final amount for a transaction is greater than the amount of the original authorisation. For example, a hotel guest might register for one night, but then decide to extend the reservation for additional night. In that case, an incremental authorisation might be performed in order to get approval for additional charges pertaining to the second night.

Issuer

The card issuer, typically a financial organisation authorised to issue cards. The issuer has a direct relationship with the relevant card scheme.

M

Master Virtual Cards (MVC)

A GPS virtual card that is restricted to loading and unloading to a physical card and cannot be used for e-commerce or in-store transactions. An MVC is used to reflect the value of the 'actual' money in the Issuer's bank account. An MVC guarantees that the load is limited to the amount prefunded (i.e. loaded onto MVC) and gives the Program Manager the ability to distribute funds immediately rather than having to wait for notification of each individual load into the Issuer Bank account.

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.

MIP

Mastercard Interface Processor (MIP) The processing hardware and software system that interfaces with Mastercard's Global Payment System communications network.

O

Offline Transaction

This is often used in scenarios where the merchant terminal is not required to request authorisation from the card issuer (for example for certain low risk, small value transactions used by airlines and transport networks). The card CHIP EMV determines if the offline transaction is permitted; if not supported, the terminal declines the transaction. Note: Since the balance on the card balance is not authorised in real-time, there is a risk that the card may not have the amount required to cover the transaction.

P

Partial Amount Approval

Some acquirers support a partial amount approval for Debit or Prepaid payment authorisation requests. The issuer can respond with an approval amount less than the requested amount. The cardholder then needs to pay the remainder using another form of tender.

Primary Card

The primary card is the main card which your customer uses to load funds into their account. The primary card can be linked to one or more secondary cards, which are loaded with funds from the primary card. Typically funds are transferred from the primary card to the secondary card.

Program Manager

A GPS 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.

S

Schema (XSD) File

A schema (XSD) file describes the structure and possible data values of the Cardholder XML report. You can validate the XML files you receive against the Schema (XSD file) to check it is in the correct format.

Secondary Card

Secondary cards can be linked to a primary card, which are loaded with funds from the primary card. Typically funds are transferred from the primary card to the secondary card.

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 GPS's user interface for managing your account on the GPS Apex system. It is also called Smart Processor GPS. Smart Client is installed as a desktop application and requires a VPN connection to GPS systems in order to be able to access your account.

SSL Certification

An SSL certificate displays important information for verifying the owner of a website and encrypting web traffic with SSL/TLS, including the public key, the issuer of the certificate, and the associated subdomains.

Stand In Processing (STIP)

The card network (Visa and Mastercard) may perform approve or decline a transaction authorisation request on behalf of the card issuer. Depending on your GPS mode, GPS may also provide STIP on your behalf, where your systems are unavailable.



TLS

Transport Layer Security (TLS) is a security protocol that provides privacy and data integrity for Internet communications. Implementing TLS is a standard practice for building secure web apps.

Triple DES

Triple DES (3DES or TDES), is a symmetric-key block cipher, which applies the DES cipher algorithm three times to each data block to produce a more secure encryption.



Validation

Checks to confirm the card is valid, such as CHIP cryptograms, mag-stripe data (if available) and expiry date

VROL System

Visa Dispute Resolution Online system, provided by Visa for managing transaction disputes.

Document History

This section provides details of what has changed since the previous document release.

Version	Date	Description	Revised by
1.4	28/03/2023	Update to the description of the contents of the Daily Cardholder XML report. See Introduction .	WS
	01/12/2022	Updated Copyright Statement	MW
1.3	12/10/2022	Added details of the file naming convention for both cloud and on-premise GPS solutions.	WS
	15/09/2022	New guide layout and HTML version now available.	PC
1.2	22/09/2021	Empty Cardholder XML report now generated if there were no cards issued in the last 24 hours. See Empty Report Example. (See GPSPRN-51)	WS
1.1	02/09/2021	New guide format and layout. Update to the usage of the <i><AccountExpiryDate></i> field. Empty Cardholder XML report now generated if there were no cards issued in the last 24 hours. See Empty Report Example. (See GPSPRN-51)	WS
1.0	22/03/2016	Document created.	IF

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