



# Bill Payment Issuer Upload File Specification

Version: 3.0

Date: 2023-08-03

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# 1. Revision History

| Date       | Version | Description   | Author            |
|------------|---------|---------------|-------------------|
| 2023-06-02 | 3.0     | Initial draft | Marinus Swanepoel |

## 2. Introduction

### 2.1. Purpose

This document describes the format and generation process of the Pay@ issuer upload file for bill payments. The intended audience is a bill payment issuer that is integrating/integrated with Pay@.

### 2.2. Overview

The upload file is generated by Pay@ after midnight and contains all transactions that were **finalized** on the previous day.

For direct settlement please refer to the [direct settlement](#) appendix for more information.



This file may contain transactions that were started more than a day ago, but were only finalized on the transaction day pertaining to this file.

### 2.3. Definitions, Acronyms, and Abbreviations

#### Finalized

Used to refer to a transaction that is in a final state. This means that Pay@ has received the transaction *completion* or *void* via online message, or the transaction has been reconciled offline with the transaction originator.

#### Network

The network of transaction points where a transaction can occur. Typically a retailer, bank website, smartphone app, etc.

#### SFTP

SSH File Transfer protocol. A protocol for secure file transfer by encrypting information sent using SSH.

#### SSH Keys

Cryptographically secure keys that can be used to authenticate a client on an SSH server. Each key pair consists of a public key and a private key.

#### Whitelisting

Identifying sources that are considered trustworthy, and allowing them access to certain resources.

### 3. File Naming

The file name will be structured as follows:

**EXTRACT-BILLPAY-nnnnn-YYYYMMDD.csv**

Where:

- **nnnnn** is the issuer account prefix. Pay@ supplies this value.
- **YYYYMMDD** is the transaction finalization date.

### 4. File Access

The file will be made available on the Pay@ SFTP site. Refer to the [SFTP](#) appendix for more information.



It is the responsibility of the issuer to retrieve the upload file from Pay@’s SFTP site.

## 5. File Format

The file contains one header record.

The header record is followed by data records. There may be no data records if no transactions completed on the previous day.

The last record is a trailer record.

Each record is pipe-separated.

All fields are described using the following scheme:

| Type      | Description   | ASCII code range (decimal)         |
|-----------|---|------------------------------------|
| a         | Alphabet characters<br>[a-zA-Z]   | 65-90 (A-Z)<br>97-122 (a-z)        |
| n         | Numeric   | 48-57 (0-9)                        |
| s         | Special characters  | 32-47<br>58-64<br>91-96<br>123-126 |
| as        | Alpha and special characters  | See a and s ranges                 |
| ans       | Alphanumeric and special characters   | See a, n, and s ranges             |
| ns        | Numeric and special characters  | See n and s ranges                 |
| decimal   | A decimal amount, including up to 9 decimal places.<br>The decimal separator is a dot, e.g. 599.3456                                    | 46 (.)<br>48-57 (0-9)              |
| date-time | A date-time with an offset from UTC/Greenwich in the ISO-8601 calendar system, e.g. 2018-07-03T12:31:55.740Z, 1999-12-31T23:59:59+02:00 |                                    |

## 5.1. Header Record

The format of the header record is as follows:

| Field Name     | Description                              | Type      | Value / Example           |
|----------------|--|-----------|---------------------------|
| Record Type    | Denotes the record as a header record.   | a1        | H                         |
| Issuer Prefix  | The issuer prefix as assigned by Pay@.   | an        | 11399                     |
| File Open Time | The timestamp when the file was created. | date-time | 2023-06-06T01:59:59+02:00 |

Sample record:

H|11399|2023-06-06T01:59:59+02:00

## 5.2. Data Record

The format of the data record is as follows:

| Field Name             | Description   | Type      | Value/Example                        |
|------------------------|---|-----------|--------------------------------------|
| Record Type            | Denotes the record as a detail record   | a1        | D                                    |
| Transaction ID         | The Pay@ unique transaction ID.   | ans..255  | 123456879                            |
| Payment Account Number | The account number is the full Pay@ account number (including the Pay@ prefix) use to make the payment.                         | ans..255  | 1139988897                           |
| Customer Account ID    | Uniquely identifies the customer or the customer's account on the issuer's system.  | ans..255  | 88897                                |
| Issuer Transaction ID  | An ID that uniquely identifies the transaction on the issuer system.  | ans..255  | 30809982-ae7c-4ad8-8534-6cbc40d39dc9 |
| Payment Date Time      | The date and time the transaction was initiated. A date-time with an offset from UTC/Greenwich in the ISO-8601 calendar system. | date-time | 1999-12-31T23:59:59+02:00            |
| Finalized Date Time    | The date and time the transaction was finalized. A date-time with an offset from UTC/Greenwich in the ISO-8601 calendar system. | date-time | 2000-01-01T23:59:59+02:00            |
| Transaction Amount     | The amount of the transaction.  | decimal   | 2100.000000                          |
| Total Fee              | The total transaction fee incurred by the transaction.  | decimal   | 6.123456                             |



| Field Name         | Description  | Type     | Value/Example  |
|--------------------|--|----------|--|
| Settlement Amount  | The transaction amount with all the fees deducted.   | decimal  | 2093.876544  |
| Tender Type        | The tender the transaction was paid with. Pay@ occasionally adds new tender types and all new tender types should be accepted. | ans..255 | CASH   |
| Network ID         | Uniquely identifies a network on the Pay@ system.  | ans..255 | 10329  |
| Network Name       | The name of the network where the transaction was initiated. This field can change at any point without prior notification     | ans..255 | Test Network   |
| Transaction Status | An indicator of whether the authorized transaction was completed or voided.  | ans..255 | Valid values are:<br>- PAID<br>- CANCELLED<br>- REVERSED |

Sample record:

D|123456879|1139988897|88897|30809982-ae7c-4ad8-8534-6cbc40d39dc9|1999-12-31T23:59:59+02:00|2000-01-01T23:59:59+02:00|2100.000000|6.123456|2093.876544|CASH|10329|Test Network|PAID

### 5.3. Trailer Record

The format of the trailer record is as follows:

| Field Name      | Description  | Type      | Value/Example             |
|-----------------|--|-----------|---------------------------|
| Record Type     | Denotes the record as a trailer record.  | a1        | T                         |
| Record Count    | The total number of records in the file, including the header and trailer records. | n         | 15                        |
| Total Amount    | The sum of the amount field in the data records.                                   | decimal   | 45623.2145879             |
| File Close Time | The date the file was closed   | date-time | 2023-06-06T01:59:59+02:00 |

Sample record:

```
T|6|45623.2145879|2023-06-06T01:59:59+02:00
```

## 6. Sample File

H|11399|2023-06-06T01:59:59+02:00

D|123456879|1139988897|88897|30809982-ae7c-4ad8-8534-6cbc40d39dc9|2023-06-04T23:59:59+02:00|2023-06-05T23:59:59+02:00|2100.000000|6.123456|2093.876544|CASH|10329|Test Network|PAID

D|123456879|1139988896|88897|30809982-ae7c-4ad8-8534-6cbc40d39dc9|2023-06-05T13:59:59+02:00|2023-06-05T14:00:59+02:00|100.000000|6.123456|93.876544|CASH|10329|Test Network|PAID

D|123456879|1139988895|88897|30809982-ae7c-4ad8-8534-6cbc40d39dc9|2023-06-05T14:59:59+02:00|2023-06-05T15:59:59+02:00|1100.000000|6.123456|1093.876544|CASH|10329|Test Network|PAID

T|5|3300.000000|2023-06-06T02:05:59+02:00

## Appendix A: SFTP

An SFTP account will be created on the Pay@ SFTP site for the client.

Pay@ supplies the following when setting up a client SFTP account:

- The Pay@ SFTP URL.
- The Pay@ SSH public key.
- An account login name for the client.

Pay@ requires the following from a client when setting up an account:

- The client's SSH public key.
- A list of IP addresses (or IP address ranges) from which the client will access Pay@'s SFTP site. Pay@ will whitelist these addresses on the SFTP server. This step only applies to static IP addresses (or static IP address ranges).

## Appendix B: Direct Settlement

Direct settlement is when an agreement has been put in place that a network directly settles the issuer for the transactions completed and Pay@ is only responsible for recording the transactions and collecting transaction fees.

A network can directly settle an issuer in the following ways:

- A payment via a banking application/web portal.
- A cash deposit via a bank.
- A bulk payment using a Pay@ reference number for the issuer at any participating network.

For these transactions a separate reconciliation file will be generated in the same format as the upload file, with minor differences, as follows:

## B.1. File Naming

The file name will be structured as follows:

UPLOAD-DIRECT-SETTLE-nnnnn-YYYYMMDD.csv

Where:

- **nnnnn** is the issuer account prefix. Pay@ supplies this value.
- **YYYYMMDD** is the transaction finalization date.

Sample file name: **UPLOAD-DIRECT-SETTLE-11399-20210412.csv**

## B.2. Data Record

The format of the data record with differences are:

| Field Name           | Description   | Type    | Value/Example |
|----------------------|---|---------|---------------|
| MerchantFee(CardFee) | The fee charged by the bank for card transactions. No merchant fees are charged, so the value will be zero. | decimal | 0.00          |
| CashHandlingFee      | The fee charged for cash transactions. No cash handling fees are charged, so the value will be zero.        | decimal | 0.00          |
| SettlementAmount     | The transaction fee, represented as a negative amount to indicate that this is owed to Pay@.                | decimal | -6.123456789  |

Sample record:

D|13|B1234|113991234566799|2012-09-18 13:55:55|100.00|4.00|0.00|0.00|-4.00|CreditCard|SampleNetwork|SC0918135554|1234|15|1