

BAI will not designate uniform type codes in this range, and users of the specification are free to assign unique type codes to meet customer needs within the following guidelines:

- These codes should only be used for transactions between parties that have agreed to support the nonstandard type.
- BAI will not support type codes in the 900–999 range and users of the *Specification* might not accept these types in transmissions.

Customized type codes should fall within the following ranges:

Type Codes	Description
900–919	Account Status Codes
920–959	Credit Summary and Detail
960–999	Debit Summary and Detail

FILE STRUCTURE

To simplify processing, balance reporting transmission files are divided into “envelopes” of data. These envelopes organize data at the following levels:

- Account
- Group
- File

Account: The first level of organization is the account. An account envelope includes balance and transaction data.

Example: Account #1256793 at Last National Bank, previous day information as of midnight.

Group: The next level of organization is the group. A group includes one or more account envelopes, all of which represent accounts at the same financial institution. All information in a group is for the same date and time.

Example: Several accounts from Last National Bank to XYZ Reporting Service, same-day information as of 9:00 AM.

File: Groups are combined into files for transmission. A file includes data transmitted between one sender and one receiver. A file can include groups of data from any number of originating financial institutions destined for any number of ultimate receivers. The groups within a file may contain different As-of-Dates and times.

For a specific account at a financial institution, all records in an account envelope refer to the same account as of the same date and time.

Intermediaries may combine groups from several different source files into a new file for transmission. For example, Last National Bank may combine reports from several correspondent banks into a single file for transmission to XYZ Reporting Service.

Example: A file from Last National Bank to XYZ Reporting Service could contain both of the following groups:

- From Last National Bank to XYZ, same day as of 9:00 AM.
- From Hometown Bank (via Last National and XYZ) to Megbank, previous day as of midnight.

RECORD DESCRIPTIONS

Balance Reporting files include the following types of records:

Record Code	Record Name	Purpose
01	File Header	The file header marks the beginning of a file. It identifies the sender and receiver of the transmission, and it describes the structure of the file.
02	Group Header	The group header identifies a group of accounts that are from the same originator and includes the same as-of-date and as-of-time.
03	Account Identifier and Summary/Status	This record identifies the account number and reports activity summary and account status information. Summary information may be accompanied by an item count and funds availability distribution.
16	Transaction Detail	This record is used for transmission of detail transaction information. Transaction detail may include two reference numbers and a free-form alphanumeric text.

Record Code	Record Name	Purpose
88	Continuation	A Continuation record is used when data exceed the maximum physical record length, or whenever it is desirable to continue data into an additional record. It may follow any record type, including another "continuation" (88) record.
49	Account Trailer	The Account Trailer record provides account control totals.
98	Group Trailer	This record provides group control totals.
99	File Trailer	This record provides file control totals.

FILE LAYOUT

The records in a balance reporting transmission file are ordered as follows:

Record Code	Record Name	Purpose
01	File Header	Begins File
02	Group Header	Begins Group
03	Account Identifier	Begins Account
16	Transaction Detail (Optional)	Within Account
49	Account Trailer	Ends Account
98	Group Trailer	Ends Group
99	File Trailer	Ends File

A file may contain several groups. Each group begins with an 02 Group Header record and ends with a 98 Group Trailer record. This procedure allows a file to contain information from multiple originators.

A group may contain several accounts. Each account begins with an 03 record. The 03 record may or may not be followed by a transaction detail record (16). The account always ends with a 49 Account Trailer record.

The following list shows multiple groups within a file and multiple accounts within a group:

Record Code	Record Name	Purpose
01	File Header	Begins File
02	Group Header	Begins First Group
03	Account Identifier	First Account
16	Transaction Detail	First Account Detail
49	Account Trailer	Ends First Account
03	Account Identifier	Second Account
49	Account Trailer	Ends Second Account
98	Group Trailer	Ends First Group
02	Group Header	Begins Second Group
03	Account Identifier	Begins Third Account
88	Continuation	Continues Previous 03 Record
49	Account Trailer	Ends Third Account
98	Group Trailer	Ends Second Group
99	File Trailer	Ends File

The preceding example included two groups. The first group included two accounts, the second included one account. Only the first account of the first group included transaction detail.

Continuation records (88), such as the one in the second group, may be used to continue any record.

RECORD CHARACTERISTICS

BAI *Cash Management Balance Reporting Specifications* define a format for data within files and records. The specifications ***do not*** replace, define, restrict, supersede, or alter data communication or telecommunication protocols used by senders and receivers of these files.

Physical Records and Logical Records

The specifications refer to both physical and logical records, which are defined here to avoid confusion.

Physical Record: A group of contiguous characters occupying a specific number of character spaces.

Logical Record: The group of characters within a physical record that convey meaningful, related data. The logical record includes the record code, other codes defined by the format, all data, field delimiters and text.

Example: If the file header specifies a physical record length of 80 characters but only 65 characters are required to describe a transaction detail in the correct format, then the following conditions are true:

- the physical record occupies characters 1 through 80
- the logical record occupies characters 1 through 65
- characters 66 through 80 are part of the physical record but not part of the logical record. Characters in these positions are meaningless and should be disregarded.

Fixed Length Records and Variable Length Records

Balance reporting physical records may be of fixed length or of variable length. The “Physical Record Length” field in the File Header (01) record specifies number of characters in fixed length records. If the “Physical Record Length” field is defaulted, the file contains variable length records.

Free Format Fields/Field Delimiters

The specification employs free-format fields within records. Free-format fields allow more flexibility than fixed fields for reporting diverse cash management data.

- Fields within records are delimited by a comma “,”.
- The end of a record that does not include text is indicated by the delimiter slash “/”.

The delimiter slash “/” indicates the end of a record that does not include text. It also indicates the end of the last field within the record. Do not use a comma to mark the end of the last field. A comma followed by a slash is used to indicate a defaulted field at the end of the record. The Sample Transmission in Appendix D and the example in each record description indicate the correct use of delimiters.

Some fields within records are optional. If an optional field is defaulted or left unspecified, this must be indicated by adjacent delimiters “,” or “/”. Optional fields at the end of a record cannot be left off but must be indicated by adjacent delimiters.

Because a comma “,” and a slash “/” are used as field/record delimiters, neither can be included in any field except “Text.” Text may include comma “,” or slash “/” but may not begin with comma “,” or slash “/”.

Leading Zeros

The record type is indicated by two digits. Both are significant. Do not delete the leading zero for record types 01, 02 and 03.

All three digits in a type code are significant. Do not delete leading zeros for status type codes 001 through 099.

Leading zeros in a customer account number are significant. Do not delete leading zeros in account numbers. For example, the account number “0087654” should not be transmitted as “87654”.

End of Record

The end of a logical record that does not contain text is indicated by the delimiter slash “/”.

The last field in the type 16 Transaction Detail record is “Text”. The text must not begin with slash “/”, but may contain comma “,” or slash “/” after the first text character. Therefore, the end of a record ending in text cannot be delimited using these characters. Instead, the logical record continues until another record that is not a continuation (88) record begins. If fixed length records are specified, spaces between the end of the text and the end of the physical record must be filled with blank characters.

If a type 16 record does not include text, the text field is defaulted, as indicated by the adjacent delimiters “,/”.

3 Record Formats

01 – FILE HEADER

The file header marks the beginning of a file. It identifies the sender and the receiver of the transmission, and it describes the structure of the file. All fields are required except those labeled optional.

Field Name	Field Description
Record Code	01
Sender Identification	Transmitter of file. Alphanumeric.
Receiver Identification	Next recipient of file. Alphanumeric.
File Creation Date	YYMMDD format; sender date.
File Creation Time	Military format (2400); sender time zone Times are stated in military format (0000 through 2400). 0000 indicates the beginning of the day and 2400 indicates the end of the day for the date indicated. Some processors use 9999 to indicate the end of the day. Be prepared to recognize 9999 as end-of-day when receiving transmissions.
File Identification Number	Identification number defined by the sender. The number must be new for each file with the same file creation date. Used to uniquely identify those files transmitted between a sender and a receiver on a given date.
Physical Record Length	Optional. Number of characters in a physical record. Default is variable length records.
Block Size	Optional. Number of physical records in a block. Default is variable block size.
Version Number	2

Delimiters

- Comma “,” delimits fields.
- Slash “/” delimits the end of the logical record.
- Adjacent delimiters, “,,” or “,/” identify defaulted or unspecified fields.
- All defaulted or unspecified fields must be identified.

Sample 01 Record

01,122099999,123456789,040621,0200,1,55,,2/

Last National Bank (122099999) is sending data to its third-party intermediary, Data Corp. (123456789). The file was created June 21, 2004 (040621) at 2:00 AM (0200). This is the first file created on this date and is identified as number 1. The physical records in this file are (55) characters in length. No block size is specified. This default is noted by adjacent delimiters (,,). The file is in Version (2) of the *Specifications*. The slash (/) indicates that the preceding character was the last significant character in this physical record.

02 – GROUP HEADER

The group header identifies a group of accounts, all of which are from the same originator and include the same As-of-Date. All fields are required except those labeled optional.

Field Name	Field Description
Record Code	02
Ultimate Receiver Identification	Optional. Final receiver of this group of data. Alphanumeric.
Originator Identification	Originator. Alphanumeric.
Group Status	1 = Update 2 = Deletion 3 = Correction 4 = Test Only See “Group Status Codes” for definitions.
As-of-Date	YYMMDD; Originator date.

Field Name	Field Description
As-of-Time	Optional. Military format (2400); originator time zone. For reference only. Times are stated in military format (0000 through 2400). 0000 indicates the beginning of the day and 2400 indicates the end of the day for the date indicated. Some processors use 9999 to indicate the end of the day. Be prepared to recognize 9999 as end-of-day when receiving transmissions.
Currency Code	Optional. Default is currency code "USD." See Appendix B for currency codes.
As-of-Date Modifier	Optional. 1 = Interim previous-day data 2 = Final previous-day data 3 = Interim same-day data 4 = Final same-day data As-of-Date Modifier does not affect processing. For reference only.

Delimiters

- Comma “,” delimits fields.
- Slash “/” delimits the end of the logical record.
- Adjacent delimiters “,,” indicate defaulted or unspecified fields.
- All defaulted or unspecified fields must be identified.

Sample 02 Record

02,031001234,122099999,1,040620,2359,,2/

A group of data is being sent to a bank (031001234) from Last National Bank (122099999). The data in the file has a group status of update (1) and the data are as-of-June 20, 2004 (040620) at 11:59 PM (2359). The optional group currency code field is defaulted as indicated by the adjacent delimiters (,,) and therefore is USD (US dollars). The data are final previous-day data as signified by the As-of-Date modifier (2).

03 – ACCOUNT IDENTIFIER AND SUMMARY STATUS

This record identifies the account number and reports summary and status information. Summary information may be accompanied by an item count and funds availability distribution. An 03 record must be used to identify each account. All fields are required except those labeled optional. 03 records cannot report transaction detail. Detail is reported in record 16.

Field Name	Field Description
Record Code	03
Customer Account Number	Customer account number at originator financial institution. The field is alphanumeric and includes significant leading zeroes. Must not contain a comma “,” or slash “/”.
Currency Code	Optional. Default is group currency code.
*Type Code	Optional. Identifies the type of summary or status data. See Appendix A for type codes. Default indicates that no status or summary data are being reported.
*Amount	Optional. Expressed without a decimal. The currency code will determine the implied decimal. Status amounts are signed positive “+” or negative “-”. Default of sign is positive. Summary amounts may only be positive or unsigned. Default of field indicates that no amount is being reported.
**Item Count	Optional. Integer field. Default is “unknown.” For summary type codes only; must be defaulted for Status type codes. No implied decimal.
**Funds Type	<p>Optional. Types are</p> <p>0 = immediate availability (zero) 1 = one-day availability 2 = two-or-more days availability S = distributed availability V = value dated D = distributed availability Z = unknown (default)</p> <p>If funds type = S, the next three fields are immediate availability amount, one-day availability amount, and more than one-day availability amount. See section “Funds Type.”</p> <p>If funds type = V, the next two fields are value date (YYMMDD) and value time in military format (2400). Both are for the originator’s business day and time zone. Value date is the date the originator makes funds available to the customer. Value dates prior to the As-of-Date in the Group Header record are not prohibited but are discouraged. Be prepared to receive such value dates. Records with value dates prior to the As-of-Date should be processed as if the value date was equal to the As-of-Date.</p>

Field Name	Field Description
**Funds Type (continued)	<p>Do not use prior value dates to adjust availability.</p> <p>Value time is optional and may be defaulted by adjacent delimiters. Times are stated in military format (0000 through 2400). 0000 indicates the beginning of the day and 2400 indicates the end of the day for the date indicated. Some processors use 9999 to indicate the end of the day. Be prepared to recognize 9999 as end-of-day when receiving transmissions.</p> <p>If funds type = D, the next field indicates the number of availability distributions, and each of the following pair of fields indicate the number of days and the amount of available funds, respectively.</p> <p>Format – “X,a,\$,a,\$” X = number of distributions (integer) A = availability in days (integer) \$ = availability amount</p> <p>The number of days over which funds availability may be distributed is not limited. The number of “a” (day) and “\$” (amount) fields must equal the integer stated in “x” (number of distributions). For example, if “x” is eight (8), there must be eight “a,\$” pairs.</p> <p>See Section “Funds Type.”</p> <p>Amounts in the Funds Type field have the same currency code and implied decimals specified in the 03 record. Amounts in the Funds Type field are not included in the Account, Group and File Trailer batch control totals.</p>

*Type 03 records may report several different status and/or summary amounts for the same account. For example, a single 03 record might report ledger balance and available balance, as well as the amount, item count and funds type for total credits and total debits. The “Type Code,” “Amount,” “Item Count” and “Funds Type” fields are repeated to identify each status or summary type. *See Appendix A for Type Codes.*

**Type 03 records allow the reporting of item counts and funds availability for summary data only. Status availability is reported by individual type codes (e.g., type code 072, one-day float). The “Item Count” and “Funds Type” fields following a status amount should be defaulted by adjacent delimiters.

Delimiters

- Comma “,” delimits fields.
- Slash “/” delimits the end of the logical record.
- Adjacent delimiters “,,” or “,/” indicate defaulted or unspecified fields.
- All defaulted or unspecified fields must be identified.

Note: An 03 record must include an account number but might not include status or summary data. For example, an 03 record would not report status or summary data if it is used only to identify the account number for Transaction Detail (16) records that follow. In this case, the account number would be followed by five commas and a slash “,,,,,” to delimit the Currency Code, Type Code, Amount, Item Count and Funds Type fields, which are defaulted.

Example: 03,5765432,,,,,/.

Sample 03 Record

03,0975312468,,010,500000,,190,70000000,4,0/

Data in this record are for the sending bank’s account number (0975312468). The leading zero in the account number is significant and must be included in the data. The optional currency code is defaulted to the group currency code. The amount for type code (010) is \$5,000.00 (500000). The Item Count and Funds Type fields are defaulted to “unknown” as indicated by adjacent delimiters (,,). The amount for type code (190) is \$700,000.00 (70000000). The item count for this amount is four (4) and the availability is immediate (0).

16 – TRANSACTION DETAIL

This record reports transaction detail with accompanying text and reference numbers. All fields are required except those labeled optional.

Field Name	Field Description
Record Code	16
Type Code	<p>Identified the type of detail data. See Appendix A for type codes.</p> <p>Type code 890 has been established to transmit information not associated with an Account Status, Summary amounts or Transactions. Type code 890 is neither a debit nor a credit. It is a detail type code and is used in Type 16 Transaction Detail records. The Text field in a Type 16 record with 890 type code contains the non-monetary information. The Amount and Funds Type fields should be defaulted and the Bank Reference Number and Customer Reference Number may be either used as part of the message or defaulted. An example of such a message is illustrated below:</p> <p>16,890,,,,,detail reports will be delayed until 11:00 AM.</p>
Amount	<p>Optional. Always positive (unsigned). Expressed without a decimal. Currency code in a Group Header record or in an Account Identifier record determines implied decimal. Default indicates that no amount is being reported.</p>

Field Name	Field Description
Funds Type	<p>Optional. Types are as follows:</p> <p>0 = immediate availability (zero) 1 = one-day availability 2 = two-or-more-days availability S = distributed availability V = value dated D = distributed availability Z = unknown (default)</p> <p>If funds type = S, the next three fields are immediate availability amount, one-day availability amount, and more than one-day availability amount.</p> <p>If funds type = V, the next two fields are value date (YYMMDD) and value time in military format (2400). Both are for the originator's business date and time zone. The value date is the date the originator makes funds available to the customer. Value dates prior to the As-of-Date in the Group Header record are not prohibited but are discouraged. Be prepared to receive such value dates. Records with value dates prior to the As-of-Date should be processed as if the value date was equal to the As-of-Date. Do not use prior value dates to adjust availability.</p> <p>Value time is optional and may be defaulted by adjacent delimiters. Times are stated in military format (0000 through 2400). 0000 indicates the beginning of the day and 2400 indicates the end of the day for the date indicated. Some processors use 9999 to indicate the end of the day. Be prepared to recognize 9999 as end-of-day when receiving transmissions.</p> <p>If funds type = D, the next field indicates the number of availability distributions and each following pair of fields indicate the number of days and the amount available, respectively.</p> <p>Format – "X,a,\$,a,\$" X = number of distributions (integer) A = availability in days (integer) \$ = available amount</p> <p>The number of days over which funds availability may be distributed is not limited. The number of "a" (day) and "\$" (amount) fields must equal the integer stated in "x" (number of distributions). For example, if "x" is eight (8), there must be eight "a,\$" pairs.</p> <p>See section "Funds Type."</p> <p>Amounts in the Funds Type field have the same currency code and implied decimals as the "amount" following the type code. Amounts in the Funds Type field are not included in the Account, Group and File Trailer batch control totals.</p>

Field Name	Field Description
Bank Reference Number	Optional. Alphanumeric field defined by the originator. Must not contain a comma “,” or a slash “/”. The length of the Bank Reference Number is not limited. However, the use of reference numbers over 76 characters in length is highly discouraged because many processors use 80 character records.
Customer Reference Number	Optional. Alphanumeric field defined by the originator. Must not contain a comma “,” or a slash “/”. The length of the Customer Reference Number is not limited. However, the use of reference numbers over 76 characters in length is highly discouraged because many processors use 80 character records. The Customer Reference Number will be the check number for the Transaction Detail type codes 474, 475 and 395.
Text	Optional alphanumeric field defined by the originator. Must not begin with a slash “/”, but may contain a comma “,” or a slash “/” after the first character.

Note: Only one detail transaction may be reported by each Type 16 record. Record 16 cannot report status or summary amounts. Status and summary are reported in record 03.

Delimiters

- Comma “,” delimits fields.
- Adjacent delimiters “,,” indicate defaulted or unspecified fields.
- The end of the “text” field is indicated by the beginning of the next record (unless it is a type 88 continuation record). Spaces between the end of the text and the end of the physical record must be filled with blanks if fixed length records are used. If the Type 16 record does not include text, the end of the logical record is indicated by the adjacent delimiters “,/” following the Customers Reference Number field.

Note: Transaction Detail records report activity in accounts identified by 03 records. All Type 16 records following an 03 record refer to the account identified in the “Customer Account Number” field. (See Record Type 03.)

Sample 16 Record

16,165,1500000,1,DD1620,, DEALER PAYMENTS

This is a Detail Record (16). The amount for type code 165 is \$15,000.00 (1500000) and has one-day (1) deferred availability (1). The bank reference number is (DD1620). There is no customer reference number (,,). The text is (DEALER PAYMENTS). The remainder of the field is blank filled if fixed length records are used, and the text field is delimited by the fact that the next record is not “88”.

88 – CONTINUATION RECORD

Record 88 is a Continuation record. If the data in any type of record exceed the physical record size, or if dividing the record is desirable for any other reason, an 88 record allows the data to continue in the same format. The continuation is labeled as a type 88 record. A Continuation (88) record may follow any type of record, including another Continuation (88).

Any record type may be continued by a type 88 Continuation record. A field may not be split across physical records unless that field is a text field.

Field Name	Field Description
Record Code	88
(Next Field)	The “Record Code” field is followed by a continuation of the preceding record. The format is exactly the same as in the preceding record. If the preceding record ended within a text field, the text continues in the 88 record. If the preceding record did not end within the text field, the 88 record continues with whatever field follows the final field in the preceding physical record. Do not split nontext fields between records. If a nontext field is begun in one record, it must be completed in that record. The following 88 record may continue with the next field.

Delimiters

- Delimiters are the same as for the preceding record. If the preceding physical record does not end within a text field, that record should end with a delimiter slash “/”, even if the following Continuation (88) includes or begins with text. If the preceding physical record ends within text that is to be continued, no delimiter should be placed at the end of that record.
- If a record is to be continued by a type 88 Continuation record, the last field before the continuation is delimited by a slash “/”, **not** by a comma and a slash “,/”. The slash

replaces the comma that ordinarily delimits that field. The example below correctly illustrates the use of delimiters.

Sample 88 Record

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16,115,10000000,S,5000000,4000000,1000000/
88,AX13612,B096132,AMALGAMATED CORP. LOCKBOX
88,DEPOSIT-MISC. RECEIVABLES
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If the preceding record was a 16 record that ended with the Funds Type field, the 88 record would continue with “Bank Reference Number.”

49 – ACCOUNT TRAILER

The Account Trailer record provides account level control totals. All fields are required.

Field Name	Field Description
Record Code	49
Account Control Total	Algebraic sum of all “Amount” fields in the preceding type 03 record and all type 16 and 88 records associated with that account. The total does not include amounts reported in Funds Type or Item Count fields. This field includes the sign “+” or “-” for the total. If no sign precedes the total, the default is positive.
Number of Records	Integer. The total number of records in the account, including the 03 record and all 16 and 88 records, and including this account trailer 49 record.

Delimiters

- Comma “,” follows “Record Code” and “Account Control Total.”
- Slash “/” follows “Number of Records” and indicates the end of the logical record.

Note: There must be one 49 record for each 03 record. All 16 and 88 records between the 03 record and the 49 record refer to the account identified in the 03 record.