

Record Structure

Chapter overview

Chapter 1 describes the basic structure for the leader, the directory, and the control and variable fields in OCLC-MARC bibliographic and authority records.

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1.1 Introduction

OCLC-MARC format OCLC-MARC formats are sets of codes and content designators defined for encoding particular types of machine-readable records. They serve as the vehicle for bibliographic and authority data for all types. The formats provide specifications for the exchange of information between systems.

Additional information on OCLC-MARC format For descriptions of the OCLC-MARC bibliographic and authority records, see *Bibliographic Formats and Standards* and *Authorities: Format and Indexes*.

Content designation Content designation identifies and characterizes the data elements that comprise OCLC-MARC records.

Tags and fields

- OCLC-MARC records are organized into fields identified by 3-character numeric tags
- The tag is stored in the directory entry for the field, **not** the field itself
- Fields are grouped into blocks according to the first character of the tag, which generally identifies the function of the data in the record
- The type of block varies with each type of record: bibliographic or authority

Bibliographic record blocks Bibliographic records have the following blocks:

0xx Control information, numbers, and codes
1xx Main entry
2xx Titles and title paragraph
3xx Physical description, etc.
4xx Series statements
5xx Notes
6xx Subject access fields
7xx Added entries other than subject or series; linking fields
8xx Series added entries, location, and alternate graphics
9xx OCLC-defined local fields

Authority record blocks Authority records have the following blocks:

0xx Control information, numbers, and codes
1xx Heading
2xx Complex see references
3xx Complex see also references
4xx See from tracings
5xx See also from tracings
6xx Reference notes, treatment decisions, notes, etc.
7xx Heading linking entries
8xx Location and alternate characters
9xx OCLC-defined local fields

Repeatability

- All fields are theoretically repeatable
- The nature of the data in the fields, however, may preclude repetition
- Examples of nonrepeatable fields include 001 (Control Number), 005 (Data and Time of Latest Transaction), and field 245 (Title Statement)
- *OCLC-MARC Records* specifies the repeatability (R) or nonrepeatability (NR) of each field and subfield in the lists of content designators

Coded data

- OCLC-MARC formats include specifications for data elements represented by coded values
- Coded values consist of fixed-length character strings
- Elements within coded-data fields or subfields may be identified by relative character position
- Although coded data occurs most frequently in the leader, directory, and variable control fields, any field or subfield may be defined for coded data

1.2 General Structure

Introduction

In MARC 21 formats, the record structure is the order in which the content designators and content appear in the record and/or file. Record structure can include such specifications as tape media, header, blocking techniques, and characters sets used in the record and in files.

- Note that the terms *record format* and the *record structure* are often used interchangeably
- *Record format* is generally the broader term and often is used to refer to the record structure, content designation, and content of the record

Leader

- The leader consists of data elements that contain coded values and are identified by relative character position
- Data elements define parameters for processing the record
- Length = 24 characters

Directory

- The record directory consists of a series of fixed-length entries containing the tag, length, and starting character position of each control and variable field
- Length = 12 characters
- Directory entries for control fields precede entries for data fields
- Entries for control fields are sequenced by tag in increasing numerical order
- Entries for data fields are arranged in ascending order according to the first digit of the tag

Control fields

- Control fields are assigned tags that begin with 2 zeros
- They contain data and a field terminator
- They do **not** contain indicators or subfield codes
- They include data useful for record selection or special processing

The following are the currently implemented control fields listed by record type:

Record Type	Control Field
Bibliographic	001, 003, 005, 006, 007, 008
Authority	001, 003, 005, 008

003 control field

Depending on the service from which the record is received, it has one of the following in the 003 control field:

- In exported records, the 003 field contains OCLC's organization symbol *OCoLC*
- In original records from the OCLC CatCD[®] for Windows system, the 003 field contains the user-input control number identifier

1.2 General Structure (continued)

Variable fields

- Variable data fields may differ in content for each type of MARC record
- They consist of variable-length alphanumeric data
- They begin with 2 indicators
- Subfield delimiters and codes separate alphanumeric data within variable fields
- No spaces appear before or after subfield delimiters and codes
- All fields end with a field terminator
- The record terminator follows the last field in the record.

Elements of general record structure

Each bibliographic or authority record has the following elements:

Element	Description
Leader	<ul style="list-style-type: none">• A fixed field that occurs at the beginning of each record• 24 characters in length
Directory	<ul style="list-style-type: none">• An entry that contains tag, length, and starting position for each fixed and variable field in the record• A field terminator ends the record directory• 12 characters in each directory entry
Control Field	<ul style="list-style-type: none">• A variable field that contains information useful or required for processing• Assigned tags begin with 2 zeros• Contains alphanumeric data• Positions within the control field identify specific data elements
Data Field	<ul style="list-style-type: none">• A variable field containing bibliographic or other data• Assigned tags do not begin with 2 zeros• Not necessarily in numeric sequence within a block of tags• The last field ends with a field terminator and a record terminator
Field Terminator	<ul style="list-style-type: none">• ASCII character which ends the directory and each variable field within a record• Also known as a record separator
Record Terminator	<ul style="list-style-type: none">• ASCII character that is the final character of a record, following the field terminator of the last data field• Also known as a group separator• Before December 8, 1984, the last field ended with a record terminator; the separate field terminator was not used

1.3 Leader

Introduction

The leader is the first field in the record. It has a fixed length of 24 characters (character positions 00–23). The following diagram illustrates the structure of the leader as defined in MARC 21. The numbers indicate the character positions occupied by each part of the leader.

Leader structure

00–04	05	06	07
Record Length	Record Status	Type of Record	Bibliographic Level/Undefined

08	09	10	11
Type of Control/Undefined	Character Coding Scheme/Undefined	Indicator Count	Subfield Code Count

12–16	17	18	19
Base Address of Data	Encoding Level	Descriptive Cataloging Form/Undefined	Linked Record Requirement/Undefined

20–23
Entry Map

Leader elements

Each bibliographic or authority record has the following leader elements:

Element	Description
Record Length	<ul style="list-style-type: none">• Positions 00–04• 5-character number equal to the length of the entire record, including itself and the record terminator• Right justified with leading zeros
Record Status	<ul style="list-style-type: none">• Position 05• 1-character alphabetic code that indicates the relationship of the record to a file for file maintenance purposes

1.3 Leader (continued)

Leader elements (continued)

Element	Description
Type of Record	<ul style="list-style-type: none">• Position 06• In bibliographic records, a 1-character alphabetic code that differentiates records created for various types of content and materials• In authority records, a 1-character alphabetic code that indicates the characteristics of and defines the components of the record
Bibliographic Level/Undefined	<ul style="list-style-type: none">• Position 07• 1-character alphabetic code that indicates the relationship between the item being cataloged and its constituent parts• Bibliographic Level not defined in MARC 21 for authority records• In those records, character position 07 contains a blank ()
Type of Control/Undefined	<ul style="list-style-type: none">• Position 08• 1-character code that indicates the archival control status• Type of Control not defined in MARC 21 for authority records• In those records, character position 08 contains a blank ()
Character Coding Scheme/Undefined	<ul style="list-style-type: none">• Position 09• 1-character code that identifies the Character Coding Scheme used in a record• The coding scheme used affects the number of octets needed per character, the placement of non-spacing characters, and the use of escape sequences and may affect the character repertoire• Character Coding Scheme not defined for authority records• In OCLC records, character position 09 usually contains a blank () Note: In records with the Unicode UTF-8 character set, leader position 09 is coded a.
Indicator Count	<ul style="list-style-type: none">• Position 10• 1-character number equal to the number of indicators occurring in each variable data field• 2 character positions at the beginning of each variable data field are reserved for indicators• In OCLC records, always = 2
Subfield Code Count	<ul style="list-style-type: none">• Position 11• 1-character number equal to the number of character positions used for a subfield code in variable data fields• A subfield code consists of a delimiter (‡) and a lowercase alphabetic or numeric data element identifier• In OCLC records, always = 2

1.3 Leader (continued)

Leader elements (continued)

Element	Description
Base Address of Data	<ul style="list-style-type: none">• Positions 12–16• 5-character number that specifies the first character position of the first variable control field in the record• The number is the base from which the starting character position of all the other fields in the record is addressed in the directory• The starting character position in the directory entry for each field of the record is relative to the first character of the first variable control field rather than the beginning of the record• Equal to the sum of the lengths of the leader and the directory, including the field terminator character at the end of the directory• Right justified with leading zeros
Encoding Level	<ul style="list-style-type: none">• Position 17• In bibliographic records, a 1-character alphanumeric code that indicates the fullness of the bibliographic information and/or content designation• In authority records, a 1-character alphanumeric code that indicates whether the record is complete or incomplete
Descriptive Cataloging Form/Undefined	<ul style="list-style-type: none">• Position 18• 1-character alphanumeric code that indicates characteristics of the descriptive data in the record through reference to cataloging norms• Descriptive Cataloging Form not defined for authority records• In those records, character position 18 contains a blank ()
Linked Record Requirement/Undefined	<ul style="list-style-type: none">• Position 19• 1-character alphanumeric code that indicates whether a note containing basic identification information can be generated from a 76x–78x (Linking Entry) field without accessing the actual related record• Linked Record Requirement not defined for authority records• In OCLC records, character position 19 contains a blank ()

1.3 Leader (continued)

Leader elements (continued)

Element	Description
Entry Map	<ul style="list-style-type: none"> Positions 20–23 1-character number in each position that indicates the structure of the entries in the directory
◆ Length of Length-of-Field Portion	<ul style="list-style-type: none"> Position 20 1-character number that indicates the length-of-field portion of a directory entry In OCLC records, always = 4
◆ Length of Starting-Character-Position Portion	<ul style="list-style-type: none"> Position 21 1-character number that indicates the starting-character-position portion of a directory entry In OCLC records, always = 5
◆ Transaction Type Code/Length of Implementation-Defined Portion	<ul style="list-style-type: none"> Position 22 In bibliographic records, may contain either information coded in hexadecimal or a 1-character code that indicates the transaction type code. (Transaction codes were stored in byte 22 prior to November 12, 2006.) <p>Note: Since November 12, 2006, transaction codes for bibliographic records are stored in field 994. For historical details and a complete list of transaction codes, see the information on field 994 in chapter 2 of this guide, “Content Designators for Bibliographic Data.”</p>
◆ Undefined	<ul style="list-style-type: none"> Position 23 Undefined In OCLC records, always = 0

Entry map structure

The structure of the entry map (character positions 20–23) is shown below:

20	21	22	23
Length of Length-of-Field Portion	Length of Starting-Character-Position Portion	Transaction Type Code/Length of Implementation-Defined Portion	Undefined

1.4 Directory

Introduction

The record directory consists of a series of fixed-length entries containing the tag, length, and starting character position of each control and variable field in the record. A field terminator ends the record directory. Each entry is 12 bytes.

Directory structure

The following diagram illustrates the structure of a directory entry:

00–02	03–06	07–11
Tag	Field Length	Starting Character Position

Directory elements

Each variable field in bibliographic or authority records has the following elements:

Element	Description
Tag	<ul style="list-style-type: none">• Positions 00–02• 3-character number that identifies an associated variable field
Field Length	<ul style="list-style-type: none">• Positions 03–06• 4-character number that specifies the length of the variable field to which the entry corresponds• Equal to the sum of the length of the indicators, subfield codes, data, and the field terminator associated with the field• If fewer than 4 digits, right justified with leading zeros
Starting Character Position	<ul style="list-style-type: none">• Position 07–11• 5-character number that specifies the starting character position of the variable field to which the entry corresponds relative to the base address of the data of the record• If fewer than 5 digits, right justified with leading zeros

1.5 Control and Variable Fields

Introduction

The control and variable fields consist of variable-length alphanumeric data. They may differ in content for each type of MARC record.

Subfield delimiters and codes separate alphanumeric data within variable fields. No spaces appear before and after subfield delimiters and codes.

All fields end with a field terminator. A field terminator code and a record terminator code follow the last field.

Control fields

Control fields in MARC 21 formats are assigned tags that begin with 2 zeros.

- They contain data and a field terminator
- They do **not** contain indicators or subfield codes
- The control number field is assigned tag 001 and contains the control number of the record
- Each record contains only one control number field (with tag 001), which is located at the base address of data

Variable fields

Variable fields in MARC 21 formats are assigned tags which are ASCII numeric characters and which do **not** begin with 2 zeros.

- Such fields contain indicators and subfield codes, as well as data and a field terminator
- The number, length, or content other than that already stated or implied, for example, those resulting from the limitation of total record length, is not restricted

1.5 Control and Variable Fields (continued)

Variable field components

Each variable field in a bibliographic or authority record has the following components:

Element	Description
Indicator 1 and 2	<ul style="list-style-type: none">• First character positions of a variable data field, preceding any subfield code (delimiter plus data element identifier) which may be present• Each data field includes 2 indicators, even if the values have not been defined in a particular field• Indicators supply additional information about the field and are defined individually for each field• Values are interpreted independently—meaning is not ascribed to the 2 indicators taken together• MARC 21 formats use numeric values for indicators• A blank is used in an undefined indicator position or means <i>information not provided</i> in the defined indicator position
Subfield Code	<ul style="list-style-type: none">• Identifies the individual data elements within the field• Precedes the data elements• Each data field contains at least one subfield code• The subfield code consists of a delimiter [1F₁₆, 8-bit] followed by a data element identifier• Data element identifiers defined in MARC 21 may be any ASCII lowercase alphabetic or numeric character