Updates that apply to IBM® DB2® Analytics Accelerator Loader for z/OS® V2R1 User's Guide (SC27-6777-00)

Date of change: June 2017
Topic: Multiple
Change description: Documentation changes made in support of PTF UI48172 APAR PI80293 – Delimited file format support

- Topic "What's new" in chapter "Overview"
- Topic "Restrictions and considerations for loading form an external file" in chapter "Loading data from an external file"
- Topic: "Example JCL: Loading from an external file" in chapter "Syntax"
- Topic "Syntax diagram: Load from an external file" in chapter "Syntax"
- Topic: "Syntax definitions: Load from an external file" in chapter "Syntax"
- Topic "Accelerator Loader messages" in chapter "Troubleshooting"
- Topic "Panel commands and fields reference" in chapter "Reference"

Topic: "What's new"
Add the following description:

When performing a load from an external file (DUAL or ACCELERATOR ONLY profile), Accelerator Loader now supports SYSREC data sets in DB2 LOAD delimited file format.
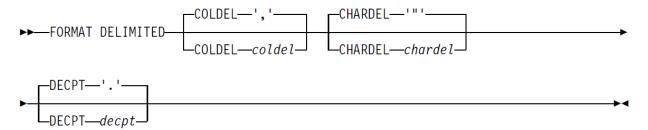---
Topic: "Restrictions and considerations for loading from an external file"
Add new section "Delimited file format".

Delimited file format

When performing a load from an external file, Accelerator Loader supports SYSREC data sets in DB2 LOAD delimited file format. When data is in delimited format, all fields in the input data set are character strings, or external numeric values. Each column in the delimited file is separated from the next column by a column delimiter character. CHAR and VARCHAR data can optionally be enclosed in a character string delimiter. This may be necessary if, for example, the character data value includes the column delimiter character. When data is in delimited format, POSITION statements in the LOAD utility field specifications are ignored by Accelerator Loader.

To use data in delimited format in your load, include the standard DB2 LOAD FORMAT DELIMITED option in the Accelerator Loader control cards, as shown in the following diagram:

```
                           ┌─COLDEL─','──────┐   ┌─CHARDEL─'""'─────┐
►►─FORMAT DELIMITED─────────┼─────────────────┼───┼─────────────────┼────────────►
                           └─COLDEL─coldel───┘   └─CHARDEL─chardel─┘


    ┌─DECPT─'.'────┐
►───┼──────────────┼──────────────────────────────────────────────────────────►◄
    └─DECPT─decpt──┘
```

The COLDEL, CHARDEL and DECPT delimiters can be specified as either a single-byte quoted character, or as a two-digit hexadecimal value. For example, to use a comma as the column delimiter, you could specify either "COLDEL ','" or "COLDEL X'6B'".

The following considerations apply when using Accelerator Loader delimited file support options:

- When data is in delimited format, Accelerator Loader ignores POSITION statements in the LOAD utility field specifications.
- When loading a Unicode-encoded SYSREC and using Accelerator Loader control cards in EBCDIC, specify the delimiters in hexadecimal. Accelerator Loader does not perform any character conversion on the delimiters specified in the control cards.
- When using the ISPF interface to load from an external file, if you specify UNICODE as the Encoding value and a character symbol for a delimiter on the Delimiter Parameters panel, then Accelerator Loader will generate the hexadecimal value of the symbol in the DB2 LOAD control card.
- The default values for the column and decimal point delimiters are dependent on the user locale settings. For example, when a European user creates a new DUAL or ACCELERATOR ONLY profile, the decimal point will be ',' (comma) and the column delimiter will be ';' (semicolon).
- To use the space character as a delimiter, specify the hexadecimal value.
- If an apostrophe (') is specified as a delimiter, it will be generated as four apostrophes ('''') in the LOAD card.

Accelerator Loader support for delimited file format has the following restrictions:
- Delimited file format support is available when loading data from an external file (DUAL or ACCELERATOR ONLY profile) only.
- GRAPHIC and VARGRAPHIC data types are not supported.
- Non-Unicode MIXED CHAR and VARCHAR data is not supported.

For a complete description of the DB2 LOAD FORMAT DELIMITED clause, see the *IBM DB2 Utility Guide and Reference*. For more information on the delimited file format, see the appendix "Delimited file format" in the *IBM DB2 Utility Guide and Reference*.

Topic: "Example JCL: Loading from an external file"
Add the following example:

Example: Load using input file in delimited file format
Accelerator Loader supports the standard DB2 LOAD FORMAT DELIMITED option in the control cards for Dual and Accelerator-only loads. The following example loads a Unicode data file that uses a comma (,) for the column delimiter, a double quotation mark (") for the character string delimiter, and a period (.) for the decimal point delimiter:

```
LOAD DATA
    IDAA_DUAL ON QB1AACC1
    ACCEL_ON_SUCCESS_ENABLE NO
    INDDN ISYSREC
    REPLACE
    KEEPDICTIONARY
    SORTDEVT SYSALLDA SORTNUM 4
    FORMAT DELIMITED
    COLDEL X'2C'
    CHARDEL X'22'
    DECPT X'2E'
    UNICODE
    DISCARDDN ISYSDISC
    ERRDDN ISYSERR
    MAPDDN ISYSMAP
    WORKDDN(ISYSUT1,ISORTOUT)
    INTO TABLE
        "USER1"."EMP"
```

Topic: "Syntax diagram: Load from an external file"
Replace the diagram with the following updated diagram:

```
>>──LOAD──┬─DATA─┬──┬─IDAA_DUAL ON───┬─<─,───────────┐──┬───────────────────────┐──────────────────────>
          └──────┘  │                └──accelerator_name──┘  └─RESUME──┬─NO──┐──┘
                     │                                                  └─YES─┘
                     └─IDAA_ONLY ON───┬─<─,───────────┐──┐
                                      └──accelerator_name──┘


>──┬─────────────────────────────────┐──┬──────────────────────────┐──────────────────────────────────>
   ├─ACCEL_REMOVE_AND_ADD_TABLES─┐    │  └─ACCEL_LOAD_TASKS──┬─1───────┐──┘
   └─ACCEL_ADD_TABLES────────────┘    │                     └─integer─┘


>──┬───────────────────────────────────────────┐──┬────────────────────────────────────────────────────┐──>
   │                        ┌─NO──┐             │  │                      ┌─BEST_ELAPSED_TIME─┐          │
   └─ACCEL_ON_SUCCESS_ENABLE──┴─YES─┘──┘            └─ACCEL_OPTIMIZE_FOR──┴─BEST_CPU_TIME──────┘


>──┬──────────────────────────────┐──┬───────────────────────┐───────────────────────────────────────────>
   └─KEEPDICTIONARY──┬─YES─┐──┘       └─ENFORCE──┬─NO──┐──┘
                     └─NO──┘                     └─YES─┘


>──┬─FORMAT──┬─INTERNAL─────────────────────────────────────────────────────────────────────────┐──┐──────>
   │         └─DELIMITED──┬─COLDEL──',' ──────┐──┬─CHARDEL──'"'──────┐──┬─DECPT──'.'──────┐──┘
   │                      └─COLDEL──coldel────┘  └─CHARDEL──chardel──┘  └─DECPT──decpt────┘


>──┬─EBCDIC──┐──┬──────────────────────────┐──┬─NOSUBS─┐──┬─ERRDDN──ISYSERR─────────────┐──────────────────>
   ├─ASCII───┤  └─CCSID──(──┬─<─,───┐──)─┘     └────────┘  └─ERRDDN──┬─ddname─────────┐──┘
   └─UNICODE─┘              └─integer─┘                              └─template_name──┘


>──┬─MAPDDN──ISYSMAP──────────────┐──┬─DISCARDDN──ISYSDISC──────────────┐──┬─────────────────────────────┐──>
   └─MAPDDN──┬─ddname─────────┐──┘     └─DISCARDDN──┬─ddname─────────┐──┘    └─SORTDEVT──device_type─┘
            └─template_name──┘                     └─template_name──┘


>──┬──────────────────────┐──┬─WORKDDN(ISYSUT1,ISORTOUT)─────┐──┬─────┐──INTO TABLE──table_name────────────>
   └─SORTNUM──integer──┘       └─WORKDDN(ddname1,ddname2)──┘       └─LOG─┘


>──┬──────────────────┐──┬─INDDN──ISYSREC─────────────┐──┬──────────────────────┐──────────────────────────><
   └─PART──integer──┘     └─INDDN──┬─ddname─────────┐──┘    └─NUMRECS──integer─┘
                                  └─template_name──┘
```

Topic: "Syntax definitions: Load from an external file"
Replace "FORMAT INTERNAL" with the following updated description:

FORMAT
>Identifies the format of the SYSREC input data.
>- **INTERNAL** specifies that the input data is in DB2 internal format.
>- **DELIMITED** specifies that the input data is in a delimited format. The following parameters specify the delimiters that are used in the input file and can be specified as either a single-byte quoted character or as a two-digit hexadecimal value:
>   - **COLDEL** *coldel* – Specifies the column delimiter. The default value is a comma (,).
>   - **CHARDEL** *chardel* - Specifies the character string delimiter. The default value is a double quotation mark (").
>   - **DECPT** *decpt* - Specifies the decimal point character. The default value is a period (.).
>
>These options can be specified in the ISPF interface by using the Load Accelerator(s) and DB2 from External File panel or Load Accelerator(s) from External File panel.

Topic: "Accelerator Loader messages"
Add the following messages:

HLO628E   Invalid Encoding value. Enter a valid value: UNICODE or EBCDIC.
Explanation: The specified value is not valid in the field.
User response: Enter a valid value in the field.

HLO629E   Encoding value does not match encoding scheme of selected table.
Explanation: The Encoding value must match the encoding scheme of the table that is selected for the load.
User response: Enter another Encoding scheme or choose another table.

HLO630E   Column info DSN value must be empty when Format is set to Internal value.
Explanation: The field "Column info DSN" and the value "Internal" for the field "Format" are mutually exclusive.
User response: Remove the value in "Column info DSN" or specify "Delimited" or blank value for "Format".

HLO660E   Invalid input file format value. Valid values are Internal, Delimited, and blank.
Explanation: The specified value is not valid.
User response: Enter a valid value.

HLO661I   Input file format options are available for Delimited Format value only.
Explanation: This is an informational message.
User response: No action is required.

HLO662E   Invalid delimiter character. The delimiter character can be specified as either a character or hexadecimal constant.
Explanation: The specified value is not valid. If you want to use a space character as a delimiter specify its hex-code.
User response: Enter a valid value.

HLO663E   The same character cannot be specified for more than one type of delimiter.
Explanation: The same character or hex-value was specified for more than one type of delimiter.
User response: Enter different characters for the type of delimiters.

HLOP9964E   Invalid value specified for keyword *<keyword>*
Explanation: An invalid delimiter value was specified on the FORMAT DELIMITED clause of the LOAD statement. The value specified for COLDEL, CHARDEL or DECPT must be a single-byte character or a two-

character hexadecimal value. For example: COLDEL ',' or COLDEL X'6B' are both valid delimiter values. If the SYSREC encoding scheme is Unicode, the highest acceptable value for any delimiter is x'7F'.
User response: Enter a valid value.

HLOP9967E   Invalid delimiter value specified for FORMAT DELIMITED
Explanation: An invalid delimiter value was specified on the FORMAT DELIMITED clause of the LOAD statement. The value specified for COLDEL, CHARDEL or DECPT must be unique. That is, the same value may not be specified for multiple delimiters.
User response: Enter a valid value.

HLOU4096E   Unsupported data type for FORMAT DELIMITED. Field=<*field_name*>, Type=<*data_type*>
Explanation: The FORMAT DELIMITED option does not currently support SYSREC data sets that contain GRAPHIC, VARGRAPHIC or non-Unicode MIXED data.
User response: No action is required.

Topic "Panel commands and fields reference"

For panels "**Load Accelerator(s) and DB2 from External File**" and "**Load Accelerator(s) from External File**", make the following changes:
- Rename section "Required load options:" to "Input file options:".
- Rename existing field **Input data set** to **Data set**.
- Add the following fields after **Data set**:
  Encoding
  > Specifies the SYSREC encoding scheme. Valid values are:
  > - UNICODE: When UNICODE is specified, the UNICODE DB2 LOAD utility keyword is generated into the LOAD control cards.
  > - EBCDIC: (default) When EBCDIC is specified, no additional keywords are added to the LOAD control cards. EBCDIC is the default for both Accelerator Loader and DB2 LOAD.

  Format
  > Indicates whether the SYSREC data is in DB2 internal, delimited format, or governed by the rules for field specifications. Valid values are:
  > - INTERNAL: The FORMAT INTERNAL keyword is included in the LOAD utility control cards.
  > - DELIMITED: The FORMAT DELIMITED keyword is included in the LOAD utility control cards. To update the delimiter parameters, specify Yes in the Update field.
  > - Blank (default): The format is governed by the rules for field specifications.

Add the following new panel:

"Delimiter Parameters"

Use this panel to specify the delimiter parameters for the input data file that is in a delimited format. The delimiter characters can be specified as either a character or a hexadecimal constant. You cannot specify the same character for more than one type of delimiter.

This panel includes the following fields:

Column delimiter
> Specifies the column delimiter that is used in the input file. The default value is a comma (,).

Character string delimiter
> Specifies the character string delimiter that is used in the input file. The default value is a double quotation mark (").

Decimal point delimiter
> Specifies the decimal point character that is used in the input file. The default value is a period (.).