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 UI47548 APAR PI79055 – Support for loading SYSREC records in EBCDIC into UNICODE system

- Topic "What's new" in chapter "Overview"
- Topic "Restrictions and considerations for loading from an external file" in chapter "Loading data from an external file"
- 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: "What's new"
Add the following description:

When performing a load from an external file, Accelerator Loader can now convert string data from one character set to another when data is loaded from a SYSREC data set to the accelerator, DB2, or both. For example, you can now load data from an EBCDIC-encoded SYSREC data set to a Unicode DB2 table and the accelerator.

Topic: "Restrictions and considerations for loading from an external file" in chapter "Loading data from an external file"
Under section "General restrictions and limitations":

- Remove the following item from the list of restrictions and limitations:
  - Coded character set identifier (CCSID) conversions are not supported.

- Remove the following items from the list of syntax that cannot be processed:
  - ASCII (DB2 restriction)
  - CCSID (DB2 restriction)
  - EBCDIC (DB2 restriction)
  - NOSUBS (DB2 restriction)

Add new section "Character conversion with SYSREC data sets":

When performing a load from an external file, Accelerator Loader can convert string data from one character set to another when data is loaded from a SYSREC data set to the accelerator, DB2, or both. For example, you can load data from an EBCDIC-encoded SYSREC data set to a Unicode DB2 table and the accelerator.
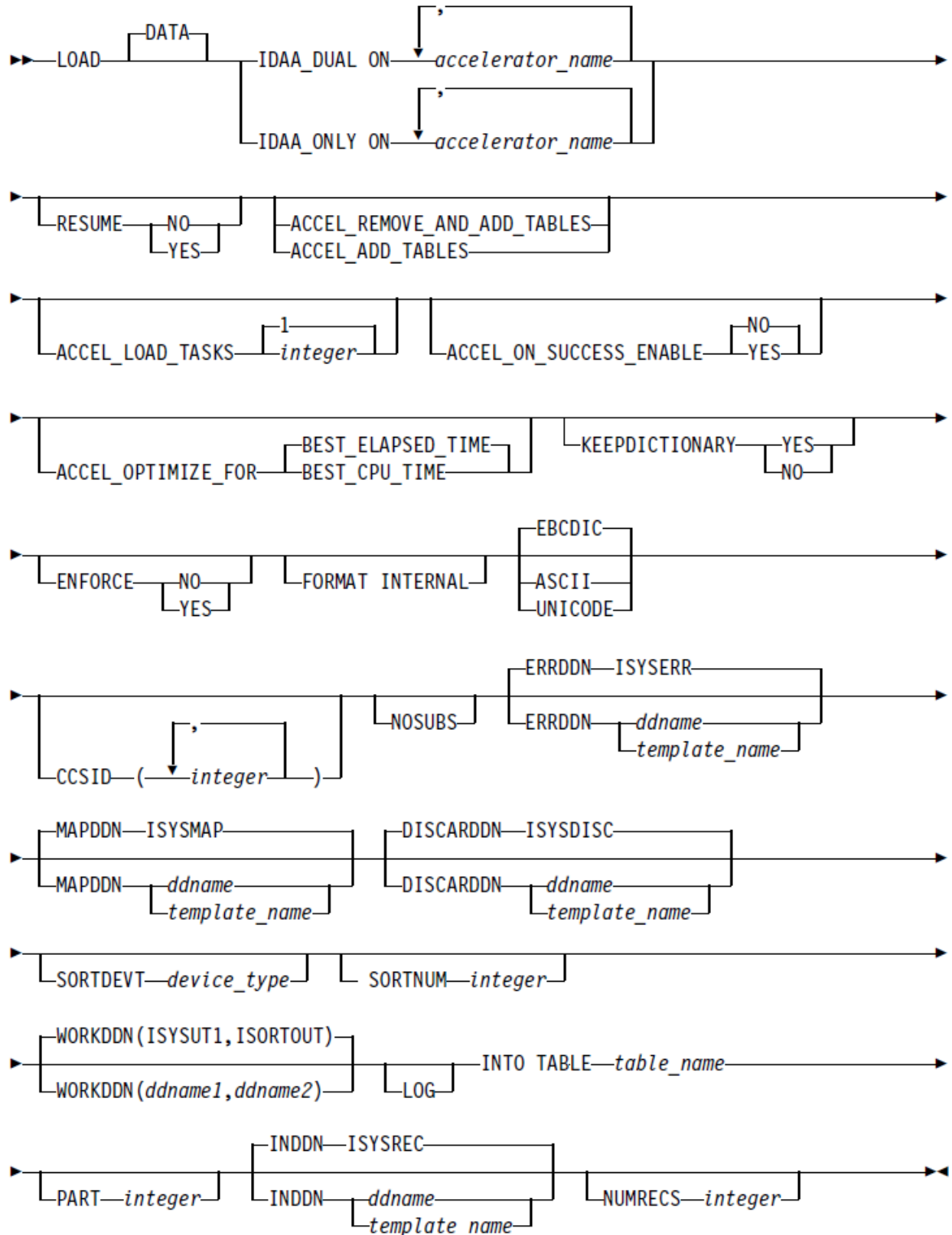
Accelerator Loader character set conversion is controlled through the standard DB2 LOAD utility control cards EBCDIC, UNICODE, ASCII, CCSID and NOSUBS. The function of these keywords is the same as for the DB2 LOAD utility. For details on these keywords, see the *DB2 Utility Guide and Reference*.

The following restrictions and considerations apply:
- The EBCDIC, UNICODE, ASCII, CCSID and NOSUBS keywords are ignored when loading from an Accelerator Loader server data source. Character set conversion applies to data loaded from a SYSREC file only.
- Accelerator Loader uses the system Unicode Character Conversion service to convert from one CCSID to another. DB2 uses its own internal conversion algorithms for some conversions. In some cases, the result generated by the system Unicode Character Conversion service may differ slightly from the result generated by the DB2 internal conversion algorithms.
- The process of converting data from one character set to another increases elapsed time. If Accelerator Loader determines that Unicode Conversion Services are required, it issues message HLOU4094I.

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

```
>>-LOAD---+-DATA-+---+-IDAA_DUAL ON----+-,-+-accelerator_name--+-------------------->
          +------+   |                                          |
                     +-IDAA_ONLY ON----+-,-+-accelerator_name--+

>--+-------------------+-+--------------------------------+------------------------->
   +-RESUME--+-NO--+----+ +-ACCEL_REMOVE_AND_ADD_TABLES--+
             +-YES-+      +-ACCEL_ADD_TABLES-------------+

>--+--------------------------------------+-+------------------------------+-------->
   |                     1                | |                         +-NO--+
   +-ACCEL_LOAD_TASKS--+-------+----------+ +-ACCEL_ON_SUCCESS_ENABLE--+-YES-+
                       +-integer-+

>--+------------------------------------------------+-+----------------------------+->
   |                     +-BEST_ELAPSED_TIME-+       | +-KEEPDICTIONARY--+-YES-+
   +-ACCEL_OPTIMIZE_FOR--+-BEST_CPU_TIME-----+       +                  +-NO--+

>--+------------------+-+---------------------------+-------------------------------->
   |                  | |                +-EBCDIC-+
   +-ENFORCE--+-NO--+-+ +-FORMAT INTERNAL-+-ASCII--+
              +-YES-+                     +-UNICODE-+

>--+--------------------------+-+---------+-+-ERRDDN--ISYSERR------------------+----->
   |          +-,-+          | +-NOSUBS--+ +-ERRDDN--+-ddname--------+
   +-CCSID--(--+-integer-+--)-+                      +-template_name-+

>--+-MAPDDN--ISYSMAP------------------+-+-DISCARDDN--ISYSDISC-----------------+------>
   +-MAPDDN--+-ddname--------+--------+ +-DISCARDDN--+-ddname--------+--------+
             +-template_name-+                       +-template_name-+

>--+-------------------------+-+----------------------+----------------------------->
   +-SORTDEVT--device_type---+ +-SORTNUM--integer-----+

>--+-WORKDDN(ISYSUT1,ISORTOUT)------+-+------+--INTO TABLE--table_name----------------->
   +-WORKDDN(ddname1,ddname2)-------+ +-LOG--+

>--+----------------+-+-INDDN--ISYSREC-----------------+-+-NUMRECS--integer-+--><
   +-PART--integer--+ +-INDDN--+-ddname--------+-------+
                              +-template_name-+
```

Topic: "Syntax definitions: Load from an external file"
Add or update the following syntax elements and descriptions:

ASCII
>Specifies that the format of the SYSREC data set is ASCII.

CCSID (*integer,integer,integer)*
>Specifies up to three coded character set identifiers (CCSIDs) for the input file. The first value specifies the CCSID for single-byte character set (SBCS) SYSREC data, the second value specifies the CCSID for mixed SYSREC data, and the third value specifies the CCSID for double-byte character set (DBCS) data. If any of the three CCSIDs are omitted or specified as 0, the CCSID of the corresponding data type is assumed to be the same as the installation default. For example, if EBCDIC was specified, the omitted CCSIDs are assumed to be the EBCDIC installation default CCSIDs.

EBCDIC
>(default) Specifies that the format of the SYSREC data set is EBCDIC.

NOSUBS
>Controls whether Accelerator Loader accepts substitution characters. When converting from one character set to another, it is possible that a character in the source CCSID has no representation in the target CCSID. When this happens, a substitution character is placed in the converted string. When NOSUBS is specified, conversions that require the substitution character cause the SYREC record to be discarded.

UNICODE
>Specifies that the format of the SYSREC data set is UNICODE.

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

HLOS0104E **TCB: *<tcb_address>* Session: *<session_token>* Unicode Conversion Error. RC: *<return_code>* RSN: *<reason_code>***

Explanation: An attempt by the Accelerator Loader started task to convert a default column value from UTF-8 to the table CCSID has failed. The system Unicode Character Conversion service is used for these conversions. A call to the conversion service failed with the indicated return and reason codes. This conversion was attempted on behalf of a batch load client. Refer to the failed batch job for additional information. This message is followed by messages HLOS0105E – HLOS0107 to identify the failing column, table name, and table creator respectively.
User response: Refer to the failed batch job for additional information.

HLOU4088E **The Unicode Services Information Service failed. RC=*<return_code>* RSN=*<reason_code>***
Explanation: An attempt to call the Unicode Services Information Service has failed.
User response: No action is required.

HLOU4089E **Unsupported CCSID. Column: *<column_name>* CCSID: *<ccsid>***
Explanation: z/OS Unicode Services do not support the named CCSID. As a result, the product will not be able to convert data from or to this CCSID. Support for this CCSID is required for the product to load data to the named column. This CCSID was most likely specified as the coded character set identifier for the input data for the named column.
User response: No action is required.

HLOU4090E **Conversion from CCSID: *<source_ccsid>* to CCSID: *<target_ccsid>* is not supported. Column: *<column_name>***
Explanation: The z/OS Unicode Services conversion service does not support converting data between the two named CCSIDs. As a result, the product is unable to load data to the named column. CCSID conversion is required anytime string input data is encoded in a different CCSID than a target table column.
User response: No action is required.

HLOU4091W   Field *<field_name>* not convertible to column CCSID. Record=*<record_number>*
Explanation: Input data for the specified column is encoded in a CCSSID that differs from the column CCSID. In the process of converting the data to the target CCSID, a character was found which has no representation in the target CCSID. NOSUBS was specified in the control cards, so this record will be discarded.
User response: No action is required.

HLOU4092W   Field *<field_name>* contains an invalid character. Record=*<record_number>*
Explanation: Input data for the specified column is encoded in a CCSSID that differs from the column CCSID. In the process of converting the data to the target CCSID, an invalid character was encountered. NOSUBS was specified in the control cards, so this record will be discarded.
User response: No action is required.

HLOU4093E   Unicode character conversion service failed. RC=*<return_code>* RSN=*<reason_code>*
Explanation: An attempt to convert input data to the target table CCSID has failed. The system Unicode Character Conversion service is used for these conversions. A call to the conversion service failed with the indicated return and reason codes.
User response: No action is required.

HLOU4094I   Unicode Character Conversion services will be used for this load
Explanation: The CCSID of input character data differs from the CCSID of the target table. The system Unicode Character Conversion service will be used to convert input data to the target table CCSID. This may lengthen the elapsed time of the load.
User response: No action is required.