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Abstract

ISIS2ABCD is an MS-DOS command script that creates automatically, from an existing CDS/ISIS database, a new database compliant with ABCD. It also imports records from the existing database into the newly created database and finally creates and updates the inverted file. This paper introduces ISIS2ABCD, describes its parameters and illustrates the use of the script.

Keywords

CDS/ISIS databases, ABCD databases, MS-DOS scripts, library management software

Introduction

CDS/ISIS¹ is a text management software application developed by UNESCO since the 1970s; it is mainly used for library and information management. Several other applications have been developed for specific purposes on the basis of the same technology (de Smet 2009). ABCD² is an open and free software suite for library management based on CDS/ISIS technology that has been developed since 2007 by the Centro Latino Americano e do Caribe de Informação em Ciências da Saúde (BIREME, Sao Paulo, Brazil)³, with the financial support of the Vlaamse Interuniversitaire Raad (VLIR, Belgium)⁴. It is a modernization of the original CDS/ISIS, so there is a requirement for users to transfer data from CDS/ISIS to ABCD.

Importing data directly from a CDS/ISIS database to a database in ABCD becomes problematic when a large number of records is involved⁵. That is mainly due to the work environment of ABCD, among which is PHP, that sets the maximum duration for the execution of requests: when a request is issued and its execution lasts more than the authorised duration in the PHP configuration file, a *time out* message is sent to the user, the process stops and the request fails. Moreover, CDS/ISIS stores data in ASCII format whereas ABCD uses ANSI; hence accented letters produced by CDS/ISIS are neither correctly read nor displayed

in case of direct transfer into ABCD; a conversion is then needed (cf. Ascencio 2008a).

As ABCD is based, among other information technologies, on WXIS⁶, which is based on CISIS⁷ utilities, one can overcome the aforementioned problems by calling these utilities directly (cf. Ascencio, 2008c). But the call is made from a command line (BIREME/PAHO/WHO 2007: 9), that is not within the abilities of all ISIS family software users, who are mainly librarians and information managers. ISIS2 ABCD script is written to make creating a database for ABCD from an existing CDS/ISIS database automatic, to ensure data import to the newly created database and to create and update the inverted file.

ISIS2ABCD overview

ISIS2ABCD is a script written in MS-DOS batch language that uses CISIS utilities. Its execution starts when double-clicking on its icon or invoking it directly from the prompt. However, the latter option is recommended; to perform it on Windows

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```

DOS utility for CDS/ISIS databases conversion to ABCD
=====
This programme assumes that ABCD is installed on drive c:\ of your computer,
with the default structure. In order it works well, you have to provide
successively the parameters below:
- the input database name,
- the path to the input database files
  (ex. c:\winisis\data\ or c:\winisis\data\cds\);
- the name of the output database;
- the description of the output database;
- languages for which the output database files will be created
  *****
Any problems : Eustache Megribeto (eustachem@gmail.com)
  *****
=====

```

Figure 1. ISIS2ABCD first screen: information screen

XP operating system for example, the user should go to *Start A Run* and type *cmd*, and then press *ENTER*; he should then make current the directory that contains the script file *ISIS2ABCD.bat*, type *isis2abcd* to the prompt, and press *ENTER*. Many parameters are needed for the successful running of the script.

Parameters of the script

ISIS2ABCD uses as parameters the input database name, the path to the input database, the output database, the description of the output database and the language(s) for which the output database files should be created. All these parameters are mandatory.

1. *Input database*: This is the source database; it means the CDS/ISIS (MS-DOS or Windows version) database to be converted to ABCD. The user provides only the name of the database, a maximum of six (6) characters according to the CDS/ISIS database naming rules.
2. *Path to the input database*: In CDS/ISIS, databases are normally stored in the directory defined by parameter 5 in the system parameters file *syspar.par*; the default is *isis\data* or *Winisis\data*. However, it is also possible to locate database files according to user preferences throughout the database parameters file *dbn.par* (where *dbn* represents the database name); this means that the user may create a dedicated directory to store all the files relative to one database, or put them straight on a distinct or even remote drive. The value of the parameter *Path to the input database file* is the physical location of the database

files, namely the master file (*.mst*) and the cross-reference file (*.xrf*)⁸. It is the set *driver:\directory\sub_directory\...*

3. *Output database name*: This is the name of the database to be created for ABCD. It is no longer compelled to be limited to up to six characters. However, it has to be in accordance with the naming rules of the operating system. For example, the Windows operating system forbids the use of nine specific characters in a file or directory name: *?, *, /, \, |, :, <, >, "* furthermore, as ISIS2 ABCD is a MS-DOS script, it can't handle a file or directory the name of which contains a space. Therefore none of these characters should appear in the output database name.
4. *Description of the output database*: This is a short text that describes the object or content of the database. It appears in the list of available databases instead of names. This parameter is mandatory in the process of database creation. In the current version of ISIS2ABCD, spaces are not allowed in the description; therefore, it is recommended to use the character *_ (underscore)* instead, and edit later the files *ABCD\www\bases\bases.dat* and *formatos.dat* in the sub-directory *lang* of the sub-directory *pfis* of the database, once the output database is successfully created – *lang* being the two character ISO code of the language for which the database was created.
5. *Language(s)*: this parameter allows the choice of the language(s) version(s) of the output database files. Indeed, in ABCD, the Field Definition Table (FDT) and the formats may have linguistic versions. Eight languages codes are proposed respectively for English, French, Spanish, Portuguese, Russian, Italian, German and Arabic.

All these five parameters are mandatory. When one is missed, the programme ends without creating any database file. Obviously, the user is not obliged to create all the eight language version files for a given database, as only one language version is required; the others are then optional. The programme starts working really when the user provides at least the second language code and presses ENTER, or after the eighth language code is provided.

Output files

When ISIS2ABCD is called, and once the different parameters are provided and their values checked, the input database structure is investigated; the results are then processed in order to collect field tags. Based on these pieces of information, the file `\ABCD\www\bases\bases.dat` is modified; the formats list file (`formats.dat`) is created in each language version directory; the database parameters file `dbn.par` is also created in `\ABCD\www\bases\par` directory. Then, the Field Definition Table (FDT), the default format and the Field Selection Table (FST) are created in corresponding subdirectories. In fact, these definition files are just sketched out; it is the user's responsibility to edit and customize them later, with appropriate ABCD functions and menus. Indeed:

1. The default format displays the content of all fields, each field beginning on a new line; in other words, the built file contains a succession of `vn/`, where *n* designates a field tag.
2. In the FST, there are as many lines as there are fields in the input database; on each line, the identifier is the tag of the indexed field; the default indexing technique is 0, and the applied extraction format considers the repeatable group.
3. In ABCD, the FDT is a text file with 17 columns, separated by the character “|” (pipe, with no space around), so that each line defines a field and determines its characteristics. The first column defines the field type, the second the field tag, the third the field name, etc., and the eighth the data entry input type. The default field type value is *Field*, and the default data entry input type's is *Text/Textarea*. It means that when nothing is specified, the field type value is supposed to be *Field* and its data entry input type is supposed to be *Text/Textarea*. These pieces of information are encoded in ABCD: the field type

value *Field* is encoded *F*, and the data entry input type value *Text/Textarea* is encoded *X*.

The presence of subfields is not considered in ISIS2ABCD output; in fact, no CISIS utilities allow accessing subfields' identifiers; moreover, CISIS utilities don't enable to have access to field name in a database. Besides, these pieces of information are not really mandatory to handle a database. Thus, the lone information these tools need to handle correctly a field is its tag; indeed, the field tag is for the machine what the field name is for a human being. Therefore, the FDT file ISIS2ABCD builds contains neither field names nor subfields identifiers. Once the script is run successfully, it is the user's responsibility to edit the FDT file with ABCD functions. It should be mentioned that for each field, only the first and second columns are provided; their contents are respectively the coded value *F* and the field tag as extracted from the input database.

ABCD doesn't accept a tag whose value is higher than 999 whereas CDS/ISIS does⁹. No disposition is taken by ISIS2ABCD to compliant such input tags with this rule; they are output as if; once again, it is the user's responsibility to take care while editing the output FDT with the ABCD appropriate menu; else, the FDT updating process will always send errors messages.

ISIS2ABCD also creates the master file (`.mst`) and the cross-reference file (`.xrf`); it imports all the records from the input database into the output database, converts characters from ASCII to ANSI, and then uses the default FST file to generate the database inverted file (`.cnt`, `.ipf`, `.l01`, `.l02`, `.n01`, `.n02`).

Illustration

Let us consider the sample database *CDS* distributed with all versions of CDS/ISIS. Its files are stored directly in the default database directory, `ISIS\DATA` or `WINISIS\DATA`. Therefore, while running ISIS2ABCD with *CDS* database as input database, the valid parameters to be provided to the script are shown in Figure 2¹⁰. Then, the user should choose the linguistic version(s) of the FDT files to be created; in Figure 3, the user has chosen French and English. The fields present in the *CDS* database, as investigated by the script using CISIS utilities, are 12 – 24 – 25 – 26 – 30 – 44 – 50 – 69 – 70 – 71 – 72 – 74 – 76. Therefore, the different definition files of the output ABCD database, as produced at the end of execution of

- Input database name : cds
- Path to the input database : c:\winisis\data
- Name of output database : cds_abcd
- Description of the output database (no space but underscore) : Sample_database_for_Isis

Figure 2. ISIS2ABCD parameters screen

Language(s) choice :

English (en)
 French (fr)
 Spanish (es)
 Portuguese (pt)
 Arabic (ar)
 German (de)
 Russian (ru)
 Italian (it)

- Language 1 : fr
- Language 2 : en
- Language 3

Figure 3. ISIS2ABCD languages choice screen

F|12|
 F|24|
 F|25|
 F|26|
 F|30|
 F|44|
 F|50|
 F|69|
 F|70|
 F|71|
 F|72|
 F|74|
 F|76|

Figure 4. FDT created by ISIS2ABCD with CDS as input database

12 0 (v12/)
 24 0 (v24/)
 25 0 (v25/)
 26 0 (v26/)
 30 0 (v30/)
 44 0 (v44/)
 50 0 (v50/)
 69 0 (v69/)
 70 0 (v70/)
 71 0 (v71/)
 72 0 (v72/)
 74 0 (v74/)
 76 0 (v76/)

Figure 5. FST created by ISIS2ABCD with CDS as input database

v12/v24/v25/v26/v30/v44/v50/v69/v70/v71/v72/v74/v76/

Figure 6. Format created by ISIS2ABCD with CDS as input database

marc|Formato Marc
 biblo|Formato Cepal
 dblil|DBLIL
 acces|Operadores del sistema
 cds_abcd|Sample_database_for_Isis

Figure 7. Content of the file *bases.dat* after ISIS2ABCD execution

ISIS2ABCD are shown in Figures 4, 5 and 6. Once the output database master file is created, e.g *cds_abcd.mst* and *cds_abcd.xrf*, data are automatically exported from the input database to the output one, with characters converted from ASCII to ANSI. The inverted file represented by *cds_abcd.l01*, *cds_abcd.l02*, *cds_abcd.n01*, *cds_abcd.n02*, *cds_abcd.ifp*, and *cds_abcd.cnt* are then generated according to the *cds_abcd.fst* file in Figure 5.

Assume that the CDS database files were stored in z:\databases\cds\ directory or f:\isis\data\cds\; then, the path to the input database should have been set to one of these values.

ISIS2ABCD appends to the file *bases.dat* a line which can be split into two parts: the first one is the database name (*cds_abcd* in our case) and the second one the database description (*Sample_database_for_Isis*). The two parts are separated by a pipe (|). With a text editor, the *bases.dat* file may be edited and underscore characters (_) replaced.

Conclusion

ISIS2ABCD is a batch programme written in DOS shell language which uses CISIS utilities to create automatically database for ABCD from an existing

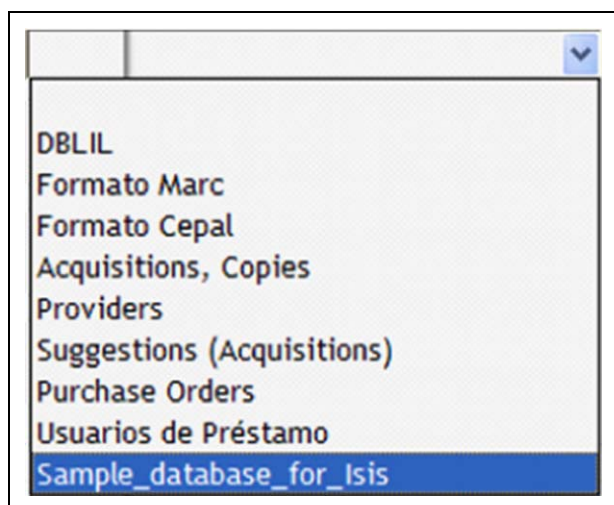


Figure 8. Databases list in ABCD. The sample CDS database created with the script ISIS2ABCD is selected

Winisis database. It outputs different files which are mandatory for database handling under ABCD; however, it is the user's responsibility to edit some of these files in order to custom them by using appropriate features under ABCD or tools from the operating system.

The script ISIS2ABCD is available at <http://eusta.chem.freehostia.com/isis2abcd>

Notes

1. Computerized Documentation System / Integrated Set of Information Services. URL: <http://www.unesco.org/isis>.
2. From Spanish Automatización de Bibliotecas y Centros de Documentación (Automation of libraries and documentation centres, ABCD). URL: <http://bvsmodelo.bvsalud.org/php/level.php?lang=pt&component=27&item=13>.
3. Latin American and Caribbean Center on Health Sciences Information. URL: <http://new.paho.org/bireme/>
4. Consortium of Flemish Universities. URL: <http://www.vlir.be/>.
5. Ascencio (2008b), on his part, thinks that the problem occurs with an ISO file estimated at about 500 records.
6. World Wide Web XML Isis Script is a web server for ISIS technology databases developed by BIREME (URL: <http://bvsmodelo.bvsalud.org/php/level.php?lang=pt&component=28&item=2>).
7. The CISIS Interface is a library of functions, written in the C programming language, designed to allow the development of CDS/ISIS database applications (without calling the CDS/ISIS software). CISIS applications are fully compatible with CDS/ISIS, including multi-user applications (BIREME, 2007).
8. With the database parameters file, .xrf and .mst files may be stored into different directories (cf. UNESCO, 1989, p. 20). That features were implemented earlier in CDS/ISIS when disk space was rare and too expensive. Today, it is usual to have all files relative to one database stored into only one directory. ISIS2ABCD assumes that .xrf and .mst files are stored in the same directory, which is the path to the input database. The script doesn't read at all any other database file.
9. That is probably because ISO 2709 and MARC standards use field tags with 3 characters codes. WXIS uses fields with tag greater than 999 for specific purposes.
10. The screenshot assumes that Winisis is installed on drive C:.

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About the author

Eustache Mègnigbèto is an information scientist from Benin. He holds a Master in Information Science and specializes in library automation. He is one of the experts of UNESCO CDS/ISIS bibliographic software and represented Africa to the third World Congress of ISIS Users held in Rio de Janeiro, Brazil, in 2008. He has been embedded in the team of information professionals to implement MARC 21 format under ABCD and has worked for the implementation of UNIMARC format database under the same software. He has published about 30 articles, reports, and communications to international scientific events. Contact: Bureau d'Etude et de Recherche en Science de l'Information (BERSI), 09 BP 477 Saint Michel, Cotonou, Republic of Benin. Tel. (+229) 21147935. Email: eustachem@gmail.com