

+1Copybook Command Line Options for DB2

May 2020

Project Directory

Most users will create a new directory as their project directory. +1Copybook configuration files, like `database_id.txt`, and “touch” files are found in the project directory.

For small projects, a `copybook.txt` file can be found in the project directory. The `copybook.txt` file can contain one or more COBOL copybooks. At the top of each COBOL copybook, you need to add a line like `ABC TABLE` (or `TABLE ABC`) where `ABC` is the table name to be created in the DB2 database.

For larger projects, the `COPYBOOKS` directory contains one or more COBOL copybook files. Each file has one COBOL copybook defined. Each copybook needs to start with `table_name TABLE` or `TABLE table_name` to match the DB2 table you want to create based on the copybook.

COPYBOOKS	The COPYBOOKS directory contains one or more COBOL copybooks. Each copybook has <code>table_name TABLE</code> as its first line.
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When +1Copybook is run, the following subdirectories are created or overwritten by +1Copybook:

CREATE_TABLES	Contains generated CREATE TABLE scripts.
EXCEL	Contains EXCEL loadable files if the <code>-x</code> option is used.
LOAD_FILES	Contains the Method L DB2 load files to insert data into tables.
html	Open file <code>index.html</code> in the <code>html</code> directory to display the generated HTML output for conversions. HTML includes tables, sorted tables, copybook mapping, control files, create table, sorted create table, and row sizing for each copybook.

The HTML output is very useful and can be viewed by opening the `html/index.html` file using IE or Chrome. To view a file in Chrome, press Control-O and then select the `index.html` file.

The generated `control_files.txt` and `create_tables.txt` files can be ignored and are used by +1Copybook to generate the HTML output.

Help Output

% cb -h

```
*****
* This is a production copy of +1Copybook and +1DataElements for:      *
*                                                                           *
*      John Dee at +1 running cygwin                                       *
*                                                                           *
* Default database is DB2 and expiration date is 31-DEC-2020.           *
*                                                                           *
* +1Copybook and +1DataElement are subject to the terms and conditions   *
* in the +1 Software License Agreement at http://pluslse.com/license.html. *
* Copyright (C) 2005-2020 +1 Software Engineering LLC, All Rights Reserved *
*****
```

To run +1Copybook for DB2, type:

```
cb -[bfFhHillLMnPstVwxy]
```

where

```
-b      Generate output in both upper and lower case.
-f fn   Specify a file name (fn) that contains a copybook.txt file.
-F      Do not include FILLER columns in CREATE TABLE and CONTROL FILE.
-h      Display this help message on usage.
-H      Display help message on +1Copybook configuration files.
-i      Do not add counter 999 to FILLER column names.
-l      Generate output in lower case.
-L      Display copybook.txt lines as they are processed.
-M      Display MAC addresses for your system.
-n      Add NOT NULL constraint to each column in the CREATE TABLE script.
-P dir  Change path before running +1Copybook. Used in cronjobs.
-s      Save one dated version of HTML output in index.html file.
-T fn   Convert COBOL copybook files listed in file fn.
-v      Display +1Copybook version and expiration date.
-w      Do not print copyright notice.
-x      Generate Excel output.
-y      If copybook column contains DATE, DTE, or DT anywhere in its
        name, define column as a DATE data type.
```

Leaving +1Copybook. Have a nice day.

```
*****
Copyright (C) 2005-2020 +1 Software Engineering LLC
All Rights Reserved
```

% cb -H

DB2 configuration files and format used by +1Copybook:

```
copybook.txt      - Contains one or more COBOL copybooks with table_name TABLE.
database_id.txt   - [Database Name]
dos_paths.txt     - [Path To Project Directory]
```

Leaving +1Copybook. Have a nice day.

```
*****
Copyright (C) 2005-2020 +1 Software Engineering LLC
All Rights Reserved
```

Commonly Used Options

- b | -l** **Generate column names in both upper and lower case (-b) or lower case only (-l).**
Default: Column names are in upper case.
- f name** **Specify a copybook name to convert.**
Converts named COBOL copybook.
- n** **Add NOT NULL constraint to each column in the CREATE TABLE script.**
- y** **If copybook column contains DATE, DTE, or DT anywhere in its name, define column as a DATE data type.**

Examples

% cb

-- Converts all copybooks found in copybook.txt file. If copybook.txt file not found in project directory, converts all copybooks found in the COPYBOOKS directory.

% cb -f FF123A

-- Converts copybook FF123A.

% cb -b -n -y

-- Converts CREATE TABLE and control file in upper and lower case, assigns copybook columns with DATE, DTE, or DT in column name to a DATE data type, and appends NOT NULL to every column.

All Options Defined

- b** **Generate column names in both upper and lower case.**
Default: Column names are in upper case.
- f file** **Specify a file name (file) that contains a copybook.txt file.**
Default: The copybook.txt file name is used to store the copybook.
- F** **Do not add counter 999 to FILLER column names.**
- h** **Display +1Copybook options with brief description.**
Default: Help message is not displayed.
- H** **Display names and basic format for configuration files.**
- i** **Do not include FILLER's in CREATE TABLE or CONTROL FILE.**
Default: FILLER's are included and are numbered incrementally.
- l** **Generate column names in lower case.**
Default: Column names are in upper case.
- L** **Display copybook.txt lines as they are processed.**
Default: Copybook.txt lines are not displayed as they are processed.
- M** **Display MAC addresses defined on system running +1Copybook.**
Default: MAC addresses are not displayed.
- n** **Add NOT NULL constraint to each column in the CREATE TABLE script.**
Default: NOT NULL constraint is not added in CREATE TABLE script.
- P dir** **Change to specified directory path before running +1Copybook.**
Default: +1Copybook runs in the directory it is started in.
Useful when running +1Copybook in a cron job.
- s** **Save one dated version of HTML output in index.html file.**
This option will save the current HTML output. Run -s again and the current version will replace the saved version.
- T fn** **Convert copybooks listed in filename fn.**
A "list" is one or more filenames containing copybooks. Using two or more lists, you can convert multiple copybooks and data in parallel on multiple CPU systems.
Default: Copybooks are converted serially based on their order in the copybook.txt file.
- v** **Display +1Copybook version and expiration date.**
Default: Version and expiration dates are not displayed.
- w** **Do not print warning messages or copyright notice on startup.**
Default: Warnings and copyright notice is displayed.

- x Generate Excel loadable copybook mapping output.**
Default: Excel output is not created.
Excel files are found in the EXCEL subdirectory.
- y If copybook column contains DATE, DTE, or DT anywhere in its name,
define column as a DATE data type.**
- H Display basic format of configuration files.**
Default: Format for configuration files are not displayed.
- ?**
- h Display +1Copybook options with brief description.**
Default: Option descriptions are not displayed.

Additional options are supported. Contact +1 Software Engineering if desired option isn't found above.

Touch Files

A touch file is the same as specifying the option on the command line when running +1Copybook. By using touch files, you simply don't have to specify the option each time you run +1Copybook.

To create a touch file, run **touch LOWERCASE**. To remove, run **rm LOWERCASE**. To group touch files together when using the ls command, touch files can begin with a '_' characters, such as **_NOFILLER**.

LOWERCASE or _LOWERCASE	Convert column names to lower case (-l).
MIXEDCASE or _MIXEDCASE	Covert column names to be mixed case (-m).
NOFILLER or _NOFILLER	FILLER's will not be included in CREATE TABLE script (-i).
UPPERCASE or _UPPERCASE	Covert column names to be upper case.

Configuration Files

A configuration file allows you to customize the generated output.

copybook.txt	Contains one or more COBOL copybooks. At the top of each COBOL copybook, add <table_name> TABLE .
database_id.txt	[Database Name] Sets the database name. Default name is PLUSONE.
dos_paths.txt	DOS path to project directory.

Quick Tutorial

To run +1Copybook on your Windows-based system, you first need to install cygwin Unix. The cygwin download link is: <https://cygwin.com/install.html>

After installing cygwin and +1's cb and de programs onto your Windows system, you can then convert one or more COBOL copybooks into DB2 CREATE TABLE scripts.

To Convert and Load One COBOL Copybook

% **mkdir my_directory**

% **cd my_directory**

% **cp /path/to/your/copybook.txt copybook.txt** ←copybook.txt file has a copy of your copybook.

% **Edit copybook.txt file.** ← Add **table_name TABLE** before the start of each copybook. You can use vi, notepad, or workpad to add table_name TABLE line.

% **cb** ← Run +1Copybook using default settings.

% **ls** ← Should see CREATE_TABLES and html directories.

View html/index.html ← In Chrome, type Control-O to view index.html.

Create Table Scripts ← Copy/paste CREATE TABLE script or change to CREATE_TABLES directory.

To Convert and Load Multiple COBOL Copybooks

% **mkdir my_directory**

% **cd my_directory**

% **mkdir COPYBOOKS**

% **mkdir DATA**

% **cp /path/to/copybooks/FF*.txt COPYBOOKS** ← Copy all copybooks into COPYBOOKS directory.

% **cp /path/to/data/FF*.txt DATA** ← Copy all data files for above copybooks into DATA directory.

- % cd COPYBOOKS** ← Change to COPYBOOKS directory.
- % Edit each copybook file** ← Add **table_name TABLE** before the start of each copybook. You can use vi, notepad, or wordpad to add table_name TABLE line.
- % cd ..** ← Change to project directory.
- database_id.txt** ← Edit database_id.txt to contain database name.
- % cb** ← Run +1Copybook using default settings.
- % ls** ← Should see CREATE_TABLES and html directories.
- View html/index.html** ← In Chrome, type Control-O to view index.html. Highly recommended.
- Create Table Scripts** ← Copy/paste CREATE TABLE scripts or change to CREATE_TABLES directory.

Have questions?

Feel free to call +1 Software Engineering. Your point of contact is:

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