

CAST and zOS

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Introduction

The CAST DB2 Analyzer does not support direct connections to a **DB2 z/OS server** and is instead delivered with a utility that provides the means to extract information related to database structure, types and routines from the DB2 system catalog and then save the results into flat files. These files will then form the input for the CAST DB2 Analyzer.

The extractor is delivered as a **JCL file** containing a sequence of JCL code. There are various different versions of the extractor, each dedicated to a specific version of DB2:

- CAST_JCL_EXTRACT_FOR_DB2_V7-<version>.jcl (for DB2 z/OS v7)
- CAST_JCL_EXTRACT_FOR_DB2_V8_V9-<version>.jcl (for DB2 z/OS v8 and v9)
- CAST_JCL_EXTRACT_FOR_DB2_V10-<version>.jcl (for DB2 z/OS v10)
- CAST_JCL_EXTRACT_FOR_DB2_V11-<version>.jcl (for DB2 z/OS v11)

The extractor JCL files can be sourced as follows:

- Directly from the CAST AIC Portal web page
- from root of your CAST installation folder
- or can be sourced direct from CAST

See [DB2 zOS extractor - installation and configuration](#) for information about the installation procedure in a z/OS environment and [Using the DB2 zOS extractor](#) for information about executing the extractor.

DB2 z/OS extractor - description

The DB2 extractor contains four categories of steps. The first category, the second category, and the fourth category contain only one step each (STEP00, STEP01, and STEP26) whereas the third category contains 24 steps (STEP02 to STEP25).

- Step **STEP00** will reset all the generated files:

```
/* IF A COLUMN CAN CONTAIN BINARY CHARACTERS, LIKE SOME VARCHAR
/* COLUMNS, THEN INSERT A STAR (*) CHARACTER JUST AFTER THE COLUMN
/* IDENTIFIER IN THE 'EXTRACTED COLUMNS' SECTION.
/*
/* DO NOT MODIFY THE OTHER SECTIONS.
/*
/* EACH COLUMN IS EXTRACTED WITH ITS SIZE DEFINED IN SYSTEM CATALOG.
/* THE SIZE OF A COLUMN IS PLACED JUST BEFORE THE COLUMN.
/* IF SIZES OF COLUMNS DO NOT CORRESPOND TO THOSE THAT ARE DEFINED
/* IN YOUR SYSTEM CATALOG, THEN MODIFY THE SQL QUERIES ACCORDINGLY.
/*
/* NOTE:
/* =====
/* IN THE CASE WHERE THERE WOULD HAVE A LARGE NUMBER OF OBJECTS,
/* THEN THE STEP15 MAY REQUIRE A LOT OF TEMPSPACE FOR THE ORDER-BY
/* CLAUSE.
/*
/*-----
/*
/*-----
/* DO - RESETTING GENERATED FILES
/*
/*-----
//STEP00 EXEC PGM=IDCAMS
//SYSOUT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DEL CAST.DB2.MANIFEST
DEL CAST.DB2.DBASE
DEL CAST.DB2.SCHEMA
DEL CAST.DB2.SYSDTYP
DEL CAST.DB2.USRDTP
DEL CAST.DB2.TABLE
```

- Step **STEP01** creates a reference file containing information about the structure of the information that is extracted from the DB2 system catalog:

```
/*
/* 01 - CREATING MANIFEST FILE
/*
/*-----
/* REMARK:
/* YOU CAN CHANGE FILE NAMES IN THE 'GENERATED FILES'
/* SECTION. FILE NAMES MUST BE COHERENT WITH THOSE THAT
/* WILL BE USED ON THE ANALYSIS SERVER.
/* IF A COLUMN CONTAINS BINARY CHARACTERS (SOME VARCHAR
/* COLUMNS), THEN YOU MUST INSERT A STAR (*) CHARACTER JUST
/* AFTER THE COLUMN IDENTIFIER IN THE 'EXTRACTED COLUMNS'
/* SECTION.
/* DO NOT CHANGE OTHER INFORMATION.
/*-----
//STEP01 EXEC PGM=IDCAMS
//SYSOUT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//FILEIN DD *
-----
-- CAST EXTRACTOR FOR DB2 ZOS V8 - V9
-----
COUNT = 24
VERSION = A.1.11.4
-----
-- GENERATED FILES
-----
GLOBAL.DATABASES = CAST.DB2.DBASE
GLOBAL.SCHEMAS = CAST.DB2.SCHEMA
GLOBAL.DTP = CAST.DB2.SYSDTYP
GLOBAL.UDT = CAST.DB2.USRDTP
TABLES.DEF = CAST.DB2.TABLE
```

- Steps **STEP02** to **STEP25** execute queries on the DB2 system catalog in order to produce information about database structure and specific DB2 objects. Each step uses one query and produces one result file. Each step invokes the **DSNTIAUL** utility and sends it an SQL query via the **SYSIN DD** card. All queries that are used in this JCL are in read-only access mode. The results are saved into the data set specified in the **SYSREC00 DD** card:

```

131 /* 02 - EXTRACT DATABASES
132 /*
133 /* COLUMN      TYPE      COL-SIZE EXTRACT-SIZE
134 /* -----
135 /* DBNAME      VARCHAR   24         24
136 /* -----
137 //STEP02 EXEC PGM=IKJEFT01,DYNAMNBR=20
138 //SYSTSPRT DD SYSOUT=*
139 //SYSPRINT  DD SYSOUT=*
140 //SYSUDUMP  DD SYSOUT=*
141 /*
142 //SYSREC00 DD DSN=CAST.DB2.DBASE_DISP=(NEW,CATLG.),
143 //          SPACE=(TRK,(100,100),RLSE)
144 //SYSPUNCH DD SYSOUT=*
145 //SYSPUNCH DD DUMMY
146 //SYSTSIN DD *
147 DSN SYSTEM(DB2)
148 RUN PROGRAM(DSNTIAUL) PLAN(DSNTIB01) -
149 LIB('DSN810.RUNLIB.LOAD') PARM('SQL')
150 //SYSIN DD *
151
152 SELECT DISTINCT
153 CHAR(24), CHAR(DBNAME)
154
155 FROM SYSIBM.SYSTABLES:
156
157 /*
158 -----
159 /*
160 /* 03 - EXTRACT SCHEMAS
161 /*
162 /* COLUMN      TYPE      COL-SIZE EXTRACT-SIZE
163 /* -----
164 /* TAB SCHEM   VARCHAR   128        128
165 /* -----
166 //STEP03 EXEC PGM=IKJEFT01,DYNAMNBR=20
167 //SYSTSPRT DD SYSOUT=*
168 //SYSUDUMP DD SYSOUT=*
169 /*
170 //SYSPRINT DD SYSOUT=*

```

- Step **STEP26** generates a file with the number of rows of tables. This information is extracted from DB2 system catalog:

```

/*
/* 26 - EXTRACTING NUMBER OF ROWS FOR TABLES
/*
/* COLUMN      TYPE      COL-SIZE EXTRACT-SIZE
/* -----
/* DBNAME      VARCHAR   24         24
/* CREATOR     VARCHAR   128        128
/* NAME        VARCHAR   128        128
/* CARDF       FLOAT     11         11
/* -----
//STEP26 EXEC PGM=IKJEFT01,DYNAMNBR=20
//SYSTSPRT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
/*
//SYSREC00 DD DSN=CAST.DB2.TABROWS,DISP=(NEW,CATLG),
//          SPACE=(TRK,(100,100),RLSE)
//SYSPUNCH DD SYSOUT=*
//SYSPUNCH DD DUMMY
//SYSTSIN DD *
DSN SYSTEM(DB2)
RUN PROGRAM(DSNTIAUL) PLAN(DSNTIBxx) -
LIB('DSNxxx.RUNLIB.LOAD') PARM('SQL')
//SYSIN DD *

SELECT
CHAR(24), CHAR(DBNAME),
CHAR(128), CHAR(CREATOR),
CHAR(128), CHAR(NAME),
CHAR(11), CHAR(CARDF)
FROM SYSIBM.SYSTABLES
WHERE TYPE = 'T'
ORDER BY

```

i By default **Step 26** of the DB2 z/OS extractor is set to output the raw file containing table size information with the name "CAST.DB2.TABROWS". However, the extractor JCL may have been manually modified and the output file may be named differently or, during the transfer to the Windows environment, the resulting file may be named differently - see **Dataset names and MANIFEST** in [DB2 zOS extractor - installation and configuration](#) which explains this in more detail. You can find out more information about how to use the raw table size data in [XX L tables Quality Rules enablement](#).

