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Carsten's Corner: New Utility to Compare Object Authority

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Managing object authority requires control of a number of object attributes: object ownership, object private authorities, object primary group, and object authorization list, just to mention the most common properties involved. In addition, database file objects support field-level authority, and program objects define how the program interacts with adopted authority. As for the latter, programs are capable of both inheriting adopted authority from previous call levels as well as adopting their own owners' authority, depending on the program's USEADPAUT and USRPRF attribute settings, respectively.

Ensuring that two objects have corresponding authority attributes therefore implies comparing the two objects' various security-related attributes. To make this operation as simple and efficient as possible, I've created the *Compare Object Authority (CMPOBJAUT)* command. Let me introduce you to the CMPOBJAUT command prompt, in turn defining the input parameters required for the command:

```

Compare Object Authority (CMPOBJAUT)

Type choices, press Enter.

Object . . . . . _____ Name

Library . . . . . *LIBL Name, *LIBL, *CURLIB

Object type . . . . . _____ *ALRTBL,
*AUTL, *BNDDIR...
Reference object . . . . . _____ Name

Library . . . . . *LIBL Name, *LIBL, *CURLIB

Reference object type . . . . . _____ *OBJTYPE *OBJTYPE,
*ALRTBL, *BNDDIR...
Output . . . . . * *, *PRINT

```

You specify the qualified name and type of the object with which to compare authority as well as the reference object's qualified name and object type. The CMPOBJAUT then compares all relevant object authority attributes of the specified object against the corresponding attributes of the reference object. Here's an example of how the CMPOBJAUT command would look if you wanted to compare Program AAA in Library XXX against Program BBB in Library ZZZ:

```
CMPOBJAUT OBJ(XXX/AAA)
           OBJTYPE(*PGM)
           REFOBJ(ZZZ/BBB)
           REFOBJTYPE(*OBJTYPE)
           OUTPUT(*)
```

You can direct the command's output to be either displayed on screen or printed with your job's spooled output. In the above case, the detailed outcome of the requested comparison is shown on a display panel, as demonstrated in the example below:

```

                                Compare Object Authority
WYNDHAMW                                01-05-11
15:02:16
Object . . . . . :   AAA                Reference object . :   AAA
Library  . . . . . :   XXX                Library  . . . . . :   ZZZ
Type . . . . . :   *PGM                Type . . . . . :   *PGM
Owner  . . . . . :   DRIEHL                Owner  . . . . . :
CARSTEN
Authorization list :   *NONE                Authorization list :
PRODAUT
Primary group . . :   *NONE                Primary group . . :
*NONE
Program adoption . :   *USER      *YES      Program adoption . :
*OWNER      *YES

Compare status:   Public authority does not match
+

-----Object-----   ---Reference object---

User      Authority   User      Authority
*PUBLIC    *USE       *PUBLIC    *AUTL
DRIEHL     *ALL       CARSTEN    *ALL
```

```

      Bottom
      F3=Exit      F7=Status list      F9=Edit authority      F11=Display object
detail
      F13=Change primary group      F14=Revoke authority      F24=More keys

      F5=Refresh      F8=Change owner      F10=Grant with reference object
F12=Cancel
      F15=Change program      F17=Top      F18=Bottom      F22=Command line
F24=More keys

```

The two objects involved in the object authority comparison are displayed side by side, as are their authority-related attributes, including object type specific attributes, if any. The compare status defines the first found difference, and a plus (+) sign at the end of the status line indicates that more differences were found. Use function key F7 to display the complete list of the differences found by the CMPOBJAUT command.

Both objects' private authorities are listed at the bottom of the display, and all private authorities assigned to the object in question, that are not matched on the reference object, are highlighted. Note that the security-related commands executed by the panel's function keys are all targeted against the specified object, allowing you to immediately change the relevant authority attributes of the object. Use function key F5 to repeat and update the authority comparison directly from the display panel following a successful change.

I've included both sets of function keys available in the above example in order to show all the functions available from the display panel. Use function key F2 to toggle between the two sets. Both the command and display panel are explained in detail in the accompanying cursor-sensitive help text. In an upcoming article I'll present yet another new CL command, the *Work with Object Authority (WRKOBJAUT)* command, which enables you to perform the object authority comparison to a selected range of objects, all in one operation.

The following sources are involved in creating the CMPOBJAUT command:

```

CBX807L -- RPGLE  -- Retrieve Command Parameter Value List
CBX807  -- RPGLE  -- Compare Object Authority - CPP
CBX807V -- RPGLE  -- Compare Object Authority - VCP
CBX807C -- RPGLE  -- Compare Object Authority - Choice Program
CBX807E -- RPGLE  -- Compare Object Authority - UIM Exit Program
CBX807H -- PNLGRP -- Compare Object Authority - Help
CBX807P -- PNLGRP -- Compare Object Authority - Panel Group
CBX807X -- CMD    -- Compare Object Authority

CBX807M -- CLP    -- Compare Object Authority - Build command

```

To create all above objects, compile and run CBX807M, following the instructions in the source header. As always, you'll also find compilation instructions in the respective source headers.

You can [download a zip file containing the source code here](#).

Related IBM Security Documentation

[Planning and setting up system security](#)

[Planning resource security](#)

[Planning object authority](#)

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