DAL for AS/400: Server Installation Clarifications

Revised: 1/25/93
Security: Everyone

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TOPIC ----------

This article contains additional information about the Data Access Language for AS/400 Server installation. These items should be noted as changes, additions, or clarifications to the "Data Access Language Server for AS/400 Installation Guide, Version 1.3.7".

DISCUSSION ----------

Informational

The following informational items are true of the server at release 1.3.7, as loaded from the distribution tape/cartridge with a volume serial number of "DAL137".

- On page 9, the restore of the distribution library (Step 3 of "Installing the server") will result in 57 Objects being restored and 114 Security or data format changes occurring.

- On page 10, the restore of the DALDEMO library (Step 5 of "Installing the server") will result in 11 Objects being restored and 22 Security or data format changes occurring.

These counts may change with future releases of the server. For that reason this information is not included in the published documentation.

Change Required

- On page 12, Step 7 of "Installing the server", the display system values command is not accurate. It should be:

    DSPSYSVAL SYSVAL(QSYSLIBL) <enter>

Instead of:
DSPSYSVAL SYSVAL(QSYSLIB) <enter>

- On page 27, the "note" has a typographical error at the end of the first sentence. It should be:

  library/DALDBV01

  Instead of:
  library/DALDBV0L

Clarification

Appendix B, "Displaying Table Lists", describes the two methods that can be used to create the list of tables that an individual user, or the entire site, will see when the DAL command "Describe Tables" is issued. This is the list of available tables that the user will see when using an application that supports the Data Access Language client.

Please note that DAL uses the SQL standard format of "Creator.Tablename" instead of the AS/400 standard of "Library/File" when displaying this table list.

In the AS/400 environment, the table list can actually be a list of:

- Libraries and Files - displayed in the Creator.Tablename format as LibraryName.FileName

- SQL Collections and Tables - displayed in the Creator.Tablename format as Collection.Tablename

- A combination of both libraries and SQL collections

It is important to note that, in the AS/400 environment, the entire environment is available for display in the table list if no "view" has been created, or if it has been created improperly. This is because DAL is reading a system-wide directory in the AS/400 environment, not just a DBMS system catalog. This search can take a long time and can cause confusion as it will probably not properly reflect what the user should actually be able to see and access.

It is also important to note that the AS/400's object authorization is the final arbitrator of what someone can access. Users may be able to see a file and/or library name in the table list, but if they don't have object authority, they will not be able to see column/field names, nor the actual data.

As installed, there is a site-level view created (specified in the environment file, see page 14) which will display only the demonstration tables shipped with the DAL for AS/400 Server. A new site-level view, or set of user-specific views, must be created to display a table list which is pertinent to the desired information for the site or user(s).

Creating an SQL View

Step 3 of Appendix B, "Create an SQL view with a statement similar to" (page 27), tells you how to create an SQL view that will result in the desired list of libraries and file names. To create this view, you need the SQL/400 licensed product, not just the SQL/400 runtime libraries.

The SQL create view statement documented in the install guide, on page 27, is incorrect.

If you are creating a view for a specific user, you must first create a library with the userID as the library name and then create the view, substituting the library name (which is the same as the userID) in place of "library" in the create view statement.

Use the STRSQL (Start SQL) function of the AS/400 while you are signed on as QSECOFR to create this view.

1) If you wish to define a view with the exclusions stated in the install guide on page 27, which are:

   - entries with null file or library names
   - source files (DBXTYP would be an 'S')
   - all libraries or collections starting with 'Q'
   - all files starting with 'QDICT'

   The following is the correct SQL/400 create view statement:

```
CREATE VIEW library/DALDBV01
AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
FROM QADBXREF
WHERE NOT DBXLIB = ''      << there is no space between the quotes! >>
  AND NOT DBXFIL = ''      << there is no space between the quotes! >>
  AND NOT DBXTYP = 'S'
  AND NOT SUBSTR(DBXLIB,1,1) = 'Q'
  AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

2) If you wish to allow the user to see a list of ALL the libraries (limited as specified above) EXCEPT for a specific one, change the command to:

```
CREATE VIEW library/DALDBV01
AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
FROM QADBXREF
WHERE NOT DBXLIB = 'LibraryName'
  AND NOT DBXLIB = ''
  AND NOT DBXFIL = ''
  AND NOT DBXTYP = 'S'
  AND NOT SUBSTR(DBXLIB,1,1) = 'Q'
  AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

3) To limit the user to see ONLY a specific library, change the command to:

```
CREATE VIEW library/DALDBV01
AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
FROM QADBXREF
WHERE DBXLIB = 'LibraryName'
  AND NOT DBXFIL = ''
  AND NOT DBXTYP = 'S'
  AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

Multiple libraries can be chosen with the addition of:

```
  OR DBXLIB = 'LibraryName'
```

to this statement (option #3).

Similar syntax can be used to limit the display of files within a library. Refer to the AS/400 Structured Query Language/400 Reference and Programmer's Guide manuals for additional information on creating a valid SELECT statement for the CREATE VIEW statement.

Creating a View from a Logical File

If you do not have the SQL/400 licensed product, you must create a logical file rather than creating the SQL view as documented above. In Appendix B, the section "Creating a logical file" (page 27) tells you how to create a logical file that will result in the desired table list. Page 28 shows the source that must be changed, and then used as the basis for creating the individual logical file for each user.

The following choices explain the results that will be displayed by the logical file created as a result of using the source file given as an example in the appendix (#1), or the changes you can make if you wish to restrict the libraries/SQL collections that will be displayed (#2 and #3).

Please note that this source code is sensitive, by column number, to where fields are entered on the line. Please refer to the AS/400 "Data Description Specifications Reference" manual for complete instructions on modifying these source control statements.

1) To present the user with a list of ALL the libraries and files in the AS/400, you need only create the logical file without changing the source file as loaded from the tape and documented on page 28. The source file is QDDSSRC in the DALLIB library and the create logical file command is documented on page 28 in the last paragraph.

2) If you wish to allow the user to see a list of ALL the libraries EXCEPT for a specific one:

change the source to have the DBXLIB statement as:

```
     O DBXLIB             COMP (EQ 'LibraryName')
```

instead of:

```
        O DBXLIB              COMP (EQ '           ')
```

3) To limit the user to see ONLY a specific library:

change the source to have the DBXLIB statement as:

```
        O DBXLIB              COMP (NE 'LibraryName')
```

instead of:

```
        O DBXLIB              COMP (EQ '           ')
```

Both options 2 and 3 use 'negative' compare logic because the "O" preceding DBXLIB in the statement means "Omit all that pass the following COMPare". Attempts to change this logic to a positive COMPare with the use of Select instead of Omit were not successful (in our testing). So the statements documented here are the recommended logic, which has been tested. Just be careful in the compare logic!

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