ABS Tech Note: DAL21 AS/400 Install Doc Update (2/93)

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Security: Everyone

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TOPIC ----------

This Tech Note 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".

More information on IBM's AS/400 system can be obtained directly from the relevant IBM publications.

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":

- Page 9, "Restore the DAL distribution library from tape" (Step 3 of "Installing the server"): this action will result in 57 objects being restored and 114 security or data format changes occurring.

- Page 10, "Restore the demonstration database tables" (Step 5 of "Installing the server"): this action will result in 11 objects being restored and 22 security or data format changes occurring.

These object and format counts may change with future releases of the server. For that reason this information is not included in the published documentation; since it is informative, it is included in this Technical Note for clarification.

Change required

- Page 12, "Prepare to run the DALINST command" (Step 7 of "Installing the

server"): the 'Display System Value' command is not accurate. It should be: 'DSPSYSVAL SYSVAL(QSYSLIBL) <enter>'

- Page 27, "Create an SQL view with a statement similar to" (Step 3 of "Creating an SQL view" in Appendix B, "Displaying Table Lists"): the "• Note" is not accurate. It should be: "library/DALDBV01".

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 Client command 'Describe Tables' is executed. When issued, this command creates a list of available tables that are visible to the 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

When using DAL in the AS/400 environment, it is important to note that the entire file system 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 (as with other DAL Server environments). This search can be quite lengthy and may cause confusion for the user, as it will probably not reflect what that user should actually be able to see and access using DAL.

It is also important to note that the AS/400's object authorization is the final authority of what a user can access. For example, when issuing a 'Describe Tables', a user may be able to see many files and/or library names in the table list. If, however, that user does not have object authority granted for a specific item, they will not be able to see column/field names, nor the actual data for all items listed as a result of a 'Describe Tables'.

As installed, there is a site-level view created 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). For more information, see "Review/modify the environment file" (Step 9 of "Installing the server").

Creating an SQL view

Page 27, "Create an SQL view with a statement similar to" (Step 3 of "Creating an SQL view" in Appendix B, "Displaying Table Lists") explains how to create an SQL view that will result in the desired list of libraries and file names. To create this view requires that you have the SQL/400 licensed product, not just the SQL/400 runtime libraries.

The entry that is listed on page 27 requires clarification: 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.

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 = ''
               AND NOT DBXTYP = 'S'
               AND NOT SUBSTR(DBXLIB,1,1) = 'Q'
               AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

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

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

To limit the user to see ONLY a specific library, the command should be:

```
CREATE VIEW library/DALDBV01
     AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
          FROM QADBXREF
          WHERE DBXLIB = 'LibraryName'
               AND NOT DBXFIL = '' (again, no space between the quotes)
               AND NOT DBXTYP = 'S'
```

```
                AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'

          Multiple libraries can be chosen with the addition of:

                OR DBXLIB = 'LibraryName'

          for each additional library.
```

Similar syntax can be used to limit the display of files within a library. Please refer to the "AS/400 Structured Query Language/400 Reference and Programmer's Guide" 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. Page 27, "Create a logical file" (in Appendix B, "Displaying Table Lists"), 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 examples explain the results that will be displayed after creating the logical file using the source file given as an example in Appendix B, as well as changes you can make if you wish to restrict the libraries/SQL collections that will be displayed. Note that this source code is column sensitive. You can refer to the AS/400 "Data Description Specifications Reference" manual for complete instructions on modifying these source control statements.

To present the user with a list of all 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.

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 '           ')
```

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 '           ')
```

Note that both examples use negative compare logic; 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 when tested at Apple. Thus, the statements documented here are the recommended logic. Just be careful with those compares.

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