

ARPEGGIO™ Data Access Frequently Asked Questions

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| Product: ARPEGGIO™ products | NIC: N/A |
| Version: ARPEGGIO 1.0 & later | Interface: RUMBA® Router |
| Host: Mainframe, AS/400® RS/6000™ | Microsoft® SNA® Server |
| | Oper. Sys.: Microsoft® Windows® 95/98 |

Summary

This technical bulletin provides answers to frequently asked questions about the Data Access software included with ARPEGGIO for performing queries against ODBC and DRDA compliant databases. Questions and answers are grouped into the following sections:

- **Product Overview** describes ARPEGGIO software and answers common questions about it.
- **ODBC and Data Sources** explains the interface between ODBC and ARPEGGIO Data Access. It also includes information about data sources, registration, and ODBC traces.
- **Queries and SQL** focuses on SQL queries that you use to run reports or retrieve data.

Product Overview

Q: What is ARPEGGIO software?

A: ARPEGGIO software is a combination of data access technology and reporting tools.

The data access technology of ARPEGGIO software is bundled into the ARPEGGIO products to complement the reporting technology. In Data Access, you can preview data and also transfer data to and from the client machine. Retrieved data can be presented in predefined reports or stored in a variety of file formats.

Predefined reports are created in ARPEGGIO Report Designer. This tool is available when you purchase ARPEGGIO for the Desktop or ARPEGGIO for the Developer.

Q: What new data access features are in ARPEGGIO Data Access?

A: ARPEGGIO Data Access displays queries, transfers, databases, tables, and procedures for a given data source as data objects that you can drag and drop into a workspace. You can also set properties for and initiate action on these objects. Each object provides commands in a pop-up menu that you can access by clicking the right mouse button. This pop-up menu allows you to assign a user-friendly name to the object, preview the object's data, and send the data to a specific application, like Excel or Word.

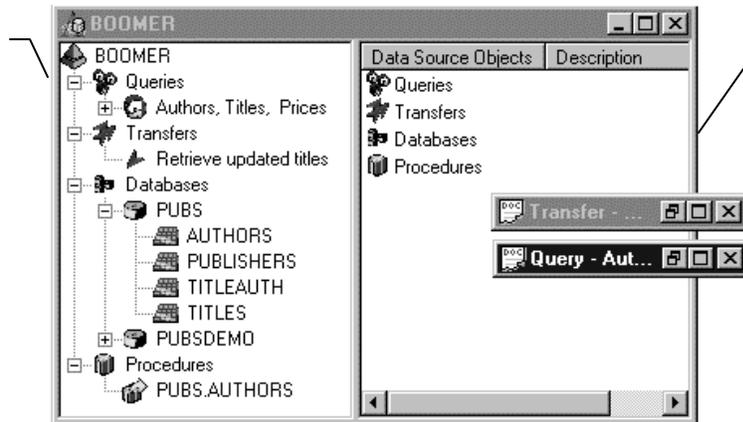
ARPEGGIO Data Access also includes tools like Query Builder and Transfer Builder that allow you to build queries by dragging and dropping data objects onto a query grid, or build transfer statements by filling in fields in a dialog box.

ARPEGGIO Data Access simplifies many tasks, but also provides tools to work with advanced SQL statements. For example, you can use the Criteria Builder to modify an SQL statement to change the AND or OR precedence, or to implement complex joins between tables.

Q: How do I work with objects in ARPEGGIO Data Access?

A: Your view of a data source can be customized to contain only the objects you use. Filtering out unnecessary data objects does not delete or change them for other users. To create multiple views of the same data source, save the views as separate Database Access (.dba) files.

This view of an AS/400 named BOOMER shows objects that relate to publications. Objects that do not relate to publications have been removed. Removing unused objects from a data source view does not delete the files on the data source.



The right panel of the window shows details about the current selection from the left panel of the window.

Drag data objects into the Transfer Builder and Query Builder to create query and transfer objects. The resulting objects appear in the left panel of the window.

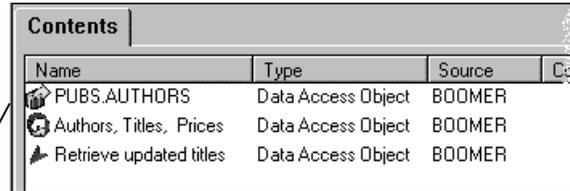
Figure 1. Data Access is where you create a view into a selected data source.

Q: What is the ARPEGGIO Data Organizer?

A: The ARPEGGIO Data Organizer allows you to create workspaces where you can view and execute existing queries, reports, and transfers from many different data sources. You can also create batches that automatically run a set of objects.

You can create multiple workspaces (saved as .DBO files) to be used in ARPEGGIO Data Organizer, which you can then email to other ARPEGGIO users in your workgroup. You create Database Organizer (.DBO) files by dragging predefined objects from ARPEGGIO Data Access to the ARPEGGIO Data Organizer.

Symbols by the name indicate whether the object is a query, procedure, or a transfer object.



| Name | Type | Source | C |
|-------------------------|--------------------|--------|---|
| PUBS.AUTHORS | Data Access Object | BOOMER | |
| Authors, Titles, Prices | Data Access Object | BOOMER | |
| Retrieve updated titles | Data Access Object | BOOMER | |

Figure 2. Drag-and-drop the objects you define in Data Access to create a custom .DBO file in Data Organizer.

Q: Can I try out ARPEGGIO Data Access without connecting to a host computer?

A: ARPEGGIO Data Access provides a sample Microsoft Access® database called WDDEMO that is copied to your PC and registered with ODBC during installation.

To work with this data source, start ARPEGGIO Data Access and select WDDEMO from the Machine Data Source page of the Select Data Source dialog box. To open this dialog box, select File/New.

If you have other databases that you would like to open in ARPEGGIO Data Access, you must register them as ODBC data sources. Once you register the data source, you can select the database at any time.

Q: Do I need anything other than the files ARPEGGIO software ships with to connect to my database?

A: If the source data was created in a PC application (such as dBase® or Microsoft Excel®), then you need only your data files and the ODBC software and drivers that are distributed with Windows. Depending on the install options you selected, you may already have ODBC installed on your PC. In this case, simply define a data source name for your data files or for the computer that contains the source data. If the ODBC drivers are not installed, you must run the Windows Setup program to add them.

ARPEGGIO software provides many third-party ODBC drivers that can connect you to enterprise databases such as ORACLE® and SQL Server. During installation, you select the ODBC drivers that you need under Third-Party Drivers. If the ODBC driver you need is not provided in your ARPEGGIO software, you need to obtain the appropriate ODBC driver from your database vendor and configure your workstation as a Windows client to that database platform. These requirements may vary with the version and the revision level of the particular database platform.

Q: What is the Description Editor in ARPEGGIO Data Access?

A: In ARPEGGIO Data Access, you can create a database table to be stored on a data source using the Description Editor. To create a table, you must first create a column description that defines the table's structure (column names, data types, etc.). You can create a table when you are creating column descriptions in the Description Editor, or when you are building a transfer object in the Transfer Builder.

Q: What is the Remote Command in ARPEGGIO Data Access used for?

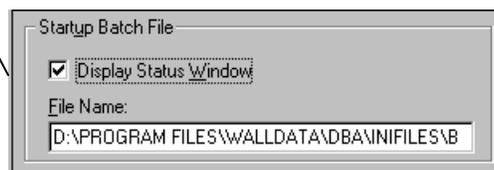
A: This command is located on the Tools menu, and it opens a dialog box in which you type remote commands that you want to run on AS/400 hosts. In order to use this command, you must connect to your AS/400 host using the RUMBA ODBC driver.

Q: What is the Startup Batch File Feature and what does it include?

A: When you set up RUMBA DRDA-32 data sources (supported by the RUMBA ODBC driver), you can create a batch file that contains host commands and/or SQL statements that are processed in batch mode when you connect to a data source. To use this feature, you must do the following:

1. Write a batch file that contains the host commands to be executed and save the batch file with a .CMD extension. By default, the file name should be the first 8 characters of the data source name (for example, if the data source is BOOMER, then save the file as BOOMER.CMD).
2. Create a subdirectory named INIFILES under the DBA subdirectory, then place the .CMD file in this directory.
3. Specify this file in the Startup Batch File section of the Data Source Settings dialog box. This dialog box is opened using the Option button on the Connect to {Data Source} dialog box, which appears when you connect to a data source in ARPEGGIO Data Access. The default path is \PROGRAM FILES\WALLDATA\DBA\INIFILES\.

Check this option if you want error messages to display on the screen.



Specify a path and file name for your batch command file.

Figure 3. Use the Startup Batch File dialog box to specify the path name to the .CMD file you are using.

Any errors are recorded in a log file and can be displayed on the screen if you select the Display Status Window option. The file name for the error log file consists of the first eight characters of the data source name followed by a .LOG extension.

Q: How do I execute remote commands from the startup file?

A: If your data source is a RUMBA DRDA-32 data source, you can execute remote commands on AS/400 hosts using the extended SQL syntax implemented in the RUMBA ODBC driver. The RUMBA ODBC driver's extended SQL syntax allows you to use the WD Execute Remote Command call in place of an SQL statement.

The syntax of the procedure call is:

```
{CALL WDEXECRMTCMD(command)}
```

The procedure call takes an AS/400 remote command line as a parameter. The results are returned as a set of error structures. To retrieve the results of the execution, the program must call SQLError until there is no data returned.

Q: What is Record-Level Access?

A: Record-level access is a data access feature provided by the RUMBA ODBC driver and used within the Data Access application. Record-level access allows you to browse data stored in AS/400 tables. In the Record Navigator, you can find specific records using key values and bookmarks. In an object's navigation property settings, you can specify that a particular bookmarked record is always the first record displayed when you open the table in the Record Navigator.

To run Record Navigator, select a table in the Object Browser, then select the Navigate Table from the Tools menu or from the table's pop-up menu.

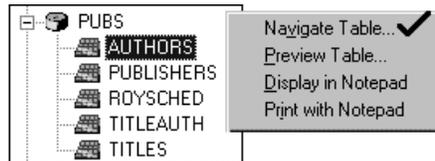


Figure 4. Use the Table pop-up menu to open the Record Navigator.

To specify a bookmark as a start position, use the following procedure.

1. Start Record Navigator for a selected table, then select a rowset.
2. Click the Add Bookmark icon from the toolbar and type a name for the bookmark.
3. Close the Record Navigator.
4. Right-click the table in the Object Browser, then select Properties from the pop-up menu.
5. Click the Navigation tab.
6. Select the table from Composite Objects. This enables the Start Position and Beginning of File options.
7. From the Start Position list, choose the bookmark.

If you cannot select a table because it contains nullable data, select the Display Nullable Columns in Record Navigator option in the General Preferences dialog box in ARPEGGIO Data Access.

For more information about Record-Level Access, refer to Technical Bulletin 3415, "RDA Provides Both Record-Level and SQL Access to AS/400 Data" or search online help for record-level access.

Q: Why can't I see all my AS/400 files in Data Access?

A: Because Data Access uses ODBC to access the AS/400, it is designed to access files in a relational database. However, many AS/400 files that contain data are not true database files; that is, they are non-relational files or have not been externally described. Data Access has previously been unable to access these non-relational files. With the release of RUMBA 95/NT versions 5.0 U03 and 5.1 U01 and ARPEGGIO for the Desktop version 2.0, you now have the option of viewing and transferring these non-relational files. For more information on working with non-relational files, refer to the on-line documentation for Data Access.

ODBC and Data Sources

Q: What is ODBC?

A: Open Database Connectivity (ODBC) is an application programming interface (API) from Microsoft that allows applications to access a wide variety of databases using a standard set of function calls. Windows applications such as Data Access and the Report Designer can use any ODBC driver to communicate with databases and retrieve information.

Q: What are Open Database Connectivity (ODBC) drivers?

A: Drivers are software modules that handle the processing of ODBC function calls that are made by an application program. They translate the generic function calls submitted by an application into function calls that the specific database management system (DBMS) can understand.

Q: May I redistribute the Microsoft ODBC components and drivers that come with ARPEGGIO software?

A: The Microsoft drivers that are included with ARPEGGIO software are not redistributable. You need to obtain licensing from Microsoft Corporation to distribute Microsoft drivers with run-time versions of ARPEGGIO software.

Q: How do I determine the version of an ODBC driver?

A: To view the vendor-identified version level of a driver:

1. Open Control Panel and select 32-bit ODBC.
2. Click ODBC Drivers to view information about each installed ODBC driver.

If you do not have 32-bit ODBC installed, do the following:

1. Open Control Panel and select ODBC.
2. Click Drivers.
3. Select the individual driver.
4. Select the About button.

Q: What is an ODBC Trace and how is it useful?

A: ODBC Trace records all input and output from the ODBC Driver Manager. Use ODBC Trace when you suspect there is an incompatibility between an application and an ODBC driver.

You must start the ODBC Trace utility before you connect to the host. To run ODBC Trace, perform the following steps:

1. Choose the ODBC Trace icon from the ARPEGGIO Administrative Tools folder on your Start menu. The Dr. DeeBee Spy dialog box appears.
2. Select the data source, and click the OK button.
3. Start your ODBC application (Data Access or Report Designer). ODBC Trace creates a DRDEEBEE.LOG file, which is placed in the Windows directory and trace information is inserted in the file.
4. To terminate the trace, click the ODBC icon and select Close.

Q: What is a data source?

A: An ODBC data source is a 2-part definition that you create; it specifies the location of your data files, and the ODBC driver that is used to access and interpret your data files. The location can be a fully-qualified path to a single database or the name of a host computer.

If you work with multiple databases on a host computer, use the computer name so that you only need to create a definition once.

Q: How do I register a data source?

A: You can register a data source with ODBC using ARPEGGIO Data Access. To do this:

1. Select File/New to open the Select Data Source dialog box.
2. Click the Machine Data Source tab, then click New to open the Create New Data Source dialog box.
3. Click Next to accept the User Data Source default option.
4. Select a driver from the list of ODBC drivers that are currently installed on your computer.
5. Click Next, then click Finish to close the dialog box.

A Setup dialog box will appear for the ODBC driver you selected. Depending on the driver you selected, the setup parameters will vary.

If you selected a driver like Microsoft Access or Excel, you only need to enter a name (for example, "Northwind database") and specify a path to the data file.

If you selected the RUMBA DRDA-32 driver, you enter additional information about the connection.

Q: How do I register a data source that uses the RUMBA DRDA-32 driver?

A: In ARPEGGIO Data Access, select File/New to open the Select Data Source dialog box. On the Machine Data Source page, click New, then choose a data source type followed by the RUMBA DRDA-32 driver.

When the Data Source for RUMBA DRDA dialog box appears, do the following:

- Enter a data source. For each PC, data source names must be unique. The name should be alphanumeric, and can include spaces.
- Enter the RDB name. Note that the RDB Name identifies the host database itself and not the database server (which is identified by the Remote LU).
- Enter a Default Owner (optional) if you want to specify a specific collection or library.
- Click Options to specify additional settings (optional).
- Click Communications to specify information about the settings.

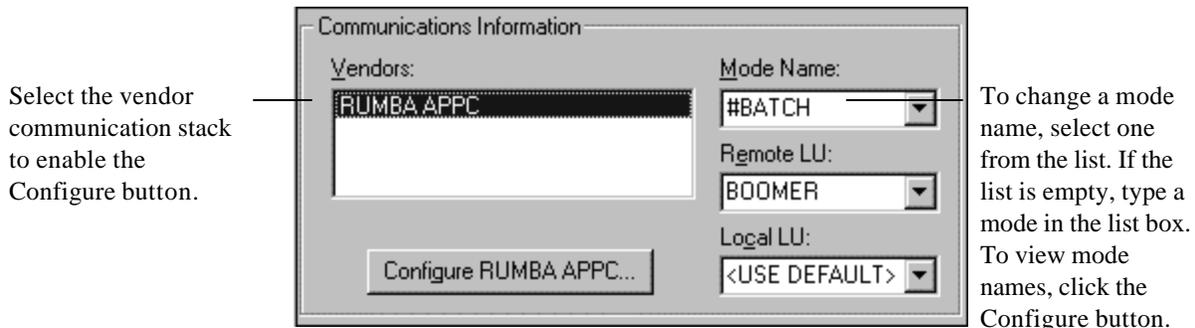


Figure 5. Specify communications information by clicking Communications.

Q: What is an RDB Name, and how do I find it on my host system?

A: RDB Name stands for Relational Database Name. You must specify an RDB Name when you define a data source in the ODBC software that uses the RUMBA DRDA-32 driver.

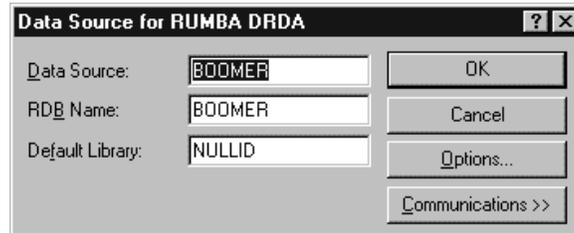


Figure 6. RDB definitions are specified in the Data Source dialog box in the ODBC Administrator.

If you do not know the RDB Name, you can find it in one of the following ways depending on the type of host from which you are retrieving data.

AS/400 - To find the RDB Name on the AS/400, enter the WRKRDBDIRE command on the AS/400 command line and look in the Relational Database column. The RDB name for the system in use will have a Remote Location of *LOCAL.

| Option | Relational Database | Remote Location | Text |
|--------|---------------------|-----------------|------|
| — | BOOMER | *LOCAL | |

Figure 7. On the AS/400, WRKRDBDIRE produces output in this format.

Mainframe - The RDB Name on the Mainframe is the location name in the Bootstrap data set (DDF Record). The setting on the Bootstrap Data set is the LOCATION NAME= .

RS6000 - To find the RDB Name on an RS/6000:

1. At the system prompt, type:
DB2
2. At the DB2 prompt, type:

list database directory

3. Find the Database name.

Q: What is a Mode Name?

A: The mode determines the maximum number of APPC sessions across the connection, as well as the SNA parameters RU size and Pacing Count. It allows you to specify the balance you want to strike between performance and computer resources.

Initially, you set the mode when you define the data source name. However, you can change it in the Communication Information section of the Connect to {Data Source} dialog box whenever you connect to the data source in ARPEGGIO Data Access.

To determine the mode name on a mainframe, find the value for the DLOGMOD parameter in the VTAM definition for the logical unit defined for your workstation. DLOGMOD determines the pacing, RU sizes and the class of service (COS) table names.

To determine the available modes on the AS/400, enter the WRKMODD command on the AS/400 command line. To display a mode description, use the 5=Display option on the WRKMODD command screen.

NOTE: To optimize performance when retrieving large amounts of data, it is recommended that you use the #BATCH mode with RUMBA APPC.

Queries and SQL

Q: How do I cancel a query or determine the status of a query?

A: RUMBA Guardian is a utility that is included in the RUMBA or ARPEGGIO Administrative Tools set. You can use it to view statistics for the active SQL sessions that are using the RUMBA DRDA-32 driver.

To activate RUMBA Guardian, select it from the ARPEGGIO Administrative Tools folder in the ARPEGGIO program folder.

Q: How can I limit the number of records retrieved by a query?

A: If you have the RUMBA ODBC Administrator, you can limit the number of records returned by editing the user profile in the User Profile Editor.

In the Max Records Per Cursor box, type the maximum number of records to be returned or leave 0 as the default (0 = All). When you edit the user profile by using the Database Administrator, the limit you set for number of records retrieved affects queries from any user

interface (Excel, Microsoft Access, PowerBuilder, etc.), not just those from ARPEGGIO Data Access.

Q: Can I use stored procedures with ARPEGGIO software?

A: ARPEGGIO Data Access allows you to run static SQL procedures that are created in the RUMBA ODBC Administrator. A static SQL procedure is a pre-compiled SQL statement that is stored on a data source. Because an SQL statement stored in a static SQL procedure is pre-compiled, it retrieves data far more quickly than the same SQL statement would if you created and executed it from Data Access (dynamic SQL). Static SQL procedures are stored in groups called static packages. You can create static packages using the Package Builder in the RUMBA ODBC Administrator.

If your data source includes static SQL procedures, Data Access displays the procedures as Procedure objects.

Q: Do I need to know SQL to use ARPEGGIO software?

A: The Query Builder tool in ARPEGGIO Data Access generates SQL statements based on the data that you specify in the query grid. For users who are somewhat familiar with SQL, Data Access provides other SQL tools, such as the Criteria Builder and the Expression builder, that allow you to build more complex SQL statements quickly. For more information, search the online help for "SQL tools".

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