Artemis
Accounts II

Client/Server

User Guide

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Version 2.6

Artemis Accounts Client/Server

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Artemis Accounts II
Client/Server Overview

1.1   Basic Concepts

This version of Artemis Accounts uses a Client/Server architecture to allow multiple users to access the database files for the same company simultaneously. In contrast, the single-user version of Artemis Accounts uses a fixed directory structure. The following diagram shows the overall differences between these two approaches.
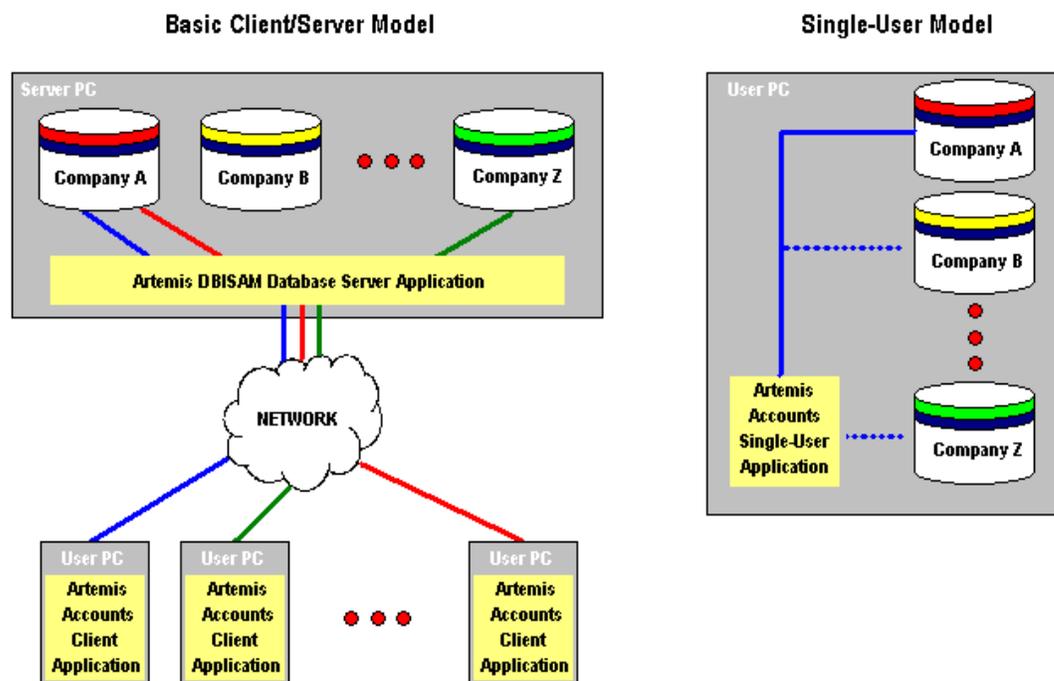
As can be seen from the diagram, the Client/Server design allows multiple instances of Artemis Accounts to access the same company, or different companies, at the same time. To do this, a special software application, called a Database Server separates the accounting application from the accounting data and "serves up" the data as required by each client application. The company data typically resides on a server PC and is accessed through a local area network. Alternatively, the network could be an intranet, or the internet, allowing the accounts to be accessed from remote locations or by travelling sales personnel.

In contrast, in the Single-User design, only one company can be accessed at any time and it can only be accessed by one instance of Artemis Accounts which is installed on the same PC as the company files.

A variation of the Client/Server model is often used when an organisation cannot justify the expense of a dedicated server PC. This is called a "peer-to-peer" network and the overall structure is shown on the next page.

Peer-to-Peer Network Model
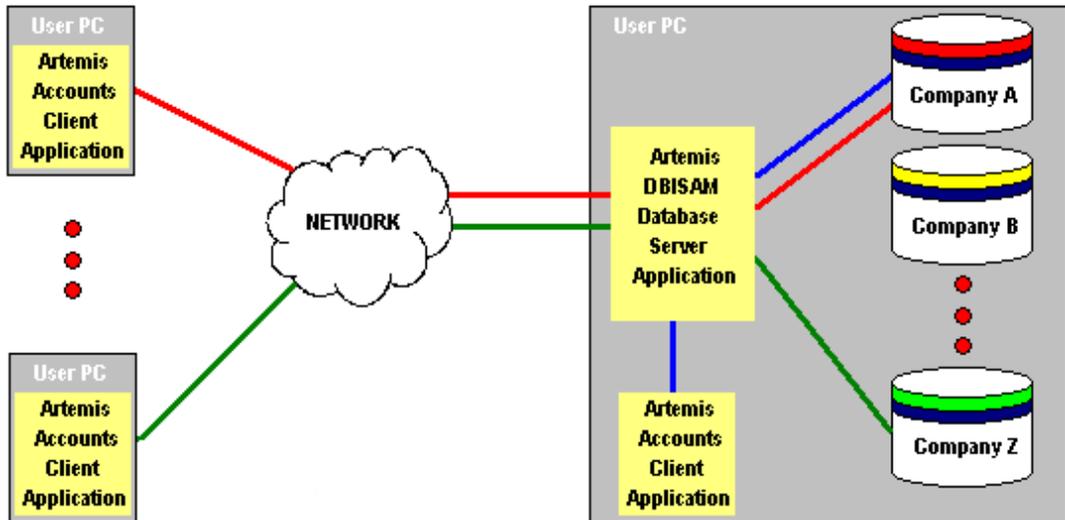
This is essentially the same as the Client/Server approach except that the server PC also functions as a workstation. In this case it would be normal to host the company data and server software on a separate logical or physical disk drive for security reasons, although this is not strictly necessary.

Important Considerations:

As the Client/Server model requires different types of software on the server and on each user PC, a multi-user installation of Artemis Accounts is slightly more difficult to set up. It requires a working knowledge of the TCP/IP protocol and the basic concepts of networking. However, if you can get file-sharing to work, it should be relatively simple. The installation process is described in the next topic.

Because of the possibility that the accounts could be accessed from remote locations over a public network, and the increasing prevalence of wireless local area networks, the communications links between client applications and the server could be susceptible to eavesdropping. As supplied, Artemis Accounts uses encrypted communications using a strong encryption algorithm similar to that used by government agencies. However, this is only one aspect of system security, and the issue of security is addressed further in the Security Considerations topic.

Local Mode Networks.

The addition of a Server application, through which all communications with the database must pass, has advantages and disadvantages. The advantages include the ability to control user access and privileges centrally, and the ability to encrypt all data transmissions on the network. However, this tends to add transmission delays which make the client application somewhat slower in operation.

An alternative is to configure the installation so that the Server is bypassed by using a Local Mode configuration, as shown below.

Local Mode Network Model
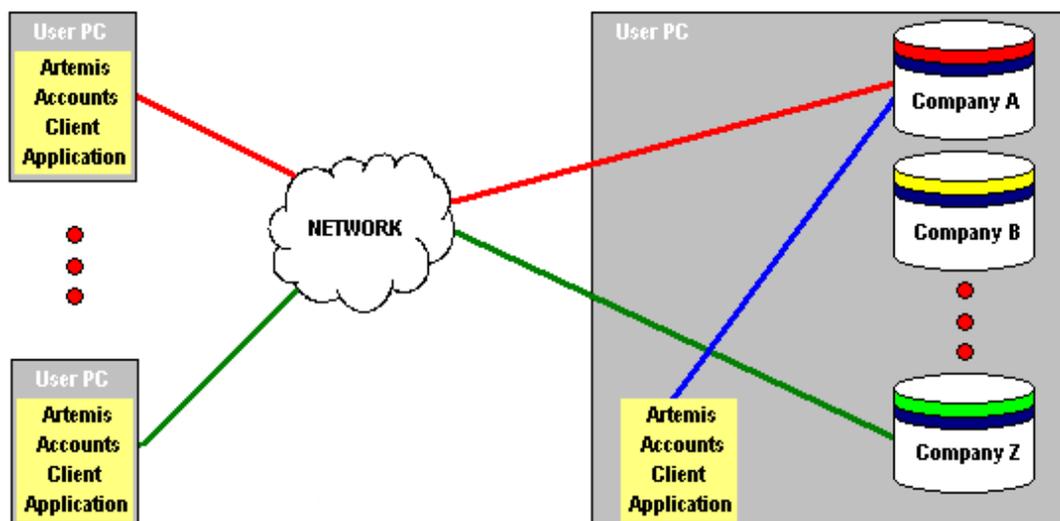
To implement this configuration each Artemis Accounts client application is set up to operate in Local Mode, using the Network Settings function in the client application. In addition, "connection files" must be installed which tell the application where the company databases are located. The help file for the Artemis Accounts application provides details on how this is implemented.

Note that the Server is not shown, in fact it need not be installed for an installation that is configured to operate in Local mode only.

Mixed Mode Networks.

One major disadvantage of Local Mode Networks is that connections are not encrypted. When the improved performance of a Local Mode configuration is desired, and remote access is also required, a combination of the Client/Server and Local Mode can be implemented as shown on the next page.

In this situation, remote users are be routed through the Server and the access control and encryption features of the Client/Server model are applied. Local users access the databases directly with no encryption and the Server is bypassed. All of the record locking and transaction control features are implemented as normal.

Mixed Mode Network Model
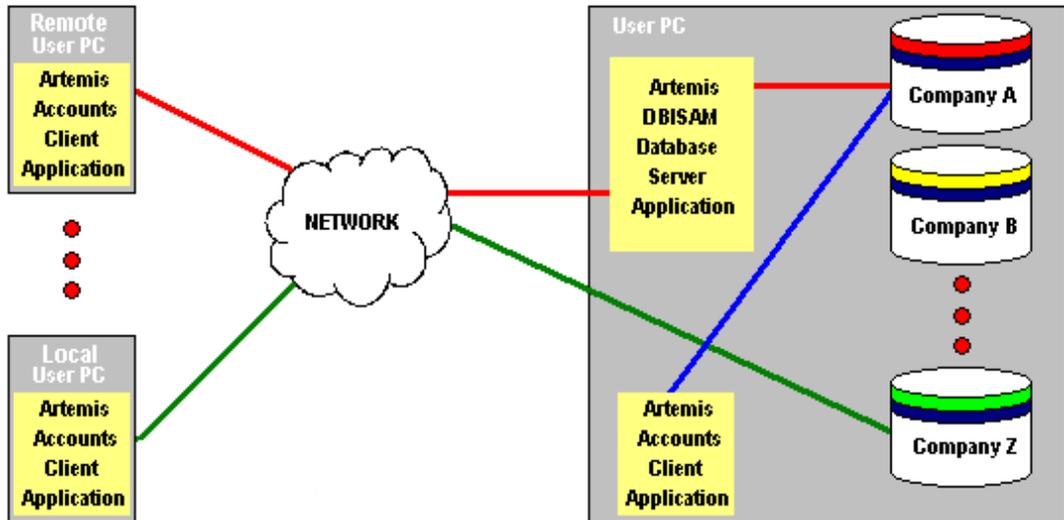
1.2 Installation Process

Installation of Artemis Accounts is a 4-step process:

1. **Install Server** - Install the Database Server, sample company data, and server-side utilities on the server PC.
2. **Configure Server** - Verify/change network settings, add user details to the Database Server, and authorise access to the company files.
3. **Install Clients** - Install the Artemis Accounts client application on the user PCs.
4. **Configure Clients** - Enter network settings, user names, and passwords on each client PC.

These steps are detailed in the following sections.

1.2.1 Server Installation

The server software must be installed to the server PC or, in the case of a peer-to-peer network, to the PC that will be used to store the company database(s). The following applications and files are installed as part of the server installation:

- DBISAM Database Server - DBSRVR.EXE (required)
  This is the workhorse of the server and must always be installed. The sample company database is automatically installed with this application.

- Server Administration Utility - SRVADMIN.EXE (required)
  This utility is needed in order to add and authorise users, or change network settings for the server, i.e. it is used to configure the server. It is also used to resolve certain

problems, e.g. where a client application is locking a table due to an unexpected shutdown.

- Database System Utility - DBSYS.EXE (recommended)
The person responsible for database administration will occasionally need to directly access specific database tables. This utility allows table-level operations to be carried out, such as repairing, restructuring, etc.

Step-by-step process:

1. If installing from a CD, click the version (Standard or Plus+) that you wish to install from the multi-user page of the installer. If installing from a download, simply double-click the downloaded file. The Microsoft Windows Installer will then start automatically.
2. When the Setup Type page of the installer is displayed, as shown below, click the **Server** radiobutton.

3. The installer will suggest that the software be installed to the folder recommended as part of a standard Windows installation. You may change this location if necessary.
4. When the installation is complete, the final screen gives the option to "Launch the Program". Leave this checkbox checked so that the server is started in readiness for the Server Configuration step.

1.2.2 Server Configuration

Before the server can be configured, it must be started. If you followed the instructions in the Server Installation step, it should already be running and this can be verified by inspecting the system tray at the bottom of the screen. Otherwise, you must start the server by clicking the shortcut that has been created on the desktop or in the Start menu.

For a normal installation the following are pre-set parameters and should not require modification at this point:

Server Main Port - 12005
Server Admin. Port - 12006
Server Main Addresses - all addresses
Server Admin. Addresses - all addresses
Encryption Password - aquilatech

If you need to change any of these parameters, the server must be shut down, the DBSRVR.INI file must be edited, and the server must be re-started. In addition, if any changes are made to these parameters, the login options must be modified in the client applications, i.e. Server Admin Utility, Database System Utility, Database Conversion Utility, and Artemis Accounts.

To add users and authorise them to access company files:

1. Start the Server Administration Utility by clicking the shortcut that has been created on the desktop or in the Start menu.
2. If you have changed any of the parameters listed above, choose the **Options...** entry in the **File** menu to change the login options.
3. Login to the server using a User Name of **Admin** and a Password of **DBAdmin** (exactly as shown).
4. Click the Users tab and add users as detailed in the User Management topic. Take a note of the newly-created User Names and Passwords as you will need these when setting up the Artemis Accounts client applications.
5. The sample database will be shown on the Databases page. Now click the Database Users tab and add the newly-created users to the sample company database, as detailed in the Database Users topic.
6. Finally, before moving on to the Client Installation steps, take a note of the name, or IP address, of the server as this will be needed to configure the clients.

Note: At some point, you will want to delete the Admin user for security reasons. Do not do this until one, or more, of the existing users has administrative rights, or you will be unable to login to the server again.

1.2.3   Client Installation

The Artemis Accounts client software must be installed on the PCs of all users that need to access the accounting data. In the case of a peer-to-peer network, it will also be installed on the PC that contains the Database Server and company database(s). The following applications and files may be installed as part of the client installation:

- Artemis Accounts II - ARTEMISX.EXE (required)
  This is the workhorse of the accounting system and must always be installed.

- Database Conversion Utility - AADBCONVERT.EXE (optional)
  This utility is used to convert data from the format used in the single-user version of Artemis Accounts to the format used by the Client/Server version. This need not be installed unless the PC has company files from the single-user version that need to be converted and migrated to the server.

- Database System Utility - DBSYS.EXE (not recommended)
  This utility allows table-level operations to be carried out, such as repairing, restructuring, etc. if this utility is installed on a client PC there is a risk that an inexperienced user could corrupt company databases.

Step-by-step process:

1. If installing from a CD, click the version (Standard or Plus+) that you wish to install from the multi-user page of the installer. If installing from a download, simply double-click the downloaded file. The Microsoft Windows Installer will then start automatically.
2. When the Setup Type page of the installer is displayed, as shown below, click the **Client** radiobutton.

3. The installer will suggest that the software be installed to the folder recommended as part of a standard Windows installation. You may change this location, but there should be no reason for doing so.
4. When the installation is complete, the final screen gives the option to "Launch the Program". Clear this checkbox because it is only used for Server installations.
5. The network settings that will allow Artemis Accounts to find the server now need to be configured. This is described in the Client Configuration topic.

1.2.4   Client Configuration

At this point, the server is set up and Artemis Accounts is installed on the client PCs. However, the application does not know where it should look for available company databases. If you now start Artemis Accounts on any client PC, the following error message will be displayed:
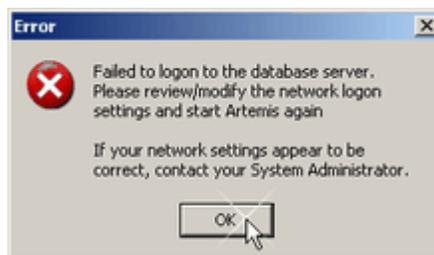
When you click OK to clear the error message, the Network Settings dialog will be displayed, as shown on the next page, to allow you to enter the configuration settings.
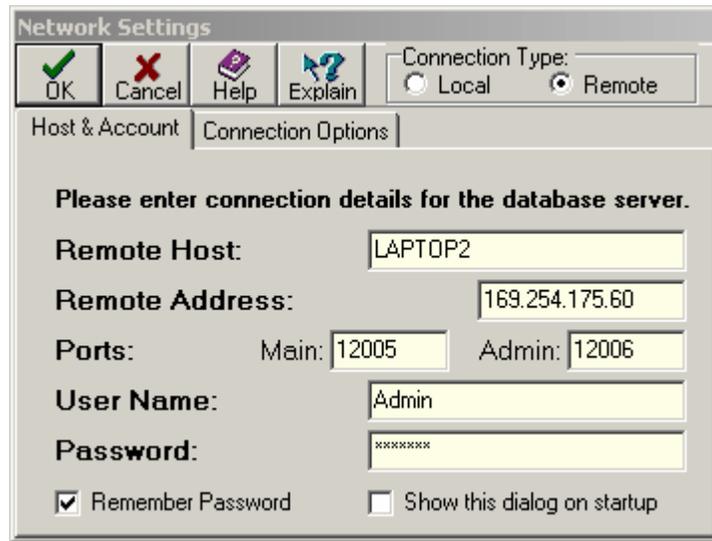
- The **Connection Type** radiobuttons are used to specify whether the application should run in Local mode or Client/Server mode.
- The **Remote Host** field is used to specify the host name for a database server that you wish to connect to. The host name and the IP address are mutually-exclusive and you only need to specify one or the other.
- The **Remote Address** field is used to specify the IP address for a database server that you wish to connect to. The host name and the IP address are mutually-exclusive and you only need to specify one or the other.
- The first **Ports** field is used to specify the main port for a database server that you wish to connect to. The default main port for a database server is 12005.
- The second **Ports** field is used to specify the administration port for a database server that you wish to connect to. The default administration port for a database server is 12006.
- The **User Name** field is used to specify the user name for this client PC, as set up on the server.
- The **Password** field is used to specify the user's password for this client PC, as set up on the server.
- When the **Remember Password** checkbox is checked, the user's password is saved on the client PC and is automatically used for future logins.
- When the **Show this dialog on startup** checkbox is checked, the Network settings dialog is shown on startup to allow the user to switch to a different server or user account.

To configure the network settings:

1. Specify the type of connection to be used by setting the appropriate Connection Type radiobutton.
2. Enter the network name of the server PC in the Remote Host field and press **<Tab>** Omit any leading or trailing backslash characters.
3. The IP Address of the server PC will then be shown in the Remote Address field and the cursor will move to the Main port field.
4. Alternatively, the IP Address can be entered in the Remote Address field, followed by **<Tab>**. The network name of the server PC will then be shown in the Remote Host field and the cursor will move to the Main port field.
5. Enter the number of the port on the server that is used for normal data connections and press **<Tab>**.
6. Enter the number of the administration port in the Admin port field and press **<Tab>**.
7. Enter the name of this user, as set up on the server, in the User Name field and press **<Tab>**.
8. Enter the password, as set up on the server, in the Password field.

9. If desired, the Remember Password box can be checked. This will allow the user to access a list of available companies without having to login to the server. Otherwise the user will have to provide a password each time Artemis Accounts is started before being presented with a list of available companies. (See Security Considerations)
10. If the Show this dialog on startup box is checked, this screen will be shown each time Artemis Accounts is started.
11. If the encryption Password has been changed on the server, this will also have to be changed on the Connection Options page of this dialog, which is shown below.
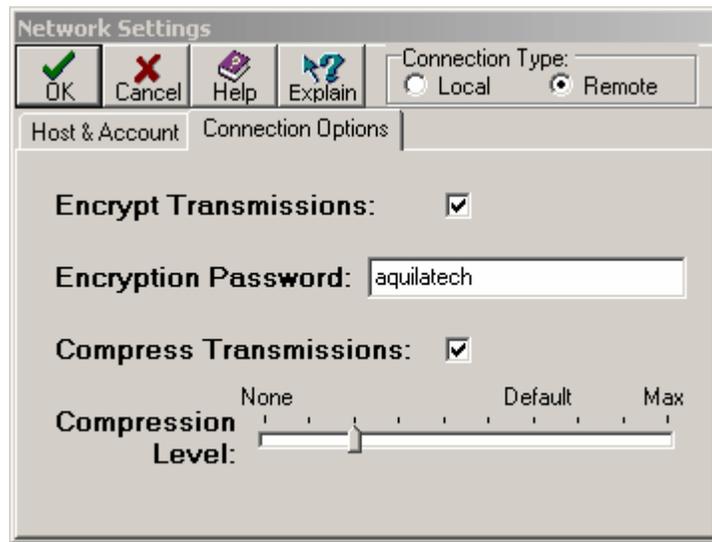
- When the **Encrypt Transmissions** checkbox is checked, all normal data connections are encrypted (recommended).
- The **Encryption Password** field is used to specify the password that is used to encrypt communications between the server and Artemis Accounts client applications.
- When the **Compress Transmissions** checkbox is checked, all communications with the server are compressed to reduce network traffic.
- The **Compression Level** slider control is used to specify the level of compression to use for all communications between the remote session and a database server.

After you have configured the network settings Artemis Accounts will shut down so that you can re-start with the revised network settings.

This process must be repeated on each client PC that has Artemis Accounts installed.

1.3   **Security Considerations**

As mentioned in the Basic Concepts topic, a networked application can be open to intrusion or eavesdropping if insufficient attention is paid to setting up safeguards.

When Artemis Accounts is initially installed, the User Name and Password for the server and the encryption password for client/server communications are the same on all systems. If these are left unchanged, anybody with a copy of Artemis Accounts and the ability to access your network can login to the server and access your company files. This

is particularly important if you use unencrypted wireless networks or use a public network to link geographically separate locations.

If you are using a standard CAT5 local area network which is installed at a single location, eavesdropping and intrusion is less of an issue but it is still good practice to secure your system against unauthorised access by internal users.

There are some basic steps which you can take to secure your company data:

- Change the Admin user password, or create a new administration user and delete the default Admin user.
  This will make it almost impossible (nothing is impossible) for an unauthorised "user" to login to the server.
- Give administrative access only to those users who absolutely need it.
  This prevents unauthorised users from having the ability to access all companies.
- Remove users from the server when they no longer need to access the accounts or leave your employment.
  This reduces the chance of an unauthorised user guessing a password or a disgruntled ex-employee accessing the system.
- Only authorise users for those companies that they need to access.
  Users are only presented with a list of companies that they have been authorised to access.
- Change admin and user passwords on a regular basis.
  This is standard precaution on any multi-user system.
- Discourage users from using the "remember password" option on the Network Settings screen.
  This should be considered if user PCs are not otherwise password protected on a user-by-user basis.
- Review the server log files for unusual or suspicious login requests.
  This may only need to be done occasionally if you suspect intrusion or unauthorised access.

For even more security, the following steps can be considered:

- Change the encryption password on the server and all client applications.
  This makes life very difficult for potential eavesdroppers. Most eavesdroppers are casual and will move on if it requires any effort.
- Change the Authorised Addresses on the server so that only known addresses of client PCs will be allowed access.
  This will cause requests from unknown addresses to be rejected. However, if you have mobile users who connect over the internet, this will make it impossible for them to connect unless they have a dedicated IP address, i.e. broadband.

If you feel that you need even more security, there is a capability to encrypt the company databases. However, you will need to contact us if you need this option.

Remember: Network security is like the security system in a building. It doesn't make it impossible for thieves to enter, it just encourages them to look for an easier target.

Part

2

Database Server

2.1   Database Server Interface

When the Artemis DBISAM Database Server is installed, a shortcut is placed in the startup folder so that the server is started whever the system boots up. The server application can be accessed from the system tray at the bottom of the screen, where it is represented by the following icons.

Server is running   Server is stopped

Right-clicking this icon causes a pop-up menu to be displayed. If the server is running, it can be stopped or, if it is already stopped, it can be restarted from this menu. The server can also be shut down completely by choosing **Exit** from the menu.

Double clicking the system tray icon, or choosing **Open** from the popup menu causes the Server Sessions page of the server interface to be displayed, as shown below.
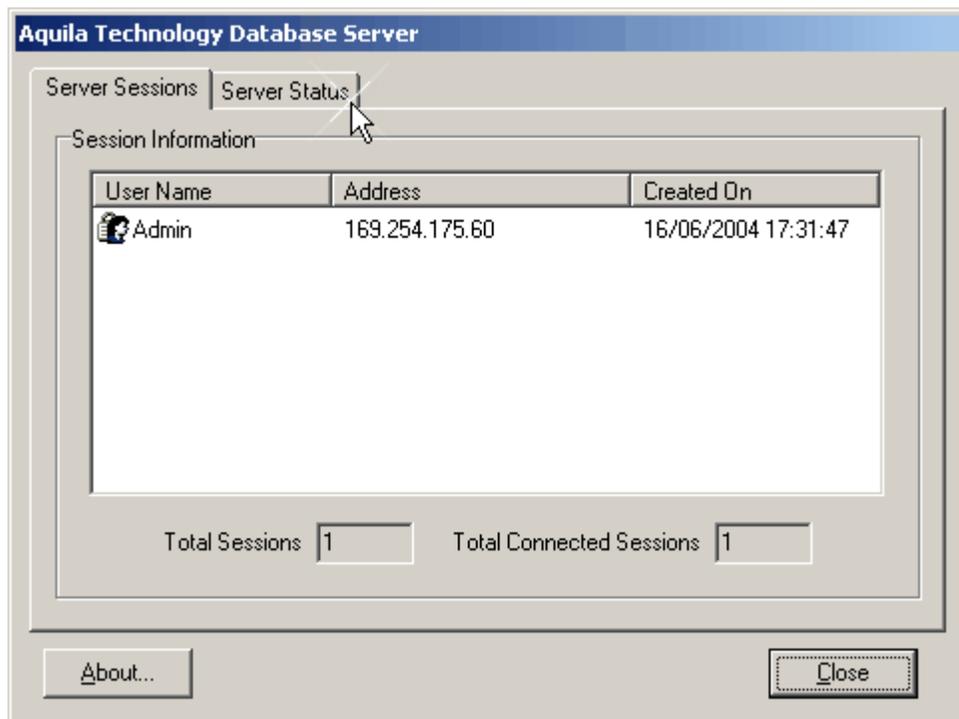
- The main panel lists all sessions on the server. If a session is connected then the Address column will show a valid IP Address. If a session is not connected then the Address column will show "Not Connected". The User Name column shows the user that created the session and the Created On column shows the date and time that the session was created. Administrative connections are not shown in this list.
- The **Total Sessions** field is read-only and shows the total number of sessions present on the server.
- The **Total Connected Sessions** field is read-only and shows the total number of connected sessions present on the server.
- Clicking the **About** button displays version information for the server.

- Clicking the **Close** button closes the server window. Closing the server window does not stop the server or the server process itself. If the server process is running as a normal application, you must use the system tray popup menu by right-clicking on the server icon and choose the Exit item from the popup menu to stop the server process. If the server process is running as a Windows NT/2000/XP service, you must use the NET STOP or Windows Control Panel (Services) to stop the server process.

The Server Status page gives additional information about the amount of time that the server has been running, memory usage, etc.

- The **Engine** field is read-only and shows the DBISAM engine version that the server is using.
- The **Memory Usage** field is read-only and shows the total memory allocated (in megabytes) on the server for all sessions and the server process itself.
- The **Up Time** field is read-only and shows the total time that the server has been running and accepting inbound connections.
- The **Main Address** field is read-only and shows the main port that the server is using for accepting data connections.
- The **Admin Address** field is read-only and shows the adminstration port that the server is using for accepting administrative connections.
- Clicking the **Start** button starts the server and allows it to accept inbound connections. Note that this only applies to normal data connections. Administrative connections are always accepted once the server process has been started. You can also use the system tray popup menu to start the server by right-clicking on the server icon and choose the Start item from the popup menu to start the server.
- Clicking the **Stop** button stops the server and prevents it from accepting inbound connections. Any connected sessions will be disconnected automatically when the server is stopped. Note that this only applies to normal data connections. Administrative connections are always accepted once the server process has been started. You can also use the system tray popup menu to stop the server by right-clicking on the server icon and choose the Stop item from the popup menu to stop the server.

The only actions that can be taken from the server interface are to start and stop the server. Closing the server interface does not shut down the server, it simply hides the interface.

Part

3

Server Administration Utility

3.1 Before You Begin

3.1.1 Server Administration Utility - Overview

The Server Administration Utility is like a control panel for the server. It allows you to set up certain server parameters and register users and companies on the server. The following image shows where this utility fits in the overall system configuration.
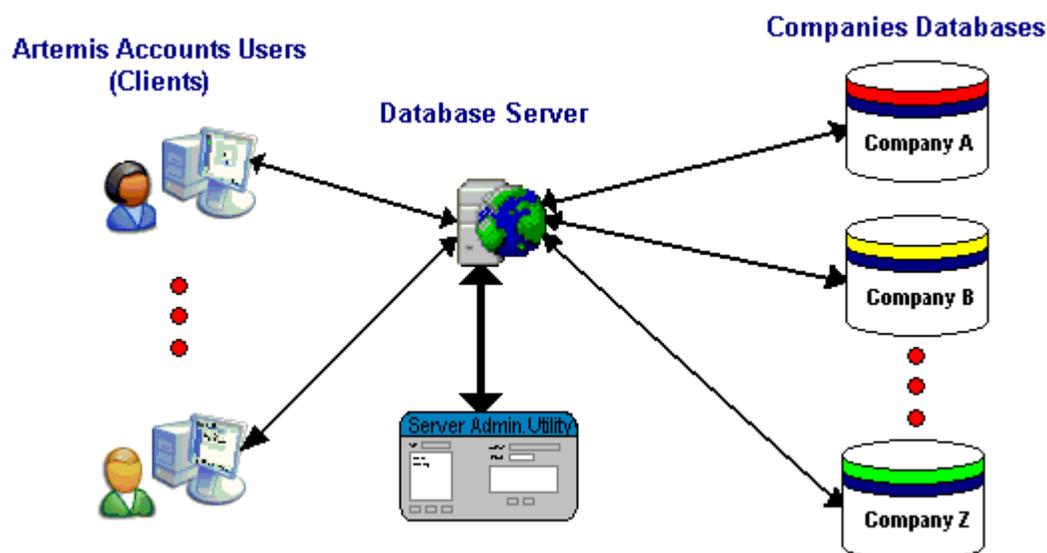
As the Server Administration Utility is a special type of client application, the server must be running before it can log in and perform administrative tasks.

One type of client application that is not shown in the image above, is the Database System Utility, which can be used to access, edit, maintain and repair tables in the companies databases.

What the Server Administration Utility Cannot Do:

Some basic server configuration parameters can only be changed by editing the DBSRVR.INI file because these must already be set correctly before the Server Administration Utility can log in to the server.

The contents of the DBSRVR.INI file are as follows (key descriptions in *italics*):

; DBISAM Database Server Parameters INI File

[Server Parameters]
Server Name=DBSRVR
Server Description=Aquila Technology Database Server
Server Address= *(The addresses on which the server accepts data connections - blank = all addresses)*

Server Port=12005 *(The port on which the server accepts data connections)*
Server Thread Cache Size=10
Administration Address= *(The addresses on which the server accepts administrative connections - blank = all addresses)*
Administration Port=12006 *(The port on which the server accepts administrative connections)*
Administration Thread Cache Size=1
Configuration File=dbsrvr
Configuration Password=aquilatech *(the password that is used to encrypt the configuration file)*
Encrypted Only=1 *(1 = all connections are encrypted, 0 = only administrative connections are encrypted)*
Encryption Password=aquilatech *(the password that is used to encrypt connections)*
No User Interface=0 *(0 = Server interface can be displayed, 1 = Server interface can not be displayed)*
Append To Log=0 *(0 = Over-write the server log file, 1 = Append to the server log file)*

3.1.2　Administrative Access

The DBISAM Database Server, which is used in the Client/Server version of Artemis Accounts, uses two ports, one for regular data connections (default 12005) and one for administrative connections (default 12006). The Server Administration Utility uses the administrative port only. Before attempting to login to a given server using the Server Administration Utility you should make sure that you have the correct port set in the Options dialog, otherwise you will get errors when the utility attempts to make administrative calls on a regular data port.

Also, the Server Administration Utility requires that you log in as an administrator or you will not have permission to perform any of the functions provided by the utility. This will be evident from errors that are triggered when the utility attempts to retrieve server information after logging in.

3.2　Using the Utility

3.2.1　Configuring Server Options

To configure the server options for the Server Administration Utility please complete the following steps:

1.　Select the **File** option from the main menu.

2.　Select the **Options...** option from the File menu.

3.　This will bring forward the Options dialog, as shown on the next page.

- The **Host Name** field is used to specify the host name for a database server that you wish to connect to. The host name and the IP address are mutually-exclusive and you only need to specify one or the other.
- The **IP Address** field is used to specify the IP address for a database server that you wish to connect to. The host name and the IP address are mutually-exclusive and you only need to specify one or the other.
- The **Port** field is used to specify the administration port for a database server that you wish to connect to. The administration port and service are mutually-exclusive and you only need to specify one or the other. The default administration port for a database server is 12006.
- Thie **Sevice** field is used to specify the administration service for a database server that you wish to connect to. However, this is not used with Artemis Accounts, and you should use the administration port setting.
- The **Encryption Password** field is used to specify the password that will be used to encrypt communications between the server and all client applications. Client applications are: Artemis Accounts; the Database System Utility; and the Server Administration Utility.
- The **Compression** slider control is used to specify the level of compression to use for all communications between the remote session and a database server.
- Setting the **Enable Tracing** check box enables the tracing of all messages sent to a database server. This can be helpful with performance tuning and discovering the amount of data sent to and received from a database server for a given operation.
- The **View Trace Log** button is used to bring forward the trace log dialog that lists all messages sent to a database server that have been traced since tracing was enabled.

4.   Enter the network name of the server in the **Host Name** field <u>OR</u> enter the IP Address of the server in the **IP Address** field.

5.   Enter the port number that is used for administrative connections in the **Port** field.

6.   If the default encryption password has been changed, enter the new password in the **Encryption Password** field. (See note below)

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7. Set the degree to which data transfers between the server and client should be compressed by moving the slider in the **Compression** trackbar. Using compression can reduce network traffic and, in a busy network, will result in better performance.

8. The **Enable Tracing** control is used for trouble-shooting and tuning purposes and need not be changed at this time.

9. Click the **Ok** button to save your settings.

Note: If you change the Encryption Password, this change must also be made in the Database System Utility, the server startup file (DBSRVR.INI), and in the Network Settings screen in Artemis Accounts.

3.2.2   Logging in to a Server

To login to the server defined by the server options in the Options dialog, please complete the following steps:

1. Select the **File** option from the main menu.

2. Select the **Login...** option from the File menu.

3. This will bring forward the login dialog where you may then login to the server using the administrator user name and password.

If for any reason the server options are set improperly, you will receive a connection error after a short period of time when selecting the Login... menu option. If that is the case you should review the server options defined. You should pay close attention to the port option and make sure that it is set to the administrator port defined for the server that you wish to connect to.

After logging in to a server the main screen of the utility will be populated with 6 pages containing the server information. You may then right-click on any control to receive "What's This" help on that particular area of interest. Each of these pages is detailed in the following sections.

3.2.2.1   Server Status Information

The Status page of the Server Administration Utility provides information about the sessions that have connected to the server, the amount of memory that is being used by the server and the live sessions, and the addresses and ports that are configured for normal and administrative access, as shown on the next page.

- The main panel lists all sessions on the server. If a session is connected then the **Address** column will show a valid IP Address. If a session is not connected then the Address column will show "Not Connected". The **User Name** column shows the user that created the session and the **Created On** column shows the date and time that the session was created. The **Last Connected** column indicates the last date and time that the session was connected. Administrative connections are not shown in this list.
- The **Total Sessions** field is read-only and shows the total number of sessions present on the server.
- Clicking the **Remove** button disconnects (if connected) and completely removes the currently selected session in the list of sessions. Removing a session will release any locks acquired by the session and close all databases and tables opened by the session.

- The **Total Connected Sessions** field is read-only and shows the total number of connected sessions present on the server.
- Clicking the **Disconnect** button disconnects the currently selected session in the list of sessions. Disconnecting a session will terminate the connection for a session, but it will not release any locks acquired by the session or close all databases and tables opened by the session. A disconnected session still maintains its complete state so that the client application may still re-connect to the server and pick up where it left off with the session.
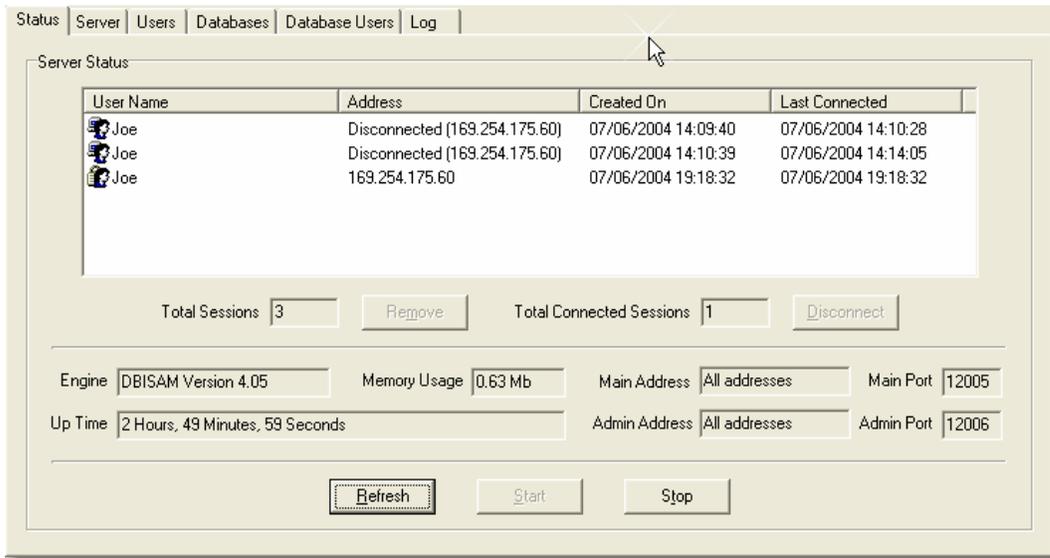
- The **Engine** field is read-only and shows the DBISAM engine version that the server is using.
- The **Memory Usage** field is read-only and shows the total memory allocated (in megabytes) on the server for all sessions and the server process itself.
- The **Up Time** field is read-only and shows the total time that the server has been running and accepting inbound connections.
  The **Main Address** field is read-only and shows the main address(es) that the server is using for accepting data connections.
- The **Main Port** field is read-only and shows the main port that the server is using for accepting data connections.
  The **Admin Address** field is read-only and shows the administration address(es) that the server is using for accepting administrative connections.
- The **Admin Port** field is read-only and shows the adminstration port that the server is using for accepting administrative connections.
- Clicking the **Refresh** button to refreshes the server status information, including the list of sessions present on the server.
- Clicking the **Start** button starts the server and allows it to accept inbound connections. Note that this only applies to normal data connections. Administrative connections are always accepted once the server process has been started.
- Clicking the **Stop** button stops the server and prevents it from accepting inbound connections. Any connected sessions will be disconnected automatically when the server is stopped. Note that this only applies to normal data connections. Administrative connections are always accepted once the server process has been started.

Most of the information on this page is read-only. However, some important actions can be taken on this page:

- If the Remove button is clicked, the selected session in the listing will be disconnected and logged out from the server. This can be used to remove a session that has terminated incorrectly and is still locking a database table.

- The Disconnect button can be used to simply disconnect the selected session in the listing. The session remains active and locks are not released. If the total number of sessions is over the allowed limit, this can be used to free up a 'slot' and allow an additional session to connect.
- The Start button is used to restart the server if it is stopped.
- The Stop button disconnects all sessions and prevents any new sessions from connecting.
- The Refresh button simply refreshed the sessions listing.

Remember: A session represents a client connection.

3.2.2.2   Server Parameters

The Server page of the Server Administration Utility allows you to set time limits on inactive sessions and allow/block access to particular IP addresses.

- When editing the server information, you can click on the **Deny New Connections** check box to specify that the server should not accept any new connections. This change will only take effect if the server information is then saved. When only viewing the server information, this check box will indicate whether the server is accepting any new connections. A client that re-connects to an existing disconnected session is not considered a new connection.

- When editing the server information, you can modify the **Max # of Connections** field to specify the maximum number of connected sessions that can be present on the server at any given time. This change will only take effect if the server information is then saved. When only viewing the server information, this field will indicate the maximum number of connected sessions that the server can accept at any given time.

The number of sessions present on the server may be greater than the maximum number of connections since sessions can exist on the server but still not actually be connected.

The default maximum number of connections is 100, although this figure may be lower for certain versions of Artemis Accounts II.

- When editing the server information, you can modify the **Connection Timeout** field to specify the connection timeout for all connected sessions on the server. This change will only take effect if the server information is then saved. When only viewing the server information, this field will indicate the connection timeout for all connected sessions on the server.

  The connection timeout is defined as the number of seconds that the server will allow to elapse with no client activity before the connection is dropped for a given session.

  Please be sure to not set this value too low since this can cause unneeded traffic as client applications are forced to constantly re-connect for a given session that has been disconnected by the server.

  The default connection timeout is 300 seconds, or 5 minutes, and the minimum acceptable connection timeout is 60 seconds.

- When editing the server information, you can modify the **Dead Session Cleanup Interval** field to specify the dead session cleanup interval for all disconnected sessions on the server. This change will only take effect if the server information is then saved. When only viewing the server information, this field will indicate the dead session cleanup interval for all disconnected sessions on the server.

  A dead session is defined as a session that has been disconnected, either by the server or client, and has not reconnected and most likely will not re-connect within the dead session expiration time. The dead session cleanup interval defines how often (in seconds) the server will check for dead sessions on the server.

  Please be sure to not set this value too low since this can cause unneeded processing on the server as it constantly checks for dead sessions.

  The default dead session cleanup interval is 30 seconds.

- When editing the server information, you can modify the **Dead Session Expiration** field to specify the dead session expiration time for all disconnected sessions on the server. This change will only take effect if the server information is then saved. When only viewing the server information, this field will indicate the dead session expiration time for all disconnected sessions on the server.

  A dead session is defined as a session that has been disconnected, either by the server or client, and has not reconnected and most likely will not re-connect within the dead session expiration setting. The dead session expiration time defines how long (in seconds) the server will keep a disconnected session on the server before finally declaring it officially dead and removing it permanently. The dead session expiration time is checked according to the dead session cleanup interval, and any disconnected sessions over the maximum allowed time are removed permanently.

  Please be sure to not set this value too low (but not 0, see below) since this can cause disconnected sessions to be considered as dead when they are simply inactive for a period of time.

  The default dead session expiration time is 43200 seconds, or 12 hours. If you wish to not have disconnected sessions expire at all and be considered as dead, specify 0 for this value.

- When editing the server information, you can modify the **Maximum # of Dead Sessions** field to specify the maximum number of dead sessions allowed at any given time on the server. This change will only take effect if the server information is then saved. When only viewing the server information, this field will indicate the maximum number of dead sessions allowed at any given time on the server.

  A dead session is defined as a session that has been disconnected, either by the server or client, and has not reconnected and most likely will not re-connect within the dead session expiration setting. The maximum number of dead sessions is checked according to the dead session cleanup interval, and any disconnected sessions over the maximum allowed are removed permanently. Please be sure to not set this value too low since this can cause disconnected sessions to be considered as dead when there is simply a case of a lot of disconnected sessions at one given time.

  The default maximum number of dead sessions is 64.

- When editing the server information, you can modify the **Temp Files Directory** field to specify where any temporary files created by the server will be stored. This change will only take effect if the server information is then saved. When only viewing the server information, this field will indicate where any temporary files created by the server will be stored.

  Please be sure to use a directory specification that the server process has read/write access to. Using a read-only directory specification will cause errors when the server attempts to create temporary files during the processing of queries and other batch operations.

  The default temporary files directory is the Windows global temporary directory, which is usually either c:\windows\temp or c:\temp.

- When editing the server information, you can modify the **Authorised Addresses** list to specify all IP addresses that are allowed to access this server. You may use the asterisk (*) wildcard character in specifying any given IP address, and you may specify as many IP addresses as you wish. This change will only take effect if the server information is then saved. When only viewing the server information, this list will indicate all IP addresses that are allowed to access this server.

  This list of IP addresses only applies to normal data connections, and does not apply to administrative connections.

  The default entry for the authorized addresses is *, or all IP addresses.

- When editing the server information, you can modify the **Blocked Addresses** list to specify all IP addresses that are not allowed to access this server. You may use the asterisk (*) wildcard character in specifying any given IP address, and you may specify as many IP addresses as you wish. This change will only take effect if the server information is then saved. When only viewing the server information, this list will indicate all IP addresses that not are allowed to access this server.

  This list of IP addresses only applies to normal data connections, and does not apply to administrative connections.

  By default, there are no entries in this list.

3.2.2.3 User Management

In order to allow users to access the companies in the database two steps are required:

1. Add users to the User Listing.
2. Authorise users to access specific companies.

The first of these steps is managed on the Users page of the Server Administration Utility which is shown on the next page.

- The **Available Users** panel lists all users currently defined for the server. You can use the arrow keys to move up and down in the list or use the mouse to select a given user. Information about the currently-selected user is displayed on the right-hand side of the page.
- The **Add** button is used to add a new user.
- The **Edit** button is used to edit the information for the currently-selected user.
- Clicking the **Delete** button deletes the currently-selected user. You should use extreme caution when using this option since deleting the only user defined as an administrator will prevent anyone from logging in to the server for administrative purposes.
- When adding a user, you can modify the **User Name** field to specify the user name. This change will only take effect if the user information is then saved. When only viewing the user information for the currently-selected user, this field will indicate the user's name.
- When adding or editing a user, you can modify the **Password** field to specify the user password. This change will only take effect if the user information is then saved. When only viewing the user information for the currently-selected user, this field will show asterisks (*) in place of the user password.

- When adding or editing a user, you can modify the **Description** field to specify the description of the user. This change will only take effect if the user information is then saved. When only viewing the user information for the currently-selected user, this field will show the description of the user.
- When adding or editing a user, you can click on the **Administrator** check box to specify that the user is an administrator. This change will only take effect if the user information is then saved. When only viewing the user information for the currently-selected user, this check box will indicate whether the user is an administrator.
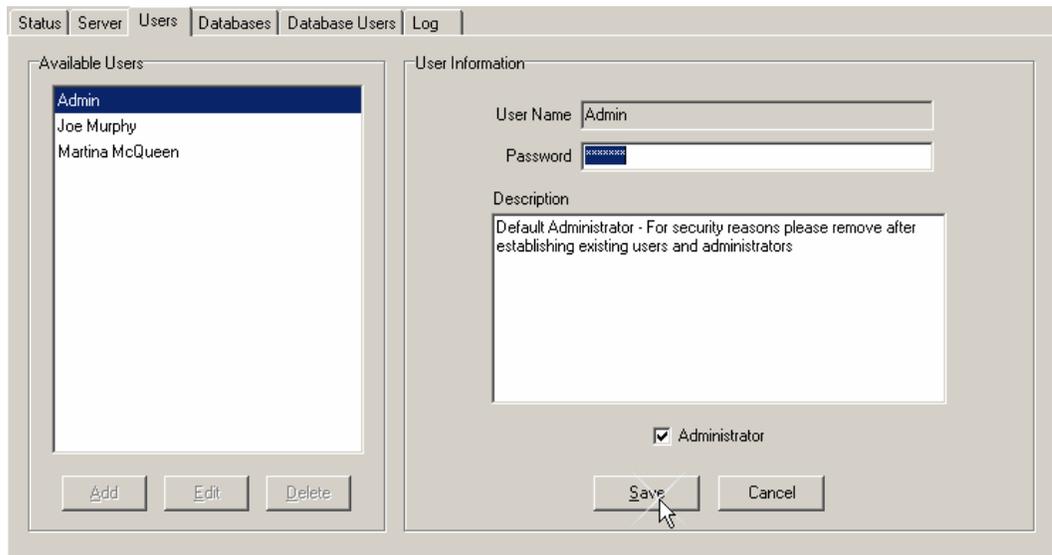
To add a user:

1. Click the **Add** button.
2. Enter the name that the user will use to connect to the server in the User Name field. This is what will appear in the session listing when the user logs in.
3. Enter the user's password in the Password field.
4. Additional free-format information about this user can be entered in the Description panel, if desired.
5. If this user is to be given administration privileges, the Administrator checkbox should be checked. This is necessary if the user is allowed to create and delete companies and make local backups. Administration privileges should only be given where absolutely necessary.
6. Click the **Save** button to save the user's details.

The **Edit** button allows all user details, except the User Name to be changed.

The **Delete** button is used to completely remove a user from the server.

Note that the User Name and Password are only used to connect to the server. The companies that the user will be allowed to open are defined in the Database Users page and the operations that a user can perform on any company is defined by the access level that they have for that specific company.

3.2.2.4 Company Databases

Before users can be granted access to the companies in Artemis Accounts, the server must be provided with some basic details, i.e. the names of the companies and the location of the database files for each company. This information is entered on the Databases page of the Server Administration Utility which is shown below.
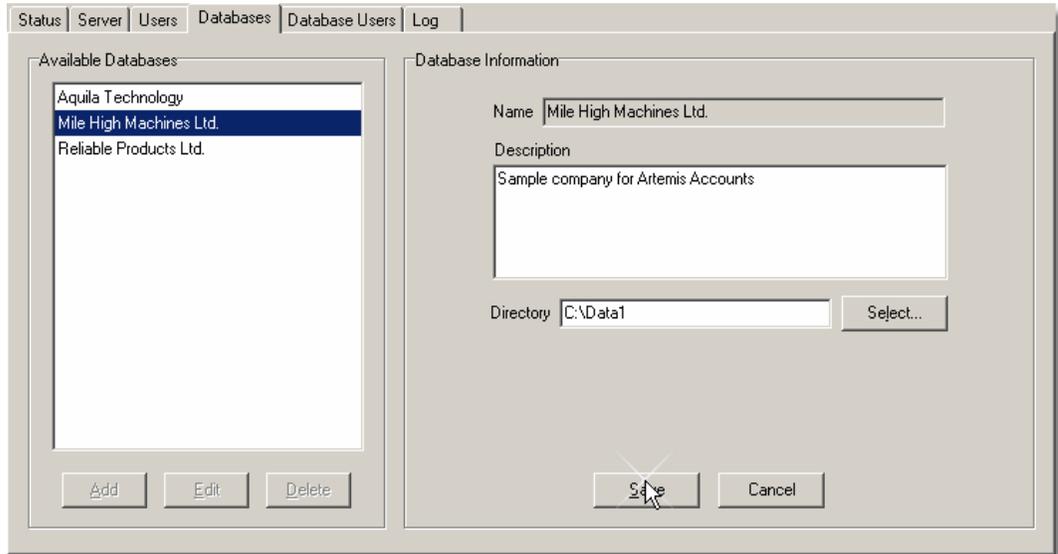
- The **Available Databases** panel lists all databases, i.e. companies, currently defined for the server. You can use the arrow keys to move up and down in the list or use the mouse to select a given database. Information about the currently-selected database is displayed on the right-hand side of the page.
- The **Add** button is used to add a new company.
- The **Edit** button is used to edit the information for the currently-selected company.
- The **Delete** button is used to delete the currently-selected company. You should use extreme caution when using this option since deleting a company can prevent client applications from being able to access data.
- When adding a company, you can modify the **Name** field to specify the company name. This change will only take effect if the database information is then saved. When only viewing the database information for the currently-selected company, this field will indicate the company name.
- When adding or editing a company, you can modify the **Description** field to specify the description of the company. This change will only take effect if the database information is then saved. When only viewing the database information for the currently-selected company, this field will show the description of the company.
- When adding or editing a company, you can click on the **Select** button to specify the directory where the company's database tables are located. This change will only take effect if the database information is then saved. When only viewing the database information for the currently-selected company, the **Directory** field will indicate the directory where the company's database tables are located.

    A company database is synonomous with a single directory. The directory specified may use absolute or relative path names, and may use UNC path naming conventions if so desired. Relative path names must be specified relative to the location of the server executable, and any path specified must be accessible from the server process.

To add a company:

1.   Click the **Add** button.

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2. Enter the name of the company in the Name field. This is what will appear in the list of available companies when the user starts Artemis Accounts.
3. If desired, a description of the company can be entered in the Description panel.
4. The file path to the folder that contains the company database files must be entered in the Directory field. The **Select...** button can be used to browse for the correct folder. If a non-existent folder is specified, it will be created automatically.
5. Click the **Save** button to save the company details.

The **Edit** button allows all company details, except the Name, to be changed.

The **Delete** button is used to remove a company from the server. This does not actually delete the company files, it simply removes the "pointer" to these files from the server.

Note that the company files need not exist before a company can be added to the server, i.e. an empty folder can be specified if you intend to copy files manually or use the Artemis Database Conversion Utility to move files from a single-user installation.

The Server Administration Utility does not create the files for a company, it simply associates a folder/directory with a company name.

3.2.2.5 Authorising Users

Once companies and users have been added to the server, individual users must be given access to the companies that they need to work with. This is done on the Databases Users page of the Server Administration Utility which is shown below.
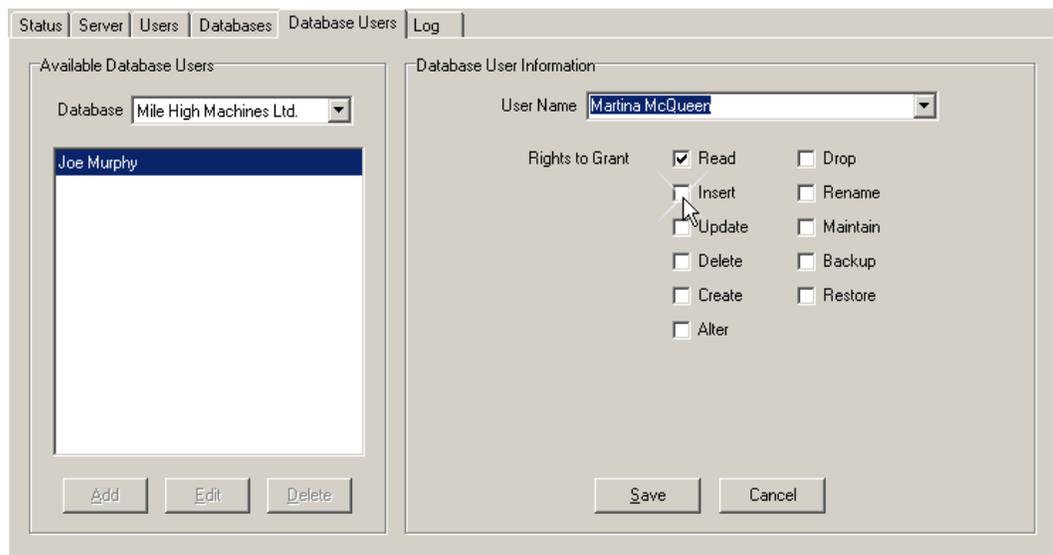
*   The **Database** combo box to select the company from which to list all defined database users. The list of database users is displayed in the list box below this combo box.
*   The **Available Database Users** panel lists all users currently assigned permissions for the currently-selected company on the server. You can use the arrow keys to move up and down in the list or use the mouse to select a given database user. Information about the currently-selected database user is displayed on the right-hand side of the page.

- The **Add** button is used to add a new database user.
- The **Edit** button i used to edit the information for the currently-selected database user.
- The **Delete** button is used to delete the currently-selected database user. You should use extreme caution when using this option since deleting a database user can prevent that user from being able to access necessary data.
- When adding a database user, you can select a user from the **User Name** combo box or modify this combo box to specify the user name. This change will only take effect if the database user information is then saved. When only viewing the database user information for the currently-selected database user, this field will indicate the database user's name.
The asterisk (*) wildcard character may be used with the database user name to assign permissions to more than one defined user at a time. For example, specifying "Accounting*" will assign permissions for all users defined with a user name beginning with "Accounting".
- The **Rights to Grant** checkboxes allow the following access rights to be granted to a user:
  - Read - includes accessing the database, opening tables, and reading records.
  - Insert - includes adding records, either programmatically or via SQL INSERT statements.
  - Update - includes editing records, either programmatically or via SQL UPDATE statements.
  - Delete - includes deleting records, either programmatically or via SQL DELETE statements.
  - Create - includes creating tables or indexes, either programmatically or via SQL CREATE TABLE or CREATE INDEX statements.
  - Alter - includes altering the structure of tables, either programmatically or via SQL ALTER TABLE statements.
  - Drop - includes removing tables or indexes, either programmatically or via SQL DROP TABLE or DROP INDEX statements.
  - Rename - includes renaming tables, either programmatically or via the SQL RENAME TABLE statement.
  - Maintain - includes repairing, verifying, or optimizing tables, either programmatically or via SQL REPAIR TABLE, VERIFY TABLE, or OPTIMIZE TABLE statements.
  - Backup - includes backing up tables in a database programmatically.
  - Restore - includes restoring tables to a database programmatically.

To authorise user access for a company:

1. Select the company to which the user is to be granted access from the Database dropdown list. A list of existing users of that company will then be displayed in the panel on the left side of the page.
2. Click the **Add** button.
3. Select the name of the user from the User Name dropdown list.
4. If a user is only to be allowed to view transactions and records, the only access rights that are needed are Read. However, if a user is to be allowed to add and edit transactions and records, he/she must have Read, Insert, Update, Delete, Create, and Drop rights. (see note below)
5. Click the Save button to save the user access details.

The **Edit** button allows the access rights for the selected user to be changed.

The **Delete** button is used to remove the selected user from the selected company. The user record is not deleted from the server.

Note: If the Database System Utility (DSU) is distributed to all users, the access rights defined on this page control what operations the user can perform with the DSU. A user with full access rights has the potential to damage a company database.

Users accessing a company database using Artemis Accounts do not have the ability to carry out potentially destructive operations, such as restructuring a database table. However, Artemis does need to create temporary tables and indices for certain functions and needs a basic set of access rights to function.

> For this reason, we recommend that the DSU should not be distributed to users and all users can then be given full access rights on this page.

3.2.2.6 Server History Log

The final page of the Server Administration Utility is used to view a history of all server activity, as shown below.
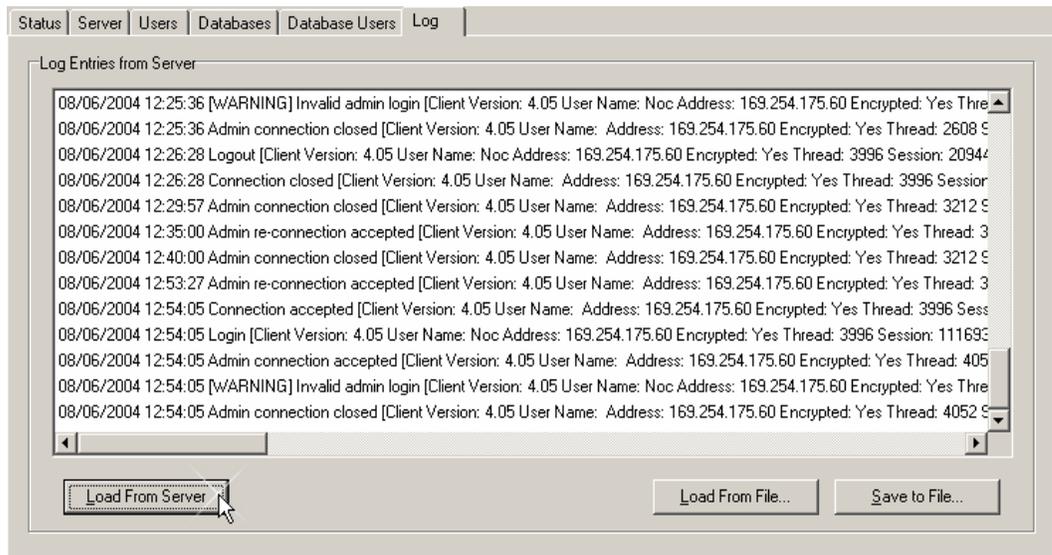
- The main panel lists the entries in the server log. The server logs all connections, logins, and errors to a log file which you can view here.
- The **Load From Server** button is used to load the current contents of the server log into the list of log entries.
- The **Load From File** button is used to load the the list of log entries from a binary file which was previously saved to disk.
- The **Save to File** button is used to save the the list of log entries to either a binary file or a text file on disk for later viewing.
- **Note:** Only the binary file format can be loaded into the Server Administration Utility at a later time for viewing. The text file must be viewed using a text editor like NotePad.

When first displayed, the Log Entries listing is empty. When the **Load From Server** button is clicked, the server activity is retrieved from the server. This may be saved to a text file, or to a binary file, by clicking the **Save to File** button.

Server history which has been saved as a binary file may be re-loaded into the listing by clicking the **Load From File** button.

Note that, as part of the operation of Artemis Accounts, warning messages may be listed. This is normal and not a cause for concern. Artemis attempts to connect to the administration port of the server on startup to determine whether a user has administrative rights. If the user is not an administrator, the server logs this as an "Invalid admin login" and refuses the connection. Artemis then disables the Create Company, Delete Company, Backup Data Files, and Restore Data Files functions and continues loading.

3.2.3   Logging out from a Server

To logout from the server defined by the server options in the Options dialog, please complete the following steps:

1.   Select the **File** option from the main menu.

2.   Select the **Logout...** option from the File menu.

If the Logout... menu option is not present then you are not currently logged in to a server, therefore you cannot logout.

After logging out from a server the main interface of the utility will go blank and you will no longer have access to the server information.

Part

4

Artemis Database Conversion Utility

4.1 Before You Begin

4.1.1 Artemis Database Conversion Utility - Overview

This utility is provided to give users of older single-user versions of Artemis Accounts II the ability to convert and transfer company information from existing installations to a multi-user client/server environment.

This is necessary for a number of reasons:

- The single user version of Artemis used the Borland Database Engine whereas the multi-user version uses the DBISAM database.
- All data for each company is stored in local directories in the single user version and accessed directly by the application. In the multi-user version, all data for each company is stored in a single directory on a server and accessed through a server application.
- Various settings in the single-user version are stored in .ini and .txt files. These settings are maintained in database tables in the multi-user version.

Before using this utility, please note the following points:

1. It is assumed that you have not changed the location of company files or changed directory names.
2. All companies in your existing installation are assumed to be in sub-directories of the Artemis Accounts II folder.

Any changes to the configuration of your existing installation may cause this utility to perform an incomplete conversion.

What does this utility do?

a) It converts all database tables in a source directory from Borland Database format to DBISAM format.
b) It creates DBISAM tables based on the settings in a range of INI, TXT, and RTM files.
c) It places the resulting tables in a folder or database of your choice.

What this utility does not do?

a) It does not set up the database on the server, it only puts files in a folder.
b) It does not change your existing installation, you will still be able to access your single-user installation.
c) It does not over-write Borland Database files, even if you put the newly created files in the original file folder.
d) It does not convert DBISAM tables to the Borland Database format.

Why did we change the database?

While the Borland Database is perfectly capable of running in multi-user mode, it is quite complex to configure and manage on an ongoing basis. We want to keep Artemis as easy to use as possible and we are aware that many smaller businesses do not have the in-house expertise to manage a complex networked application.

Why DBISAM?

Obviously, we could have chosen from a number of databases but many of these would have required a complete re-write of the core application. In addition, some database suppliers have extensive, and expensive, licensing terms. DBISAM is "plug-compatible" with our existing software design and required minimal rewriting of the software. Unlike some multi-user databases, it has a very small "footprint", i.e. it does not take up large amounts of disk space, and it is provided royalty-free which means that we can maintain our existing pricing model.

DBISAM is very simple to install and configure and it handles client/server and peer-to-peer networking using TCP/IP which means that no special network software is required.

Finally, it has a large, and growing, body of users and a support service that surpasses that of most larger companies
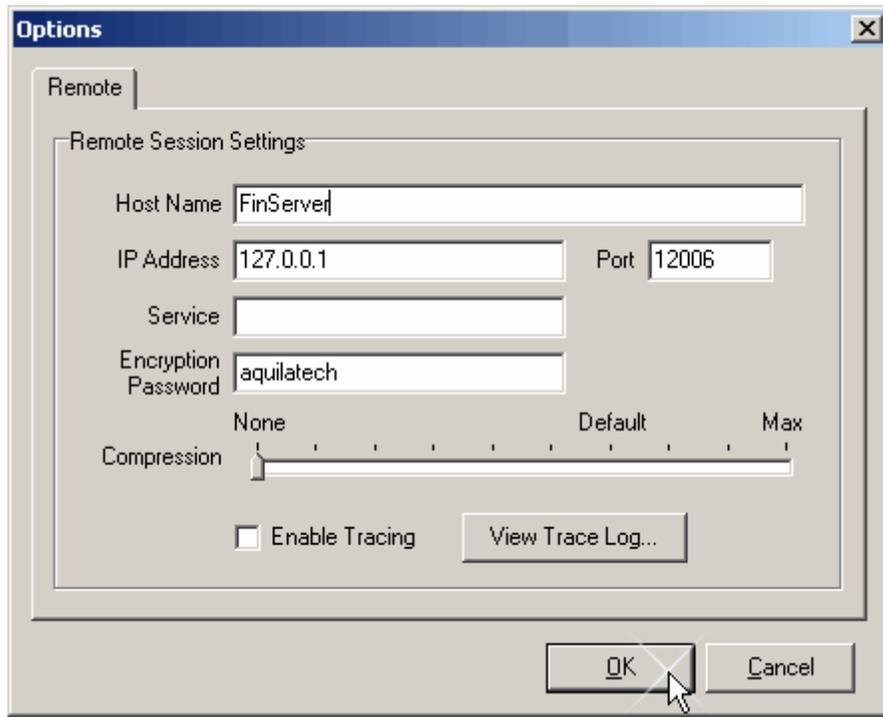
4.2   **Using the Utility**

4.2.1   **Configuring Server Options**

If a new company database has been created on the server for the company that you want to move from the single-user version to the multi-user version of Artemis, you can transfer the files directly to that database. However, before doing so, the Artemis Database Conversion Utility must be set-up to connect to the server. This is done using the Options screen.

To configure the server options for the Artemis Database Conversion Utility please complete the following steps:

1.   Select the **File** option from the main menu.

2.   Select the **Options...** option from the File menu.

3.   This will bring forward the Options dialog, as shown on the next page.

- The **Host Name** field is used to specify the host name for a database server that you wish to connect to. The host name and the IP address are mutually-exclusive and you only need to specify one or the other.
- The **IP Address** field is used to specify the IP address for a database server that you wish to connect to. The host name and the IP address are mutually-exclusive and you only need to specify one or the other.
- The **Port** field is used to specify the main port for a database server that you wish to connect to. The port and service are mutually-exclusive and you only need to specify one or the other. The default port for a database server is 12005.
- Thie **Sevice** field is used to specify the administration service for a database server that you wish to connect to. However, this is not used with Artemis Accounts, and you should use the administration port setting.
- The **Encryption Password** field is used to specify the password that will be used to encrypt communications between the server and all client applications. The Artemis Database Conversion Utility is a client application.
- The **Compression** slider control is used to specify the level of compression to use for all communications between the remote session and a database server.
- Setting the **Enable Tracing** check box enables the tracing of all messages sent to a database server. This can be helpful with performance tuning and discovering the amount of data sent to and received from a database server for a given operation.
- The **View Trace Log** button is used to bring forward the trace log dialog that lists all messages sent to a database server that have been traced since tracing was enabled.

4. Enter the network name of the server in the Host Name field <u>OR</u> enter the IP Address of the server in the IP Address field.

5. Enter the port number that is used for data connections in the Port field.

6. If the default encryption password has been changed, enter the new password in the Encryption Password field. (See note below)

7. Set the degree to which data transfers between the server and client should be compressed by moving the slider in the Compression trackbar. Using compression can reduce network traffic and, in a busy network, will result in better performance.

8. The Enable Tracing control is used for trouble-shooting and tuning purposes and need not be changed at this time.

9. Click the **Ok** button to save your settings.

Note: If you change the Encryption Password, this change must also be made in the Server Administration Utility, the Database System Utility, the server startup file (DBSRVR.INI), and in the Network Settings screen in Artemis Accounts.

4.2.2 Converting & Transferring Files

The process converting files from the Borland Database format to the DBISAM format and transferring the converted files to the multi-user database consists of three simple steps:

• Identify the location of the files, or the company, to be converted.

- Specify the folder, or company database, to which the converted files should be moved.
- Start the conversion process.

These three steps are separated into the three pages which are displayed when you start the Artemis Database Conversion Utility. You may right-click on any control on these pages to receive "What's This" help on that particular area of interest. Each of these pages is detailed in the following sections.

4.2.3   Choosing the Source Files

The Source page of the Artemis Database Conversion Utility is used to choose the directory, or the company, from which files will be copied and converted.
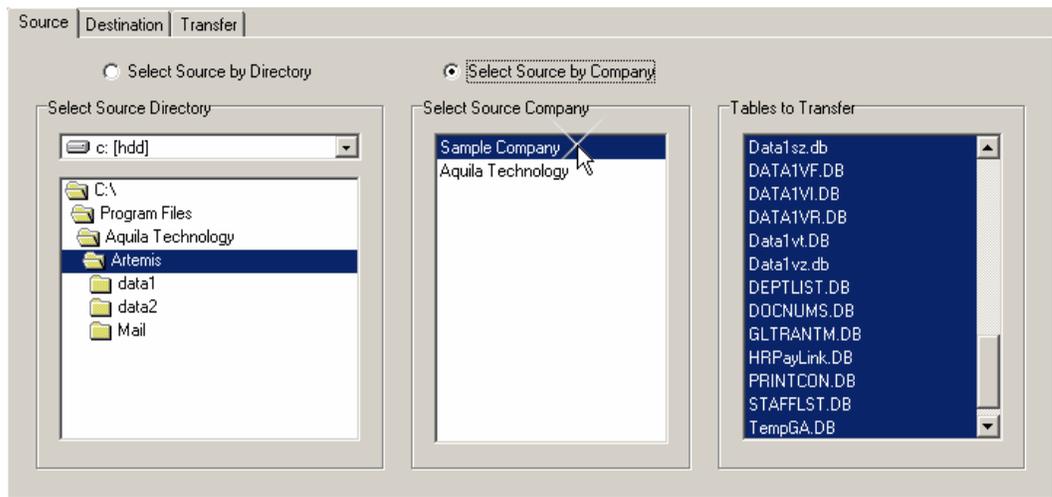
- The radio buttons at the top of this page are used to select whether the Artemis database tables will be transferred from a named company or a specified directory on disk.
- If the source is a directory, the **Select Source Directory** drive combo box and the directory list box are used to select the source directory where the Artemis database tables are stored.
- If the source is a named company, the **Select Source Company** list box is used to select the database tables for a named source company.
- The Tables to Transfer listbox shows the tables that will be converted and transferred. All tables are selected and the selection can not be changed.

To specify the source files by directory:

1. Select the Source tab in the main interface, as shown above.
2. Set the Select Source by Directory radiobutton if it is not already selected.
3. Use the drive combo box and directory list box in the Select Source Directory panel to locate the drive and directory that contains the files to be transferred.
4. The Tables to Transfer panel will now show all Borland Database tables in the selected directory. All files will be shown as selected and this cannot be changed. Otherwise, the conversion process would be incomplete.
5. Click the Destination tab to move to the next page.

To specify the source files by company:

1.   Select the Source tab in the main interface, as shown above.
2.   Set the Select Source by Company radiobutton if it is not already selected.
3.   Use the drive combo box and directory list box in the Select Source Directory panel to locate the drive and directory that contains the relevant company configuration file. As these filesare located, the Select Source Company panel in the center of the screen will show the names of the available companies.
4.   Click the entry for the company you want to convert in the Select Source Company panel.
5.   The Tables to Transfer panel will now show all Borland Database tables for the selected company. All files will be shown as selected. Do not de-select any files or the conversion will be incomplete.
6.   Click the Destination tab to move to the next page.

4.2.4   **Choosing the Destination**

The Destination page of the Artemis Database Conversion Utility is used to choose the directory, or the company database, into which the converted files will be copied.
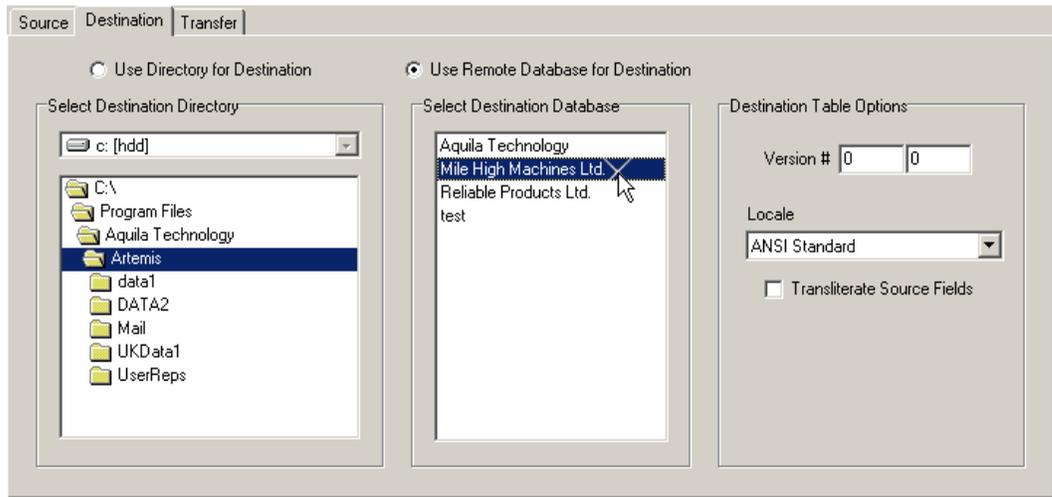
- The radio buttons at the top of this page are used to select whether the new DBISAM tables will be stored in a local destination directory or in a database on the database server. If specifying a database on the database server, the remote session settings in the Options dialog will be used to try to connect to the database server.
- If the destination is a directory, the **Select Destination Directory** drive combo box and the directory list box are used to select the destination directory where the new DBISAM tables will be stored after the transfer process is complete. This can be used if you have not yet created a database for this company on the server.
- If the destination is a remote database, the **Select Destination Database** list box is used to select the destination database on the database server where the new DBISAM tables will be stored after the transfer process is complete.
- The **Version #** fields are used to enter a user-defined major version number and minor version number for the transferred tables. This is not used by Artemis Accounts.
- The **Locale** combo box is used to select the locale of the transferred tables. The locale affects the sort order of the index keys in the transferred tables. The default setting is correct for most circumstances and should only be changed in rare circumstances.

- The **Transliterate Source Fields** check box is used to indicate whether string and memo fields in the source tables should be transliterated before being transferred to the DBISAM format. Some of the BDE database drivers, such as Paradox, store string and memo fields in OEM code page format for tables using international language drivers while DBISAM always stores string and memo fields in the ANSI character set. This setting will ensure that all data in the source tables will be converted from the OEM code page format to the ANSI character set during the transfer so that the data appears correctly in the destination DBISAM tables.

To specify a destination directory:

1. Set the Use Directory for Destination radiobutton if it is not already selected.
2. Use the drive combo box and directory list box in the Select Destination Directory panel to locate the drive and directory to which the converted files should be transferred.
3. Click the Transfer tab to move to the next page.

To specify the destination by company database:

1. Set the Use Remote Database for Destination radiobutton if it is not already selected.
2. A login dialog will then be shown to allow you to login to the server. The settings that you specified in the Options screen will be used to login to the server.
3. After logging in to the server, the Select Destination Database panel will list all of the company databases that you are authorised to access.
4. Click the entry for the company database into which the converted files should be transferred in the Select Destination Database panel.
5. Click the Transfer tab to move to the next page.

4.2.5   Processing the Conversion

When the Destination page of the Artemis Database Conversion Utility is viewed, a confirmation message is displayed, as shown below, giving a summary of the operation that you are about to perform.
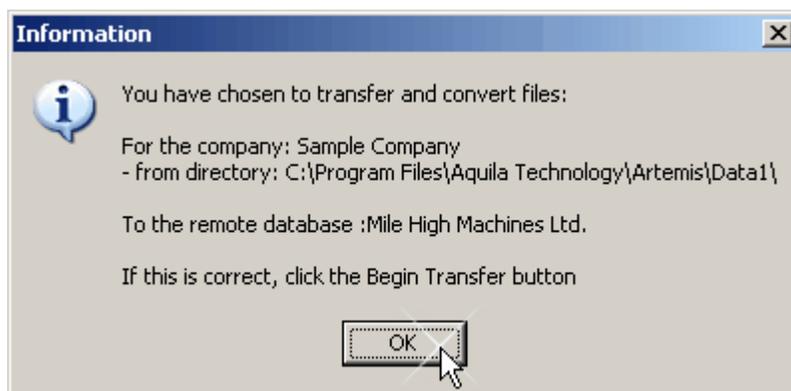
When the **Begin Transfer** button is clicked, the transfer process begins and a log of the activity is displayed, as shown on the next page.
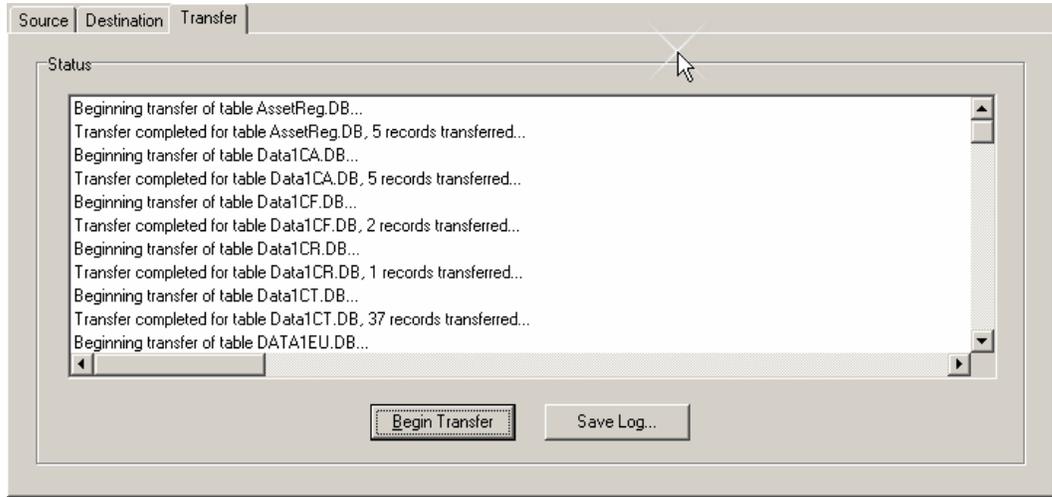
This log may be saved to a text file by clicking the Save Log button.