

Pilot Client/Server and High-Performance Configurations

Pilot stores its data in a relational database on your server. Traditionally, a workstation connects to the database by establishing a file channel to the server for reading and writing data.

Pilot and all previous Pacifica products handle their data this way, as do most other accounting and automation software products.

What is Client/Server?

Client/Server is a database connection and access methodology that offers improved performance in a networked multi-user environment. In this environment, the server is elevated from a simple file server to an intelligent information processor, taking on a larger role in delivering and safeguarding your data.

Client/server systems normally fall into two design philosophies, fat client and thin client. In a fat client system, the client does most of the work and the server does only the data processing, reducing server load. This is closest to the traditional model, offers good server support for many concurrent users but may suffer from high network traffic. This is the approach taken by most developers.

In the fat client model, the client (workstation) may perform essentially the same tasks as before, but in close concert with the server process. In this architecture, the client can order up large blocks of data based on a selection criteria that will deliver the required records faster. This is the design offered by SQL databases such as Oracle and SQL Server.

In the thin client model of client/server design, the client does very little of the work, transferring the burden almost completely to the server. The client becomes just a remote keyboard and viewer. This is the design employed by Remote Desktop (Terminal Server) and Citrix.

In thin client, every user has a large memory and data intensive session running on the server, and this can bog the server down. The data stays on the server and network loading is fairly light. In this environment, most any multi-user app can claim to be client/server.

What is *Pilot* Client/Server?

Pilot client/server employs a server process that is, in effect, a single *Pilot* session running in the server background. The *Pilot* running on your workstation communicates with the server not through file channels, but through high-performance socket connections similar to those used throughout the internet.

The *Pilot* server session is in close communication with all connected users at once, so it is able to manage and deliver data to clients in ways not supported by the fat client and thin client models. This reduces server load dramatically, and reduces network traffic almost to zero. The workstation continues to handle the duties of data management and display, so performance is enhanced.

Based on what the client is doing, the server can anticipate the data required, and deliver it in highly compressed blocks just when the client needs it. The result is performance similar to that seen when you are logged in alone, sitting at the server, no matter how many users are working in the database at the same time.

Installing *Pilot* as a Server

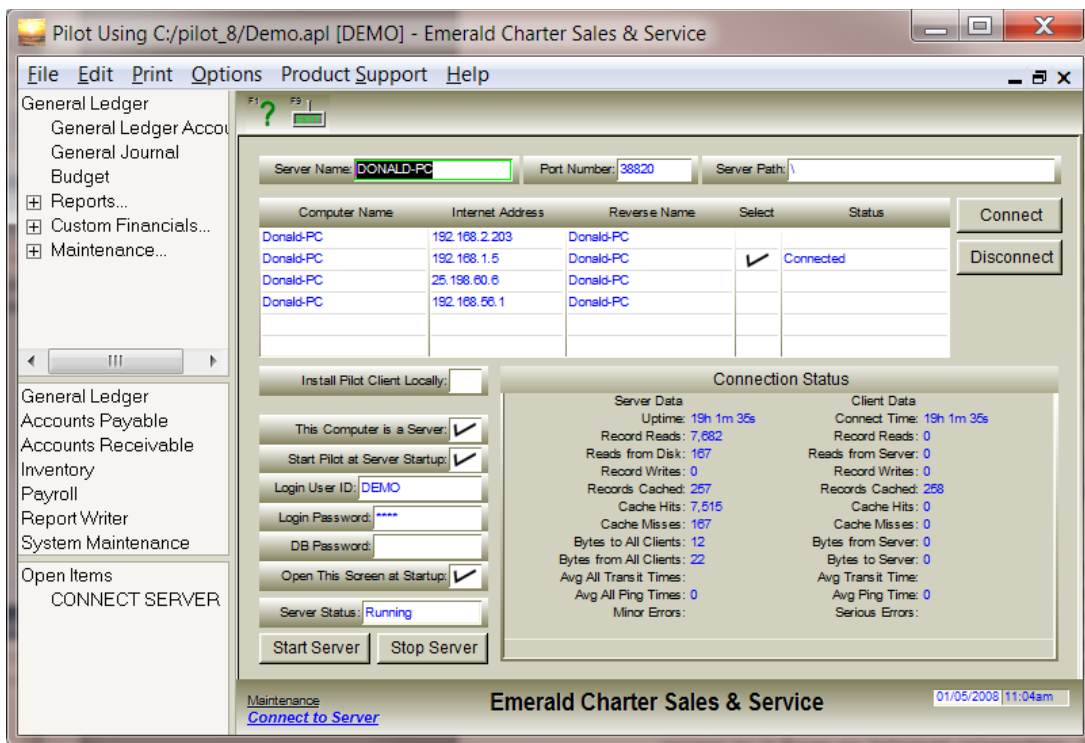
To implement client/server, you must install *Pilot* on your server computer. If you have a current *Pilot* installation, it is probably already installed on your server. For a **live** installation, you should install *Pilot* client/server in the current *Pilot* location, to overwrite the existing *Pilot* version. **!!! NOTE THE FOLLOWING !!!**

If you are testing and evaluating *Pilot* client/server, do your testing in a completely separate test area, with test copies of your database. **Do not overwrite** the live *Pilot* version on your server. Create a separate folder and install *Pilot* client/server there. Create logins that point to a database in the test folder, not your live database. You will need to obtain a separate *Pilot* license registration for the client/server test folder.

To realize the performance benefits of *Pilot* client/server, your database(s) should be located on the server computer or on a file server connected to the server through a very fast local network connection.

Be aware that the client/server capabilities of *Pilot* don't need to be enabled in order to use this version of *Pilot*. If the This Computer Is a Server checkbox is left unchecked on the server, *Pilot* behaves similarly to previous versions.

To this point, the installation is no different from server installs of previous *Pilot* versions.



Configuring the *Pilot* Server

Setup of the *Pilot* server and connecting clients to it is a simple and straightforward procedure. In general, you will need to perform the following steps to configure a *Pilot* client/server network.

1. Install and register a *Pilot* server. Log in at the server as DEMO.
2. Open the *Options->Connect to Pilot Data Server* screen.

3. Click the This Computer is a Server checkbox. Don't type a Server Name. In a moment, a Server Name, Port Number and one or more IP addresses will appear. This will be the Windows computer name of the server computer.
4. Click the Start Server button in the lower left. The Server Status should show "Running".
5. Click the Start Pilot at Server Startup checkbox. If you want this screen to open on the server automatically, fill in the next four fields.
6. Find the Select column next to the Internet Address column. Choose the local network IP address that clients will connect to, and place a checkmark in the Select column.
7. Click the Connect button in the upper right. Information in the Connection Status window should begin to update.

The server is now installed and running, ready to accept client connections.

If you are offered multiple IP addresses during the server setup, and you don't know which to choose, it may be helpful to use IPCONFIG to obtain more information about them. Open a command prompt window (DOS window) and type IPCONFIG. You will see information about each address.

Connecting *Pilot* Clients to the Server

In order for a client to connect to the server, the server must be visible and running at the IP address you selected on the server. On local-area networks, the server and client will usually use a local IP address, starting with 192.168.nnn.nnn. The default settings for firewalls and anti-virus software will generally allow data to pass freely across local-area networks, so no firewall setting need to be changed.

If you are connecting a client at a remote location over a VPN (virtual private network), the VPN should also have a local IP address ready to pass through the firewalls of your network.

If you are connecting a remote client across the internet, or if the server is located out on the internet, you must establish a fixed worldwide address for the server. If your ISP (internet service provider) provides a fixed address for your internet connection, that will be the address of your gateway router. If your internet connection does not have a fixed address, you can install free dynamic DNS software, available from your ISP, which simulates a fixed internet address. You will then use the domain name assigned by the DNS provider. The *Pilot* server will be behind your firewall, at **port number 38820**, and you will use "port forwarding" to gain access to it from an internet connection. Port forwarding is set and stored in your internet gateway router. Refer to the router's documentation for details on this, or contact your network administrator. Your internet firewall may need to be opened for connections to **SUMMUS.EXE**.

Connecting a Local Client

Be sure the server *Pilot* is running with the *Connect to Server* screen showing that the server is ready to accept connections.

A local client workstation is able to see and browse the server computer using Windows Explorer or "My Computer". The server may be visible with a network name or a mapped drive letter. If a remote workstation can browse the server through a VPN connection, the workstation is considered "local" to the server.

At the client workstation, open Windows Explorer and open the *Pilot* folder on the server. Locate SUMMUS.EXE and double-click to open *Pilot* and log in as "DEMO". Then, open the Options->Connect to *Pilot* Data Server screen. This screen controls both server and client connections.

In the Server Name field, type the Windows name of the server computer or its IP address. Don't include any slashes, backslashes or drive letters in the server name. *Pilot* will resolve the name/address and show a list of the server's available connections. Place a checkmark in the Select column on the line showing the server IP address that you want to use. Then click the Connect button. The Connection Status window should begin to update and the Server Status should show "Running". The workstation is now set up and connected, and will reconnect automatically next time you log into *Pilot*.

There are two connection options, depending on how you wish to run *Pilot* in the future.

- *Pilot* can launch and run the client session from the server. Your desktop *Pilot* icon will point to the server. When *Pilot* is launched, DLLs and library data will load across the network from the server, which can be slower.
- For the best possible performance, you can allow the server to create and update a local *Pilot* folder on the C: drive of your workstation, which will contain the *Pilot* program, with all of its DLLs and library files. *Pilot* will launch locally and will load and display more quickly than doing so across the network. Your desktop *Pilot* icon will point to the local copy of *Pilot*.

For the second and faster option, check the Install *Pilot* Client Locally checkbox. As *Pilot* launches, it will search for the local folder "C:\PILOT CS LOCAL\", creating the folder if necessary, and run a quick check to update any program files that are out of date.

Connecting a Remote Client

Be sure the server *Pilot* is running with the Connect to Server screen showing that the server is ready to accept connections. The internet gateway router must have the correct port forwarding set to **port number 38820**, and the internet firewall must allow **SUMMUS.EXE** to connect.

A remote client workstation is not able to see or browse the server computer using Windows Explorer or "My Computer". The client workstation must have a broadband internet connection, which it will use to reach the server.

Install *Pilot* on the workstation, in the folder "C:\PILOT CS LOCAL\". Run *Pilot* and log in as "DEMO". Then, open the Options->Connect to *Pilot* Data Server screen. This screen controls both server and client connections.

In the Server Name field, type the internet IP address of the server computer. Don't include any slashes, backslashes or drive letters in the server name. *Pilot* will resolve the address and show a list of the server's available connections. Place a checkmark in the Select column on the line showing the server IP address that you want to use. Then click the Connect button. The Connection Status window should begin to update and the Server Status should show "Running". The workstation is now set up and connected, and will reconnect automatically next time you log into *Pilot*.

Place a checkmark in the Install *Pilot* Client Locally checkbox. This insures that updates installed on the server will automatically update this workstation when you connect.