



What is a Client/Server Database Program and Why Do I need It?

At the start, the Red Canyon Systems, Inc. software products (LogIn, FICIS and CenterFit) were DOS programs. They could only be run on a single PC. Now, all of these products can run on a network of connected PCs under various Windows operating systems and Network operating systems. This network can consist of anything from two PCs directly connected to each other in a small facility to a number of PCs connected to a central "server" on a remote computer.

Some sites using Red Canyon Systems, Inc. software still use just a single PC, in a Windows environment. As time passes, more users see the benefit of linking multiple PCs together to run this software, and do so. There are many benefits of running on a network of PCs - easier access to the data, more simultaneous users, quicker updating of the data. But with those benefits come some possible problems.

Regardless of how many PCs are on the network accessing the data, the data itself is stored in only one location - either on the disk drive of one of the PCs in the network or on a central disk server to which all the networked PCs have access. In either case, as more and more PCs connect to the data and as more and more data is stored, problems can arise.

Here's how it works. In a common scenario, three PCs are linked together. The Red Canyon Systems, Inc. software and your data are stored on the disk drive on one of them. The other two PCs are networked to this PC, which we will call the "Server PC." From any of the three PCs you can run any of the RCS programs. Let's say you run LogIn from two of them and LogIn Administrator from the Server PC. When someone logs in on one of the PCs running LogIn, the LogIn program on that computer needs to get the data from the Server PC and display it on the LogIn PC's screen. In order for this to happen, the Server PC needs to send the appropriate data to the LogIn PC. It does this, by sending to the LogIn PC the entire data file containing student names, IDs and visit totals. Once this data is sent to the LogIn PC, the LogIn PC then locates the specific student's data and displays it on screen. When the student is done logging in, his or her record in that file is updated and then the entire file is sent back from the LogIn PC to the Server PC.

As fast as computers work nowadays, this doesn't take very long, even though the entire file is transferred back and forth every time someone logs in. The problem is, as more and more students are on file, and as the log in more and more, the number of records to transfer back and forth increase. Eventually, the file gets larger and larger, and the amount of time to transfer the data takes longer and longer. As a result, the login process becomes slower and slower.

At the same time, other problems can crop up. Depending on how your networks are set up, there can be a number of hardware devices involved in the network connections between the various PCs - routers, hubs, and network cards, not to mention data transmission lines and cables. Any of these can have a momentary glitch while transferring these files and cause bad data to be written back onto the data files on the Server PC. Since the entire file is being transferred each time an activity takes place, a lot of data could become corrupted if any of these items malfunction. Odds are this will happen.

Also, as more and more PCs are added to the network there is an increased chance of data collisions. As more and more PCs request more and more data to be transferred more and more frequently across the same devices, data going to one PC can literally collide with data from another and be destroyed or rewritten improperly back on the Server PC.

If your files are always small, things should work quickly. If not a single piece of your hardware ever, even for a millisecond, has a problem, then everything will run smoothly. Since this is not a perfect world however, odds are problems will crop up. If your data becomes corrupt, anything from an individual person's data being wrong to the programs themselves refusing to run can happen.



All of the Red Canyon Systems, Inc. software comes with the ability to run on a network and to run smoothly, if none of the above scenarios occur. Whether or not these problems occur is simply a function of the integrity of your network. Odds are, at some point in time, a problem will occur. It is possible though, that no problem ever happens. But we can offer you some protection against it happening.

We designed our software to be able to work in concert with what is called "Client-Server" software if needed. Our software can run without it and is shipped to you without it. When you start using our software, you do not have the Client-Server software. If you never confront any of the problems described above, you don't need it. But if any of those problems do occur or you want to make sure that they never do, you can add the Client-Server software at any time.

The Client-Server is an extremely complicated program that does the following. It runs on your Server PC at the same time as the Red Canyon Systems, Inc. software does. With it, when one of your PCs needs to get a record from the Server PC and makes that request, the Client-Server intercepts that request, locates the proper record on the Server PC and sends to the PC requesting that data (the Client PC) only the record it asked for. This makes the request occur much faster. It also drastically reduces the amount of data (traffic) being transmitted across the network. As a result, it is a lot less likely that data will become corrupt because there is less of it to be lost during any momentary hardware problems.

Basically then, the Client Server software is designed to speed up the access of data - making logging in and out, along with everything else, occur faster. It also, for all intents and purposes, reduces to close to zero, the chances of data becoming corrupt during transmission.

As was stated earlier, the Client-Server is not required. The Red Canyon Systems, Inc. software works without it, but it does offer insurance that the problems that normally occur as a result of using a network will be drastically reduced.

The Client-Server is additional software that can be purchased when you initially purchase the Red Canyon Systems, Inc. software, or it can be purchased later and added on. Red Canyon Systems, Inc. resells the Client-Server for Extended Systems, Inc. They are the ones that developed the Client-Server software that our software was designed to use. The Client-Server software is called the Advantage Client-Server.

If you decide to purchase the Advantage Client-Server, you need to contact the Sales Dept. at Red Canyon Systems, Inc. and let them know what kind of network operating system you use and how many PCs will be connected to your network. The Advantage Client-Server has a range of prices depending on how many simultaneous users (PCs) will be using Red Canyon Systems, Inc. software at the same time. We have a Price List we can send, showing, based on number of users and Network Operating System, what the cost will be.

We understand that you might not be familiar with the technical subject matter of this document and may not feel comfortable having to make a decision based on your understanding of it. We suggest that you share this document with the PC Network Support Technicians at your site and let them read through it. They will be able to help you in your understanding of it and provide you with their thoughts on it.

If you have questions about the technical aspects of the Advantage Client-Server, please feel free to contact our Technical Support. We have additional technical documentation we can send you about it. For information on pricing, please contact our Sales Department.