

extend[®]8

Interoperability Suite

AcuConnect[®] | Versatile Remote COBOL Listener



Frustrated by bottlenecks? Tired of character-based screens on UNIX[®] terminals? There comes a point in nearly every organization when business requirements exceed computing resources. So how do you meet the demands of your changing business without spending a lot of money? With AcuConnect—a client/server solution that lets you distribute your resources for optimal performance and functionality.

EXECUTIVE OVERVIEW

AcuConnect is a remote COBOL listener that lets you make the most efficient and strategic use of your existing computing resources. AcuConnect can be deployed in a distributed processing architecture or a thin client architecture.

In a distributed processing deployment, you can divide application processing among multiple UNIX, Linux[®] and Windows[®] machines for optimal performance. You can perform most of your processing on the client or most on the server, or you can divide the processing any way you wish. Users or programs on client machines can launch applications on server machines, whether those servers are part of a local area network, wide area network or accessed over the Internet. While some portions of your application continue to run on the client, the resource intensive portions run where it is most efficient—on the server.

In a thin client architecture, only the user interface portion of your application runs on the client, a 32-bit Windows machine. The rest runs on a UNIX, Linux, VMS or Windows server where data access is local. Because only user interface commands are passed to the client, network overhead is minimized.

With AcuConnect, you can:

- Improve performance
- Lower network management costs
- Alleviate software distribution concerns
- Build a graphical front end for non-Windows applications
- Extend the life of older equipment

AcuConnect is a vital component of Acucorp's *extend[®]8* family of solutions.

ACUCONNECT VERSION 8 HIGHLIGHTS

Thin Client

Acucorp's Thin Client technology consists of three components:

- A small program on the Windows client called the ACUCOBOL-GT® Thin Client (**acuthin**). The Thin Client communicates with the application running on the server and handles the display of the user interface.
- The AcuConnect remote COBOL listener service (**acurcl**) on the server. The listener waits for requests from the Thin Client to launch the COBOL program.
- A standard ACUCOBOL-GT runtime on the server.

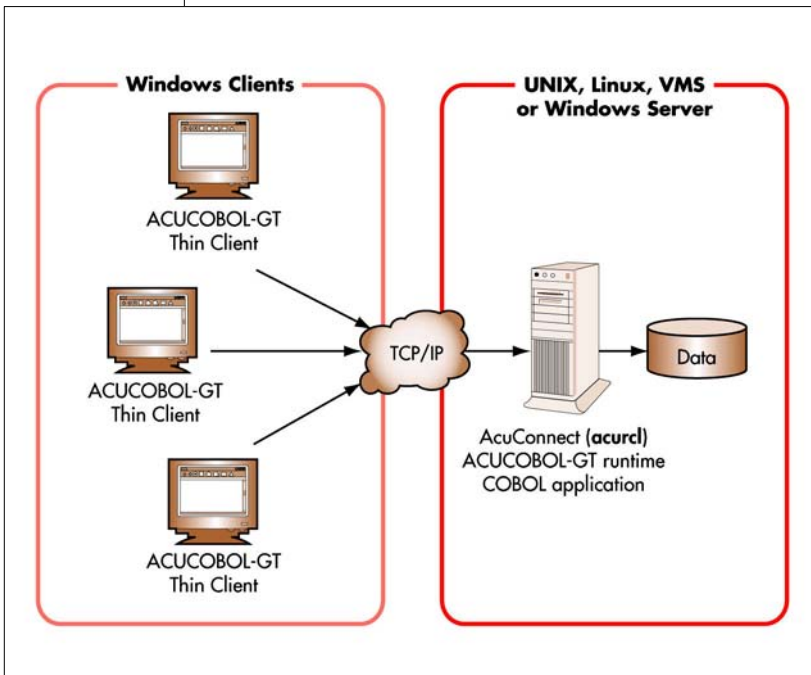
When a request is received from a client, the AcuConnect listener starts a new runtime on the server and connects the runtime with the client process. The runtime executes the COBOL application and sends screen commands back to the client.

Few Requirements of the End User

In a Thin Client deployment, end users do not have to have a COBOL runtime installed on their machines, nor do they need to install your application. All they need is **acuthin**, which requires fewer than 2 MB of disk space. If you use the Web version of the Thin Client, **acuthin** can be downloaded and installed automatically when users visit your Web site or click a link to launch your application.

Automatic Updates

When a user attempts to start a server-based program, ACUCOBOL-GT's Thin Client automatically checks for compatibility with the server. If the Thin Client detects a version mismatch, it downloads the correct version and installs it on the user machine. This eliminates the cost and downtime associated with manually updating each end user's machine. This is especially important for customers with large numbers of end users, particularly remote users.



Thin Client development and deployment model

GUI for UNIX, Linux and VMS

With Acucorp's Thin Client technology, non-Windows applications, such as those running on UNIX, Linux and VMS servers, can display a full graphical user interface on Windows clients. You can even leverage ActiveX controls and the Windows help system from your UNIX, Linux or VMS application. The Thin Client supports mouse usage for character screen items. Character-based application screens may require some tailoring to suit a Thin Client deployment.

High Performance

Many applications perform better when deployed in a thin fashion compared to other networking techniques. There are many reasons for this:

- When applications are run on the server, data access is local so retrievals and updates are faster.
- Server machines are generally faster and more robust than client machines.
- Only screen updates are passed to the client. This keeps network I/O to the bare minimum, reducing traffic and improving response times.

Centralized Application Maintenance

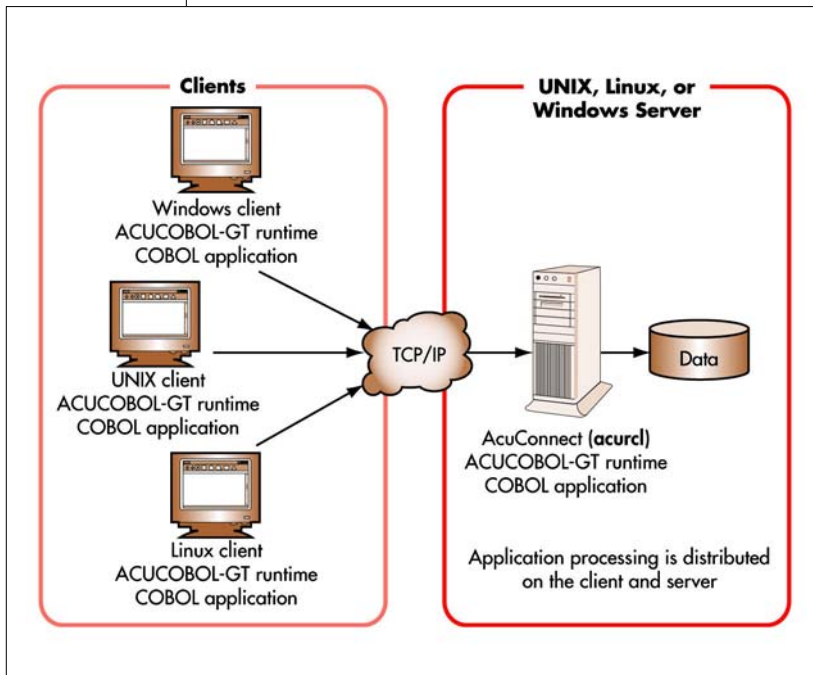
When an application resides solely on a server, program installation is easier than when application logic is split between a client and a server. In addition, upgrades and distribution are simple to accomplish, and program maintenance is centralized and therefore easily completed.

Enhanced Security

Applications deployed in a thin configuration enjoy enhanced security, because all programs and data reside on the server. An alias file that holds all the information needed to invoke the appropriate application on the server ensures that only those applications you authorize can be launched from the client.

acuthin Executable, ActiveX Control and DLL

The ACUCOBOL-GT Thin Client (**acuthin**) is available as an executable file, a dynamic link library (DLL) or an ActiveX control. The ActiveX version can be embedded on Web pages to give users access to your applications from Internet browsers. It is also known as the Web Thin Client. The DLL version can provide access from programs written in languages that don't support ActiveX.



Distributed processing development and deployment model

Distributed Processing

In a distributed processing environment, AcuConnect comprises a standard ACUCOBOL-GT runtime on the client and a remote COBOL listener (**acurcl**) and an ACUCOBOL-GT runtime on the server. To launch a server program, the client uses standard COBOL CALL syntax. You embed a CALL in the client application, and AcuConnect launches the server application for you automatically. All application (and data) access is completely transparent to the end user. If programmed accordingly, the remote application can CALL another application on the same or different server. Because both the client and server have an ACUCOBOL-GT runtime, you decide how much of an application runs on the client, and how much on the server. The client can be as “thin” or as “thick” as you like.

High Performance

With AcuConnect, you can offload the processing of programs with intensive disk I/O onto a server, such as reports, CPU-bound calculations and sorts. Rather than causing an input and output transaction for every record, programs can process multiple I/O statements in “batch” mode on the server and the results are sent across the network in one block of data. This dramatically reduces network traffic and improves performance.

Maximum Resource Utilization

AcuConnect lets you balance your processing load between multiple servers to make the most efficient use of your existing resources. Interactive components, such as the user interface, can be processed on the client system while computation-intensive components, such as batch reports, can be processed on faster machines with newer technology. Data storage and retrieval functions can be located on yet another set of servers. By utilizing your resources effectively, you can extend the life of older equipment and cut costs.

Flexibility

AcuConnect gives administrators complete flexibility in the location of their program and data files. With AcuConnect, administrators can run their programs on server1 one day and server2 the next, without making any changes to the application code. They can even run the application locally if they choose, or “daisy chain” applications together on multiple servers. The choice of server is completely arbitrary and can be changed without modification of the client or server programs that have been developed.

Simple Installation

AcuConnect runs as a self-contained process (service on Windows NT/2000/2003, daemon on UNIX), and all the systems administrator needs to do is to create various configuration files to have the tasks execute on the appropriate server. These configuration variables can also be set programmatically so the choice of server can be made at run time.

Minimal Re-engineering

AcuConnect works by processing specified CALLED subprograms on the server. Many COBOL applications are already coded in a structured manner either using subprograms or PERFORMed sections for batch-type processes and, therefore, may not require much modification. Those that use specific “main” programs (maybe via scripts or JCL) for these tasks can be quickly altered to become subprograms of a (new) master or menu program.

Highly Configurable

You can specify the remote path of the server components in the CALL statement, or you can define the path in a configuration file on the client (this can be done globally or individually for each subprogram). Then, without modifying or recompiling the original code, you can run the same object on any machine in your network just by changing the client configuration file. In this same file, you can also specify the flags and runtime configuration file to be used.

Rapid Internet Deployment

Because it is not practical to distribute processing to client machines over the Internet, AcuConnect is an ideal solution for rapid Internet deployment. With AcuConnect, the client program simply routes a request to the URL or IP address of the machine hosting the COBOL listener, and AcuConnect takes over from there.

Remote Program Debugging

AcuConnect configuration variables allow you to debug remote programs in a variety of ways: with a TTY, an xterm or the Thin Client. This flexibility enables users to easily debug their remote programs.

ACUCONNECT VERSION 8 FEATURES AND BENEFITS

FEATURE

BENEFIT

Common AcuConnect Features

The following features are common to both AcuConnect deployments.

General

Windows service support

AcuConnect can be installed as a Windows NT/2000/2003 service. This simplifies AcuConnect operation in these environments.

Graphical manager in Windows

AcuConnect provides a graphical control panel for controlling **acurcl** command functions on Windows servers. This makes it easy to perform **acurcl** command operations.

Dynamic configuration setting

AcuConnect lets you set server configuration/variables on the fly using the “**acurcl -config**” command. This simplifies system configuration and lets you respond to changing business needs.

Client/server character mapping

AcuConnect can reconcile differences between the character sets used on client and server machines. A runtime configuration variable points to a user-defined text file that contains the character mapping. This provides seamless access to programs and data on different platforms using different language character sets or character encodings.

AcuServer® support

AcuConnect can be used in conjunction with AcuServer to provide access to remote data files when the data and applications are stored separately. AcuConnect does not need AcuServer to provide file access if the data resides on the same server as the remote applications. With AcuConnect, you can store your data and program files where it makes the most sense, providing flexibility in the location of files.

Acu4GL® support

AcuConnect can be used in conjunction with Acu4GL to provide transparent access to data in relational database management systems. This allows users to access data in a variety of data sources, including relational databases.

System Status and Operational Messages

System status reports

You can view AcuConnect system status via the “**acurcl -info**” command or via the graphical control panel for Windows.

Report messages

On UNIX, AcuConnect can write informational or error messages to the syslog facility, or, if your operating system does not support this facility, to the console. On Windows, AcuConnect can write to local or remote event logs.

Security

Server access file

To establish system security with AcuConnect, you create a server access file that specifies which machines and users are allowed to use AcuConnect. This protects your business-critical applications and data from unwanted access.

Server access file manager utility

AcuConnect provides a utility to create and maintain the database of authorized AcuConnect clients and users. This facilitates easy file maintenance to support system security.

Password support

To enhance system security, AcuConnect lets you assign an individual password for each user or exclude a particular user or group of users.

Configurable Windows domain

In Windows environments, you can specify a domain name for user logon via configuration variables. This simplifies system access for trusted users.

Native logon facilities

AcuConnect lets both UNIX and Windows users log on with their operating system security, if they wish, instead of using AcuAccess. This enables them to use their usual network logins to access programs and data.

Socket encryption

AcuConnect offers socket encryption as a configuration option. This protects information while it is in transit across the network.

Thin Client

The AcuConnect Thin Client environment provides the following additional features.

General

Minimal network I/O

With the application and data on the server machine(s), only screen updates are passed between the client and server. This reduces network traffic and may enhance performance.

Server alias file

An alias file holds all the information needed to invoke the appropriate application on the server. This ensures that only those applications you authorize can be launched from the client and gives end users a quick way to launch applications with pre-determined configuration variables. The alias definition file ("acurcl.ini") uses industry-standard XML format.

Server alias file manager utility

AcuConnect provides a utility to create and maintain the Thin Client server alias file. This makes it easy to set up server aliases.

Support for ActiveX controls

The Thin Client allows UNIX, Linux, VMS, HP e3000 and Windows applications to use ActiveX controls if the controls are installed on the client. This gives you flexibility and added features for graphical user interface development.

Printing options

With the Thin Client, users can print locally on their Windows machine or on the remote server. This gives them printing flexibility.

Dynamic link library (DLL) calls

With the Thin Client, you can call subroutines in DLLs located either on the display host or a Windows application host. This provides flexibility in application development.

ACUCOBOL-GT Thin Client DLL version

A DLL version of the Thin Client can be called from languages that don't support ActiveX. You can use the DLL version as an alternative to the ACUCOBOL-GT Web Thin Client. This allows flexibility in Thin Client deployment.

Mouse support

Thin Client users can use a mouse to select a character screen section item and change the mouse shape when it passes over fields. This provides users with more flexibility when using their applications.

Client Resource Management

Local resource file access

After a resource file is initially downloaded from the server, you can access it in the display host's file system rather than on the server. This reduces network traffic.

File transfer capabilities

You can transfer files between the application host and display host (client) and between directories on the display host. This lets you decide where you want certain files to reside, on the client or server machine.

Automatic updates

The Thin Client automatically detects version incompatibility between itself and the server software and downloads and installs a compatible version of itself. This eliminates the downtime and cost associated with manually updating each end user's machine, especially for remote end users.

Informational and Error Messaging

Redirect error output

With the Thin Client, users can specify that the runtime reopen stderr (instead of using its own file) into a new file. This allows the runtime to direct all image errors to the runtime error file without requiring shell redirection.

Customize error text

Thin Client users can specify the text of a message that is returned when the Thin Client does not receive a response from the server. This gives users yet one more way to customize their systems.

Internet Capabilities

Internet access

AcuConnect uses TCP/IP to communicate between client and server. This makes your application available across most networks, including the Internet.

Launch from a Web page

There are several ways to set up your Thin Client application to be launched from a Web page. Web deployments simplify the process for end users because no configuration is required on the client and users don't need to type command-line commands.

ACUCOBOL-GT Web Thin Client

The Web Thin Client is an ActiveX control version of the Thin Client that you can embed on your Web page. It lets you make Thin Client applications accessible through browsers that support ActiveX. The Web Thin Client automates the download process so that software installation and program invocation are completely transparent to end users.

Transaction Processing Capabilities

Remote debugging

You can debug your program from within a transaction processing environment using special **acuthin** command-line syntax. Note that this feature must also be supported by the vendor of your transaction processing environment.

Distributed Processing

The AcuConnect distributed processing deployment provides the following additional features.

Performance

Resource distribution

AcuConnect lets you run your programs on the fastest machines available or the machines that would make the best use of resources. This improves response time and extends the life of your current equipment.

Network I/O control

AcuConnect lets you run I/O-intensive, batch processing tasks on the server. This reduces network traffic, helping to improve response time even further.

Synchronous/asynchronous processing

AcuConnect allows the client application to continue running or to wait in a suspended state until the remote application performs its task and returns a result. If you want the application to continue to run, you can embed a CALL to a special library routine. This improves productivity, because users can perform other tasks while the remote job is running.

Multiple instance support

AcuConnect supports multiple runtime instances so that users may start multiple programs on the server at the same time. This improves system response.

Load balancing

AcuConnect lets you distribute your processing load strategically among network machines to optimize performance.

Flexibility

Processing distribution

Because both the client and server have an ACUCOBOL-GT runtime, you decide how much of an application runs on the client, and how much on the server. This lets you make the most strategic use of your resources.

Internet ready

AcuConnect provides access to remote object files in any TCP/IP network, including the Internet. To access programs over the Internet, you specify the IP address for your program in a configuration file on the client or (if the name can be resolved, for example by DNS) you specify the fully qualified machine name. This lets you provide global access to corporate resources using an existing infrastructure.

Choice of execution path

AcuConnect lets you choose where your programs run. Without modifying or recompiling the original code, the same object can operate on any server or client machine. You specify the location of the program in a configuration file on the client.

**AcuConnect can CALL
AcuConnect**

With AcuConnect, programs on one server can start programs on another server, *ad infinitum*, so long as each server has a copy of AcuConnect installed. This gives you the freedom to choose where to put your application resources.

Remote program debugging

AcuConnect provides you with three methods for debugging remote programs: a TTY, an xterm or the Thin Client. This flexibility gives you the freedom to choose the method for debugging that is right for you

Ease of Use

Exception handling

If your remotely CALLED program encounters an exception, the program terminates unless you use the "on exception" phrase. You could then use a library routine to find out what went wrong, and even "drop back" to local processing if necessary. This simplifies exception troubleshooting.

File name alias

AcuConnect lets you specify the location of the remote program files using special remote name notation or by creating a file name alias. This simplifies remote file access.

PLATFORM SUPPORT

Servers

Distributed Processing

- UNIX
- Linux
- Windows 2000 Server
- Windows 2003 Server (32-bit)
- Windows NT Server

Thin Client

- UNIX
- Linux
- VMS version 7.2 or later
- Windows 2000 Server
- Windows 2003 Server
- Windows NT Server
- HP e3000

Clients

Distributed Processing

- UNIX
- Linux
- Windows XP, 2000, NT Server, Vista

Thin Client

- Windows XP, 2000, NT Server, Vista

REQUIREMENTS

Servers

- 12 MB disk space (Windows), 12 MB (UNIX), plus the space necessary for your program files
- 6 MB memory (Windows), 800 KB (UNIX), plus the memory required for running programs
- TCP/IP networking software
- ACUCOBOL-GT runtime
- Remote program files

Clients

Distributed Processing

- ACUCOBOL-GT runtime
- TCP/IP networking software
- Client program files

Thin Client

- ACUCOBOL-GT Thin Client
- 2 MB available disk space (to allow space for temporary files)
- TCP/IP networking software

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