

Application Broker



COPYRIGHT 1994-2003 SoftVelocity Incorporated. All rights reserved.

This publication is protected by copyright and all rights are reserved by SoftVelocity Incorporated. It may not, in whole or part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form without prior consent, in writing, from SoftVelocity Incorporated.

This publication supports Clarion. It is possible that it may contain technical or typographical errors. SoftVelocity Incorporated provides this publication "as is," without warranty of any kind, either expressed or implied.

SoftVelocity Incorporated
2769 East Atlantic Blvd.
Pompano Beach, Florida 33062
(954) 785-4555
www.softvelocity.com

Trademark Acknowledgements:

SoftVelocity is a trademark of SoftVelocity Incorporated.

Clarion™ is a trademark of SoftVelocity Incorporated.

Btrieve® is a registered trademark of Pervasive Software.

Microsoft®, Windows®, and Visual Basic® are registered trademarks of Microsoft Corporation.

All other products and company names are trademarks of their respective owners.

Printed in the United States of America (1003)

Contents:

1 - Introduction	5
Welcome!	5
What is the Application Broker?	6
What You'll Find in this Book	7
Documentation Conventions	8
Typeface Conventions	8
Keyboard Conventions	8
2 - General Setup	9
System Requirements	9
Server System	9
Client System	9
Distributable Application Broker Installation (non-developer version)	11
Developer Application Broker Installation	14
3 - The Application Broker	15
Running the Application Broker	15
Using the Developer Version of the Application Broker	15
Connecting to your Applications using the Executable Broker	17
4 - Application Deployment	19
Directories	19
Remote Access to the Application Broker	20
Application Broker Setup Options	22
Executable Broker	22
Deployment CheckList	24
Testing Locally	26
Testing with the Linked in Broker	26
Testing your TCP/IP Connection	26
Index:	27

1 - Introduction

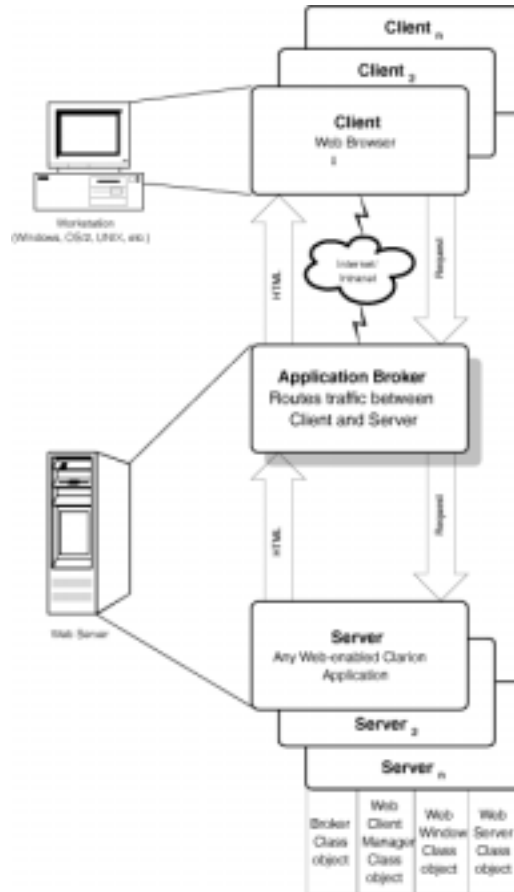
Welcome!

This book contains information on installation and setup of the Application Broker for applications created with both Internet Connect as well as Web Builder extensions.

The Application Broker is supported on Windows 95/98, Windows NT, Windows 2000, and Windows XP.

What is the Application Broker?

The Application Broker is your connection to Internet database applications made with Clarion. It allows end-users to manipulate Web-enabled applications running on a Web server using a browser.



There are two types of application brokers available. The linked in broker is used to quickly test an internet application without having to fully deploy the application. This is only used for testing from the Clarion development environment. The Executable Broker is recommended for testing and deploying your Web-enabled application on any Web server.

What You'll Find in this Book

The following lists the parts of this book and summarizes its content:

Introduction

Chapter One: the chapter you're reading now. This is an introduction to the Application Broker.

Setup

Chapter Two: step by step instructions tell you how to install the Clarion Application Broker.

Running the Application Broker Executable Version

Chapter Three: documents the executable version of the Clarion Application Broker.

Deployment Checklist

Chapter Four: documents the files needed in order to deploy a Clarion Web enabled application.

Documentation Conventions

Typeface Conventions

<i>Italics</i>	Indicates what to type at the keyboard, such as <i>Enter This</i> . It also indicates information displayed in a window's title bar.
Boldface	Indicates commands or options from a pulldown menu or text in a dialog window.
<code>Courier New</code>	Used for diagrams, source code listings, to annotate examples, and for examples of the usage of source statements.

Keyboard Conventions

F1	Indicates a single keystroke. In this case, press and release the F1 key.
ALT+X	Indicates a combination of keystrokes. In this case, hold down the ALT key and press the X key, then release both keys.

2 - General Setup

System Requirements

Server System

You can run the Application Broker and Web-enabled applications on Windows 95/98; however, we strongly recommend using Windows NT, 2000 or NT to host the deployment.

- ◆ Windows 95/98, 64 Megabytes of RAM recommended, static connection to Internet/Intranet.
- ◆ Windows NT,2000, and NT, 128 Megabytes of RAM recommended, static connection to Internet/Intranet.

Performance depends on the speed of your server's connection to the Internet and the traffic you expect your application to handle. Applications can be delivered over a 28.8 kb modem connection, but we recommend ISDN or higher.

Client System

Clients can run a WebBuilder application under any platform for which a JavaScript Internet browser is available. A Java-enabled browser is required for an Internet Connect program. The applications that you develop with Clarion 6 Enterprise Edition will execute comfortably on computers that meet only the minimum requirements for these browsers. Performance is affected by the speed of the connection to the Internet, but most applications will perform well over a 28.8 kb modem connection.

Recommended Browsers:

Although Web-enabled applications should work under any browser, the following browsers have shown the best results.

Windows 95/98/NT/2000/NT

Microsoft Internet Explorer 3.02 or later

Netscape Navigator 3.0 or later.

Netscape Communicator 4.0 or later. (Version 4.04 introduced fixes that improve performance.)

Windows 3.1x

Microsoft Internet Explorer 3.02 or later.

Netscape Navigator 3.0 or later.

Netscape Communicator 4.0 or later.

UNIX

There are many flavors of UNIX and some of these have browsers written specifically for them. There are too many to list here. See Netscape's Home page at <http://www.netscape.com> for more information.

Netscape Navigator 3.01 or later.

Netscape Communicator 4.03 or later.

Apple/Macintosh

Microsoft Internet Explorer 3.0x or later.

Netscape Navigator 3.0 or later.

Netscape Communicator 4.0 or later.

OS/2

Netscape Communicator 4.0 or later.

Distributable Application Broker Installation (non-developer version)

Start the setup program by running Setup.exe. Once the install is run, you will see a set of wizard screens displaying a number of options.

1. Choose the Setup options offered by the wizard screens. Press the **Next** button to move through the option screens.



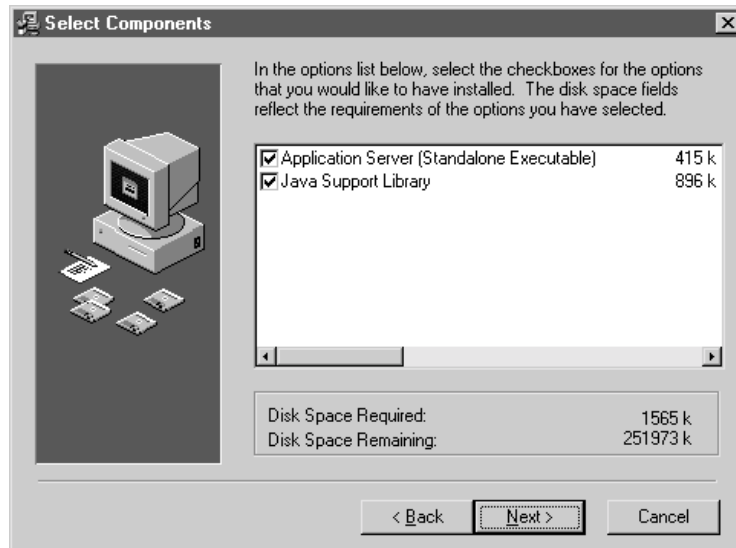
Application Server Folder

Choose the directory where the Application Broker will be installed to.



Backup Replaced Files

If replaced files should be backed up, select **Yes** and specify the backup directory.



Select Components

Select the components of the Application Broker to install.

Application Server (Standalone Executable)

This component is needed if using the Executable Broker with either Internet Connect or Web Builder.

Java Support Library

This component is needed only when creating and running an Internet Connect program.



Configure HOSTNAME

Enter the Domain or IP address of the machine where the Application Broker is installed to. The install detects this automatically, but you can change it if needed.



Remote Administration Password

Enter a password to enable remote access to the Application Broker. See the *Remote Access to the Application Broker* section for more information. A password must be entered here in order to remotely administer the server.



Select Program Manager Group

Enter the name of the Program Manager group to add the Clarion Application Broker icons to.

After all prompts have been entered, progress bars will display as Setup copies the files.

2. Press the **Finish** button when Setup is complete.

Developer Application Broker Installation

The development version of the Application Broker is offered as part of the Clarion development environment installation. To install the Application Broker only from your Clarion 6 install set, run *Setup.exe*. You will be presented with the wizards that install the Clarion development environment. When the Select SubComponents dialog appears, uncheck all components except the following:

Select Sub-Components

Select the components of the Application Broker to install.

Application Server (Standalone Executable)

This component is needed if using the Executable Broker with either Internet Connect or Web Builder.

Java Support Library

This component is needed only when creating and running an Internet Connect program.

Check any of the above components as needed for your configuration. Once selected, complete the install. Only checked components will be installed.

3 - The Application Broker

Running the Application Broker

The executable version must be started before it can be used. To start the executable version of the Application Broker, DOUBLE-CLICK on *C60APS50.exe* (file that comes with the C6 install) or *C60APS.exe* (if you have the unlimited version). This may also be added to your Startup group.

Web servers/services require binding to a specific port. The default port for HTTP is 80. The Application Broker defaults to this port. If you are running any other Web server which is using port 80, you must specify another port (e.g., 8080) for the Application Broker in its setup options or by creating a shortcut with the port as a command line parameter.

Note:

If you specify the port number on the command line, you cannot change it in the Broker's setup options. If you start the Application Broker, allow it to warn you that it cannot use the default port, then change the port setting, it saves that setting and you will not need to specify the port the next time it executes.

Using the Developer Version of the Application Broker

Clarion 6 Enterprise Edition contains a Developer Version of the executable Application Broker (*C60APS50.exe*). This version is designed for testing.

The Developer Version of the Application Broker functions exactly like the Distributable Application Broker. The only difference is that the Developer Version only allows for a limited number of simultaneous connections.

That means any of the following are allowed:

- ◆ As many as fifty (50) clients can run an application at the same time.
- ◆ As many as fifty (50) clients can run more than one copy of an executable by opening another browser window.
- ◆ As many as fifty (50) clients can run multiple executables by opening another browser window.

Note:

To release the connection and allow access to another user, all applications started by the client must be closed.

A client must exit the application for the application to close; simply closing the browser does not close an application. If the client does close the browser, the application won't close until a timeout occurs. The templates used to design the application set an application's timeout to 10 minutes by default. You can modify this timeout interval in the global extension used in the application.

Testing Concurrent Access

You can easily test any concurrency issues (i.e., issues in your application concerning more than one user) with multiple clients. You can also test with a single client by starting two instances of your browser and running a copy of the application in each.

To start a new instance of your browser:

In Internet Explorer 3.0x:

1. Choose **File ▶ New Window**.

In Internet Explorer 4.0x and higher:

1. Choose **File ▶ New ▶ Window**.

In Netscape Navigator 3.0x:

1. Choose **File ▶ New Web Browser**.

In Netscape Navigator 4.0x and higher:

1. Choose **File ▶ New ▶ Navigator Window**.

Connecting to your Applications using the Executable Broker

To run a Web-enabled application from a browser using the executable version of the broker, provide a Uniform Resource Location (URL) in the following format:

```
http://nnn.nnn.nnn.nnn/appname.exe.0
```

where *appname.exe* is your application's executable file name (make sure to add a dot zero (.0) after the executable name) and *nnn.nnn.nnn.nnn* is your IP address, or

```
http://domain.ext/appname.exe.0
```

where *domain.ext* is your domain name, if your IP address has a name registered with a Domain Name Server (DNS).

If you are running the broker on a port other than port 80 (the default HTTP port), include the port number in the URL.

Examples:

```
http://nnn.nnn.nnn.nnn:8080/appname.exe.0
```

```
http://domain.ext:8080/appname.exe.0
```

Note:

If your application is located in a subdirectory of \EXEC, then the full pathname must be placed between the domain name and executable file name (Example:
http://domain.ext:8080/exec/order/appname.exe.0 where ORDER is the subdirectory)

Using Hyperlinks to start an application

You can also create hyperlinks in standard HTML Web page to execute Web-enabled applications.

For example:

```
<A HREF="http://nnn.nnn.nnn.nnn/appname.exe.0">Click to start app</a>
```

or

```
<A HREF="http://nnn.nnn.nnn.nnn:8080/appname.exe.0">Click to start app</a>
```

Firewalls and alternate ports

Firewalls and proxy servers can be configured to restrict access to ports other than the default HTTP port (80). To facilitate access for users behind firewalls or proxy servers, you have the following options:

1. Run the executable Application Broker on port 80.
2. Have the network administrator remove the restriction to port 8080 (or the port you are using).

4 - Application Deployment

Directories

Application Broker EXE Version

When you run the executable version of the Application Broker, the directory from which it is run is the virtual root directory for executables. The \Public directory below the "CWICWEB" directory is the virtual root for any downloadable files. For example, a link to an HTML document in the \Public directory would be addressed as:

```
http://nnn.nnn.nnn.nnn/index.htm
```

while an executable in the same directory as the Application Broker is referenced using a similar URL:

```
http://nnn.nnn.nnn.nnn/appname.exe.0
```

Even though these files are in different directories, the Application Broker handles the routing and no relative directory information is required.

If you want to keep applications in different directories, you call the application using its *relative* path. For example, with the executable version of the broker running in \CWICWeb and an application named myapp.exe is deployed to \CWICWeb\Exec\App1. You would call it using:

```
http://mydomain.com/exec/app1/appname.exe.0
```

Remote Access to the Application Broker

If you provide a Remote password in the Application Broker Setup, you can access your running broker from a remote site using a browser. This allows you to modify settings, suspend and enable access to an application, and see the status of the last request.

To access your broker's setup utility from a browser:

1. Type the following URL in your browser's Address or Location entry control, then press ENTER.

Using the Executable Broker, the URL should be in the following format:

`HTTP://domainname.ext/appbroker/`

or

`HTTP://nnn.nnn.nnn.nnn/appbroker/`

A password dialog appears.

2. Type *CWIC* in the Username field and the password you specified during the installation in the broker's **Remote Password** field.

Note:

You cannot use remote access to the Application Broker unless you have specified a Password in the broker's setup.

A Web page appears with hyperlinks for the following functions:

Setup

Provides access to modify the setup options. You can modify any of the setup options except the Port Number and the Remote Password. Those settings can only be changed on the server.

Suspend

Allows you to suspend access to any Web-enabled application deployed on the Application Broker site. This must be done in order to update the application or data files. If an application is running, the session is closed and the application is closed. Users who were running the program receive a message informing them that the application has been suspended for maintenance.

To suspend access, type in the full name of the executable file (including the extension), then press the OK button. If the application to suspend is deployed to a subdirectory, you need not specify that directory here. A Web page is returned listing the applications which are currently suspended.

Enable

Allows you to re-enable access to any Web-enabled application on the Application broker site which has been suspended.

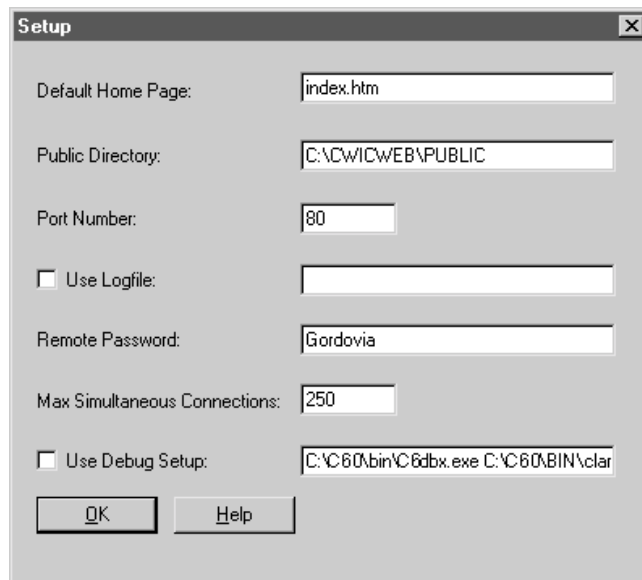
To re-enable access, type in the full name of the executable file (including the extension), then press the OK button. A Web page is returned listing the applications which are still suspended.

Status

This displays the current status of applications running on your broker site including the time of access and the IP address of the clients accessing applications.

Application Broker Setup Options

Executable Broker



From the Application Broker's Setup menu option, you can specify the following options:

Default Home Page

The document which is delivered by default if no specific URL is specified. The default is *index.htm*.

Public Directory

The directory where common deliverable files are deployed (HTML files, images, etc.). This is also the directory under which temporary directories containing the HTML files representing an application are created. The default is */Public*.

Port Number

The HTTP port to which the application broker is bound. If specified on the broker's command line, this is disabled and cannot be modified.

When a port other than 80 (the default HTTP port) is used, clients (or your hyperlinks) must specify the port in the URL. For example if the broker is attached to port 8080, you would specify:

`http://nnn.nnn.nnn.nnn:8080/appname.exe.0`

Use Log File

Checking this box enables server logging. This generates a logfile entry for each request made by clients accessing the Application Broker. The logfile contains the requester's IP address, the date and time of the request, and the request made. Keep in mind that the logfile will continue to grow as entries are appended to it.

Log File Name

Specifies the name of the logfile.

Remote password

Specify a password to enable remote access to the Application Broker. See *Remote Access to the Application Broker* for more information.

Note:

The remote password is case sensitive.

Max Simultaneous Connections

This specifies the maximum number of connections allowed. A notice is returned to users trying to access the broker when an attempt to exceed this number is made.

Use Debug Setup

This specifies to run applications in the debugger. You must have access to the Server machine to run the debugger. Specify the location of the debugger and redirection file in the entry field provided. For example:

```
C:\Clarion6\bin\C60dbx.exe C:\Clarion6\bin\C60EE.red
```

Deployment Checklist

1. Install and configure the Application Broker. Remember that the developer version of the Application Broker is for testing or low traffic use.
2. Start the Application Broker on the server (this cannot be started remotely).
3. Deploy the application and any other files it needs (DLLs, data files, image files, etc.) to the directory from which the Application Broker will run (or a subdirectory). These should be placed in a subdirectory in or under \CWICWeb\EXEC\. Data files should be in the same directory as the executable, or if your application is created to use data files in a different directory or drive, this location must be visible to the application.

Note:

The following Clarion DLLs should be placed into the directory with your executable: C60RUNx.DLL, C60DOSx.DLL, C60ASCx.DLL, C60TPSx.DLL, C60IBCx.DLL, C60LAYx.DLL, and SKELETON.DLL. These files can be found in the Clarion6\Distrib\ directory of the C60 install. They are required even if you do not use them in your .APP.

Copy all C60 Web images to \CWICWeb\Public. These images can be found in the \Clarion6\Distrib\Public directory. Images displayed in LISTs or BUTTONs must be deployed to this directory also.

4. The install creates a subdirectory below the broker directory named \Public. This directory is used to deliver files (such as the Java Classes from the Java Support Library, graphics or other HTML files) by the Application Broker.

The Application Broker will not deliver any files from its executable directory. This prevents downloading data files or executables from your site. Your application creates HTML files at runtime and automatically places them in a temporary subdirectory below either the \Public directory.

At runtime, a temporary directory is created for each client connection. These directories are automatically deleted when the connection terminates. Graphics in IMAGE controls are automatically extracted to this directory when they are not found in the /Public directory. Icons displayed in LISTs or on BUTTONs are not automatically extracted and must be deployed to the /Public directory.

5. Run the Application Broker on the server machine. It defaults to port 80. If you are running any other Web server which is using port 80, you must specify another port (e.g., 8080) for the Application Broker by creating a shortcut with the port as a command line parameter. You can also modify the port to which it is bound by using the Application Broker's Setup option.

If you specify the port number on the command line, you cannot change it in the Broker's setup options. If you start the Application Broker, allow it to warn you that it cannot use the default port, then change the port setting, it saves that setting and you will not need to specify the port the next time it executes.

6. Provide users who want to access the application a URL in the following format:

```
http://nnn.nnn.nnn.nnn/appname.exe.0
```

or

```
http://domain.ext/appname.exe.0
```

Appname.exe is your application's executable file name. Make sure the user adds a dot zero (.0) after the executable name.

If you are running the executable broker on a port other than 80 (the default HTTP port), users must include the port number in the URL. For example,

```
http://nnn.nnn.nnn.nnn:8080/appname.exe.0
```

If your application has any command line parameters, add a question mark and the command line parameter. For example:

```
http://nnn.nnn.nnn.nnn/appname.exe.0?myargument
```

Testing Locally

Although for true deployment of a Web-enabled application you will use a persistent IP address, you can use 127.0.0.1, as the local IP address for testing your application locally (with the broker and browser on the same machine).

Testing with the Linked in Broker

The Linked in Broker gives the ability to run and test your application locally without IIS or the executable brokers loaded. To run the application in the browser, click the Run icon from the Clarion IDE or double-click on the executable from Windows Explorer. This can only be done on a machine that contains the development environment.

Testing your TCP/IP Connection

There are several methods to test your TCP/IP Connection.

1. From a DOS Prompt, type

```
PING 127.0.0.1
```

This tests the TCP/IP connection on your local machine and returns the time it took to respond.

- 2 Start your Web browser, type the following URL to the server machine and target test page:

```
http://server.domain.com/index.htm
```

where server.domain.com is the IP address of your server.

If you assigned a different port to your Web server (other than the default port 80), you must also include the port number in the URL, as shown here:

```
http://server.domain.com:XX/index.htm
```

where XX is the port number assigned to your Web server.

If you don't have a TCP/IP connection or you want to test the connection from your local machine, you can use the following URL convention:

```
http://localhost/index.htm
```

or

```
http://127.0.0.1/index.htm
```

This is the internal local loopback address.

Index:

Application Broker		
defined	6	
running	15	
application brokers		
types.....	6	
Application Server Folder	11	
Backup.....	11	
Browsers		
recommended	9	
Clarion DLLs	24	
Client System	9	
Concurrent Access	16	
Connecting to your Applications.....	17	
connections		
maximum.....	15	
Debug Setup.....	23	
Default Home Page	22	
Deployment	19	
Deployment CheckList.....	24	
enable access.....	21	
Firewalls.....	18	
HOSTNAME		
configure	13	
Hyperlinks		
to start application	17	
Installation		
options.....	11	
Java Support Library.....	12	
Log File Name	23	
Max Simultaneous Connections	23	
Password		
Remote Administration.....	13	
Performance	9	
Port Number.....	22	
proxy servers	18	
Public directory	19	
Public Directory.....	22	
Remote Access		
to broker	20	
Remote password.....	23	
Setup.....	21	
Setup menu.....	22	
status		
of applications	21	
suspend access	21	
System Requirements	9	
TCP/IP	26	
Testing		
locally	26	
TCP/IP Connection	26	
with linked-in broker	26	
UNIX	10	
Use Log File.....	23	