

Administrator's Guide

Citrix ICA Macintosh Client

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Citrix Systems, Inc.

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Before You Begin

Who Should Use This Manual

This manual is for system administrators responsible for installing, configuring, deploying, and maintaining Citrix ICA Client for Macintosh (also called the Citrix ICA Macintosh Client). This manual assumes knowledge of:

- Citrix MetaFrame or Citrix *WINFRAME*
- The operating system on the client computer (MacOS)
- Installation, operation, and maintenance of network and asynchronous communication hardware, including serial ports, modems, and device adapters

How to Use This Guide

To get the most out of the *Citrix ICA Client Administrator's Guide*, review the table of contents to familiarize yourself with the topics discussed.

This guide contains the following sections:

Chapter	Contents
Chapter 1, "Introduction to the Citrix ICA Macintosh Client"	Gives a detailed list of features.
Chapter 2, "Deploying the ICA Macintosh Client"	Describes how to install and deploy the Citrix ICA Macintosh Client.
Chapter 3, "Configuring the Citrix ICA Macintosh Client"	Describes how to configure connection properties and device mappings for the Citrix ICA Macintosh Client.

Document Conventions

The following conventional terms, text formats, and symbols are used throughout the printed documentation:

Convention	Meaning
Bold	Indicates column headings, command-line commands and options, dialog box titles, lists, menu names, tab names, menu commands, and actual parameter names.
<i>Italic</i>	Indicates a placeholder for information or parameters that you must provide. For example, if the procedure asks you to type <i>filename</i> , you must type the actual name of a file. Italic also indicates new terms and the titles of other books.
ALL UPPERCASE	Represents keyboard keys (for example, CTRL, ENTER, F2).
[brackets]	Encloses optional items in syntax statements. For example, [<i>password</i>] indicates that you can choose to type a <i>password</i> with the command. Type only the information within the brackets, not the brackets themselves.
Monospace	Represents examples of text files.
WTSRV or %SystemRoot%	Refers to the system tree. This can be \WTSRV, \WINNT, \WINDOWS, or whatever other directory name you specify when you install your software.
...(ellipsis)	Indicates that you can repeat the previous item(s) in syntax statements. For example, /route: devicename[...] indicates that you can specify more than one device, putting commas between the device names.

The Citrix ICA Client for Macintosh allows users to connect to MetaFrame and *WINFRAME* servers. When describing a feature or procedure common to all types of MetaFrame and *WINFRAME* servers, this manual uses the term *Citrix server*. When describing a feature unique to a particular MetaFrame or *WINFRAME* server, this manual specifies the appropriate server and version number.

Finding More Information

This manual contains conceptual information and installation and configuration steps for the Citrix ICA Macintosh Client. For additional information, consult the following:

- AppleGuide Help for the Client and the ICA Client Editor: this is shipped with the client software.
- The *Citrix ICA Client Administrator's Guides* for the other ICA Clients you deploy.
- For instructions on installing, configuring, and maintaining your Citrix servers, see the documentation in your MetaFrame or *WINFRAME* package.

Other Citrix ICA Client documentation may be available in Adobe PDF format in the documentation folders of each Citrix CD-ROM, and on the Citrix Technical Support Services site at <http://www.citrix.com>. Using the Adobe Acrobat Reader, you can view and search the documentation electronically or print it for easy reference. To download the Adobe Acrobat Reader for free, please go to Adobe's Web site at <http://www.adobe.com>.

Important Always consult the Readme files for MetaFrame, *WINFRAME*, and the Citrix ICA Clients for any last-minute updates, known issues, and corrections to the documentation.

Citrix on the World Wide Web

Citrix offers online Technical Support Services at <http://www.citrix.com> that include the following:

- Adobe PDF versions of all current Citrix technical publications
- Downloadable Citrix ICA Clients, available at <http://download.citrix.com>
- A Frequently Asked Questions page with answers to the most common technical issues
- An FTP server containing the latest service packs and hotfixes for download
- An Online Knowledge Base containing an extensive collection of technical articles, troubleshooting tips, and white papers
- Interactive online support forums
- The Citrix Developer Network (CDN) available at <http://www.citrix.com/cdn>

This new, open enrollment membership program provides access to developer tool kits, technical information, and test programs for software and hardware vendors, system integrators, ICA licensees, and corporate IT developers who incorporate Citrix server-based computing solutions into their products.

Reader Comments

It is our goal to provide well-written, accurate, clear, complete, and usable documentation for Citrix products. If you have any comments, corrections, or suggestions for improving our documentation, we would be happy to hear from you. You can email the authors at:

documentation@citrix.com

Please include the name and version number of the product and the title of the document in your email.

Introduction to the Citrix ICA Macintosh Client



Overview

When connected to a Citrix server, the Citrix ICA Macintosh Client provides additional features that make remote computing just like running applications on a local desktop. The Citrix ICA Macintosh Client has the following features:

- Client device mapping
 - Client drive mapping
 - Client COM port mapping
 - Client audio mapping
- Client printing
- Encryption
- Client Auto Update
- Local clipboard integration
- Low bandwidth requirements
- Disk caching and data compression
- SpeedScreen Latency Reduction
- Application publishing support
- Business recovery support
- PC key mapping
- Multiple session support

Some client features are available only when connecting to MetaFrame for Windows NT and MetaFrame for Windows 2000 servers.

Client Device Mapping

The ICA Client supports client device mapping. *Client device mapping* allows a remote application running on the Citrix server to access devices attached to the local client computer. Users can access the client computer's local disk drives, devices attached to the local COM ports, and audio devices. Note that client device mapping is not supported when connecting to MetaFrame for UNIX 1.0 and 1.1 servers.

Client Drive Mapping

Client drive mapping allows you to access the local disk drives of the client computer from ICA sessions. When both the Citrix server and ICA Client are configured to allow client drive mapping, you can access your locally stored files, work with them from ICA sessions, and then save them either on a local drive or on a drive on the Citrix server.

Client COM Port Mapping

Client COM port mapping allows devices attached to the client computer's COM ports to be used from ICA sessions on a Citrix server. This allows local devices like modems and serial printers to be used by applications running on the Citrix server.

Client Audio Mapping

Audio mapping allows your client computer to play sounds generated by applications running on the Citrix server.

ICA Client audio support includes configurable sound quality levels that allow you to customize sound quality based upon the amount of bandwidth available.

Client Printing

Users can access printers attached to their computers during ICA sessions. When a Citrix server is configured to allow client printing, applications running remotely on the server can print to local printers. You can print to a PostScript printer, or to a PC printer connected to the Macintosh serial port. For more information, see "Printing From the Macintosh Client."

Encryption

The ICA Client supports different levels of encryption, including advanced RSA RC5 encryption.

Note To enable encryption levels higher than **Basic**, the Citrix server must support RC5 encryption. This support is included with SecureICA Services and Feature Release 1. SecureICA Services is not supported by all Citrix servers.

Client Auto Update

The Client Auto Update feature allows administrators to update ICA Client installations from a central location instead of having to manually install new versions of the ICA Client on each client computer. New versions of Citrix ICA Clients are stored in a central *Client Update Database* on a *WINFRAME* or MetaFrame for Windows server. The latest versions of the ICA Client are downloaded to ICA Client devices when users connect to the server.

Local Clipboard Integration

You can use the client workstation's clipboard to cut and paste objects between applications running locally on the client computer and applications running remotely in an ICA session.

Access to the local clipboard requires no special configuration or procedures; using the familiar cut, copy, and paste commands, you can transfer text, pictures, and other objects back and forth between local and remote applications. Note that not all server platforms support all media types on the clipboard.

Low Bandwidth Requirements

The highly efficient Citrix ICA protocol typically uses 20K of bandwidth for each session.

Disk Caching, Data Compression

These features can increase performance over low speed asynchronous and WAN connections. *Disk caching* stores commonly used portions of your screen (such as icons and bitmaps) locally, increasing performance by avoiding retransmission of locally cached data. *Data compression* reduces the amount of data sent over the communications link to the client.

SpeedScreen Latency Reduction

SpeedScreen Latency Reduction enhances the user's experience on slower network connections. Note that SpeedScreen Latency Reduction is not available when connecting to MetaFrame for UNIX 1.0 and 1.1 servers.

Application Publishing Support

You can create a remote application entry to connect to a Citrix server or to a published application that contains all of the information necessary to launch a user session or an application.

Business Recovery Support

The ICA Client includes the additional intelligence to support multiple server sites (such as a primary and hot backup) with different addresses for the same published application name.

This feature provides consistent connections to published applications in the event of a primary server disruption.

PC Key Mapping

Your Macintosh mouse and keyboard can be used in an ICA session in the usual way. You can use the following special key combinations to enter PC keys not available on standard Macintosh keyboards:

PC Key	ICA Macintosh Client Equivalent
ALT	Command (also known as the Apple key)
Insert	0 (Zero on the numeric keypad; NUM LOCK must be off)
Del	Dot on the numeric keypad; NUM LOCK must be off
Mouse right-click	= key on numeric keypad, or Option and mouse click

Multiple Session Support

You can run multiple connections concurrently on the desktop. The sessions are managed automatically, by the *ICA Connection Center*. When you have more than one session in operation, each one appears as a separate entity in the Macintosh Finder menu.

Note The ICA Connection Center allows up to 128 concurrent sessions, but the amount of available memory also limits the number of connections.

Deploying the ICA Macintosh Client



Overview

This chapter explains how to install the Citrix ICA Macintosh Client. Topics covered in this chapter include:

- System requirements
- Installing the ICA Macintosh Client
- Preparing for Auto Client Update
- Using the Client Update Database
- Uninstalling the ICA Macintosh Client

About Installation

There are two ways to install the ICA Client:

- If your users are installing the client on machines that do not already have an ICA Client installed on them, you must install the client manually. See “Installing the ICA Macintosh Client.”
- If your users already have the ICA Client Version 4.1 or later, they can update it automatically to this version if you add this client to the Client Update Database. See “Using the Client Update Database.”

System Requirements

Systems running the ICA Macintosh Client require the following:

- Macintosh processor: 68030/040 or PowerPC
- Operating system: System 7.1 or later
To run the ICA Macintosh Client on System 7.1, the Thread Manager system extension must be installed. Thread Manager is available from Apple's Web site.
- 8MB of available memory
- 3MB of free disk space
- 16 or 256 color (or better) video display
- Open Transport TCP/IP Version 1.1.1 or later
- A network interface card (NIC) for network connections to Citrix servers
— or —
A modem and PPP networking software for serial connections to Citrix servers

Installing the ICA Macintosh Client

➤ **To install the ICA Macintosh Client**

If you are installing the ICA Macintosh Client from a downloaded .hqx file, begin with Step 4.

1. Insert the Citrix ICA Client CD-ROM in the client system's CD-ROM drive. Double-click the CD-ROM icon on your desktop.
2. Open **ICAINST**, open **en** and then double-click **ICAMAC**.
3. Copy the file **Macica_sea.hqx** to a temporary folder on the Macintosh hard disk.
4. Decompress **Macica_sea.hqx** using an appropriate utility.
5. Open the Citrix ICA Client folder created by the decompression utility.
6. Double-click the Installer icon to run the installation program.
7. Follow the directions on your screen.

Preparing for Client Auto Update

The ICA Macintosh Client can be set up so that you can automatically update it from a *WINFRAME* or MetaFrame for Windows server when a newer version is available. This means that you can “push” a new version of the client software from a central database to the workstation instead of installing the client manually at each workstation. You must be root to deploy the ICA Client.

Note ICA Client Auto Update is not supported by servers running *WINFRAME* 1.7 or earlier, or on MetaFrame for UNIX 1.0 or 1.1 servers.

- **To enable the ICA Macintosh Client software for automatic update**
1. Start the Citrix ICA Client Editor (see “Starting the ICA Client Editor” for instructions).
 2. From the Citrix ICA Client Editor **Options** menu, select **Default Settings**. The **Citrix ICA Client Editor Default Settings** dialog box appears.
 3. From the pop-up list at the top of the **Default Settings** dialog box, select the **Preferences** page.
 4. Select **Allow Automatic Client Updates** to allow the client to be automatically updated with a newer version from the Citrix server.

Using the Client Update Database

If the version of the ICA Client currently installed supports client auto update, future versions of the ICA Client can be automatically downloaded when a user connects to a *WINFRAME* or MetaFrame for Windows server. The new versions of the ICA Clients are downloaded from the Client Update Database.

Note ICA Client Auto Update is not supported by servers running *WINFRAME* 1.7 or earlier, or on MetaFrame for UNIX 1.0 or 1.1 servers.

ICA Client Auto Update for Macintosh works with TCP/IP and supports the following features:

- Automatically detects older client files
- Provides full administrative control of client update options for each client
- Updates clients from a single database on a network share point
- Safely restores older client versions when needed

Note Client Auto Update is used to update client files to newer versions of the same product and model.

The Citrix ICA Client Update Process

Each ICA Client has a product number, model number, and version number. The ICA Client product and model numbers uniquely identify the ICA Client.

Product/Model number	Platform
1/1	ICA Client for DOS
14/1	ICA 32-bit Client for DOS
1/2	ICA Client for Win16
1/3	ICA Client for Win32
82/1	ICA Client for Macintosh

The version number is the release number of the ICA Client.

The process of updating ICA Clients with new versions uses the standard ICA protocol.

- The MetaFrame for Windows server queries the ICA Client when the user logs on. If the server detects that the ICA Client is up-to-date, it continues the logon transparently.
- If an update is needed, by default, the MetaFrame for Windows server informs the user of the new client and asks to perform the update. You can specify that the update occurs without informing the user and without allowing the user to cancel the update.
- By default, the user can choose to wait for the client files to finish downloading or to download the files in the background and continue working. Users connecting to the MetaFrame for Windows server with a modem get better performance waiting for the client update to complete. You can force the client update to complete before allowing the user to continue.
- During the client update, new ICA Client files are copied to the ICA Client device. The administrator can force the user to disconnect and complete the update before continuing the session. The user must log on to the server again to continue working.
- After disconnecting from the server, the ICA Client completes the update. All client programs must be closed before the ICA Client can be updated.
- In case of a problem, the existing ICA Client files are saved to a folder called Backup in the ICA Client directory.

Configuring the Client Update Database

During MetaFrame for Windows setup, a client update database is created that contains the Citrix ICA Win32, Win16, Windows CE, Macintosh, UNIX, and DOS Clients. By default, the update database is configured to update older client versions.

You can configure a client update database on each MetaFrame for Windows server in a server farm, or a single client update database on a central network share. With a single database, you can configure updates once for all servers.

Use the ICA Client Update Configuration utility to:

- Create a new client update database
- Set a default client update database
- Configure database properties
- Add ICA Clients to the update database
- Remove ICA Clients from the update database
- Configure client update options

➤ **To start the ICA Client Update Configuration utility**

1. From a MetaFrame for Windows server: Click the **Start** button, point to **Programs**, and then point to **MetaFrame Tools**. Click **ICA Client Update Configuration**.

From a *WINFRAME* server: In the **Administrative Tools** folder, double-click **ICA Client Update Configuration**.

2. The **ICA Client Update Configuration** dialog box appears.

The location of the current client update database is shown in the status bar. This is the database the server uses to update ICA Clients. The main window shows the ICA Clients currently configured in the database.

Creating a New Client Update Database

The default location of the client update database on the server is %SystemRoot%\Ica\Clientdb. A new database can be created on the local server hard drive or on a shared network drive. Multiple servers can be configured to use one shared client update database.

- **To create a new client update database**
 1. From the **Database** menu, click **New**. The **Path for the new Client Update Database** dialog box appears.
 2. Enter a path for the new client update database and click **OK**.

A new client update database is created in the specified folder and the new database is opened.

Setting a Default Database

An existing client update database can be used by multiple Citrix servers. If the client update database is on a shared network drive, use the ICA Client Update Configuration utility to configure all Citrix servers to use the shared database.

- **To specify a new default database for one or more Citrix servers**
 1. From the **Database** menu, click **Open**. The **Open Existing Database** dialog box appears.
 2. Specify the path to the database that will be used as the default and click **OK**.
 3. From the **Database** menu, click **Set Default**. The **Set Default Database** dialog box appears.
 4. Select the **Set as Default Database on Local Machine** check box to make the currently opened database the default database.

Tip You can also set other Citrix servers to use the currently open database as the default database. Double-click on a domain name to view the servers in that domain. Click on a server to set its default database to the currently open database. You can select multiple servers by holding down the CTRL key.

5. Click **OK**.

Configuring the Properties of the Client Update Database

Use the **Database Properties** dialog box to configure the current client update database.

➤ **To configure the properties of the Client Update Database**

On the **Database** menu, click **Properties**. The **Database Properties** dialog box appears.

To disable this client update database, clear the **Enabled** check box. ICA Clients are not updated if the database is not enabled.

The **Default update properties for clients** options specify the default behavior for ICA Clients added to the update database. If you change the properties of an individual client in the database, those properties will override the default properties.

- In **Client Download Mode**, click **Ask user** to allow the user to choose to accept or postpone the client update. Click **Notify user** to notify the user of the client update and require the update. Click **Transparent** to update the user's ICA Client without notifying the user.
- In **Version Checking**, click **Update older client versions only** to update client versions that are older than the new client. Click **Update any client version** to update all client versions to this version of the client. Use this option to force an older client to replace a newer client.
- In **Update Mode**, select the **Force Disconnection** check box to require users to disconnect and complete the update. By default, users can choose whether to disconnect and complete the client update after the new client files are downloaded. Clear the **Allow background download** check box to force users to wait for all client files to download before continuing. By default, users can choose to download new client files in the background and continue working.
- Select the **Log Downloaded Clients** check box to write an event in the event log when an ICA Client is updated.
- By default, errors that occur during a client update are written to the event log. Clear the **Log Errors During Download** check box to turn off error logging.
- Specify the maximum number of simultaneous updates per Citrix server. When the specified number of client updates are occurring, new client connections are not updated. When the number of client updates drops below the specified maximum, new client connections are updated.

Adding and Removing ICA Clients From the Database

Use the ICA Client Update Configuration utility to add ICA Clients to and remove them from the database.

➤ **To add a new ICA Client to the client update database**

1. From the **Client** menu, click **New**. The **Description** dialog box appears.

Enter the path to the client installation file in **Client Installation File** or click **Browse**.

The client installation file, Update.ini, is in a standard location for your operating system: for example
%SystemRoot% \System32\Clients\ica\ica32\disks\disk1.

2. After you specify the client installation file, the **Client Name**, **Product**, **Model**, **Version**, and icon of the selected client appear.

You can also modify the **Comment** used for this client. After making any changes, click **Next** to continue.

3. The **Update Options** dialog box appears.

The **Update Options** dialog box controls how the client update occurs. These options for each client override the settings specified for the database as a whole in the **Database Properties** dialog box.

In **Client Download Mode**, click **Ask user** to give the user the option to accept or postpone the client update. Click **Notify user** to notify the user of the client update and require the update. Click **Transparent** to update the user's ICA Client without notifying the user.

In **Version Checking**, click **Update older client versions only** to update client versions that are older than the new client. Click **Update any client version** to update all client versions to this version of the client. Use this option to force an older client to replace a newer client.

By default, users can choose to disconnect and complete the client update after the new client files are downloaded. Select the **Force Disconnection** check box to require users to disconnect and complete the update.

By default, users can choose to download new client files in the background and continue working. Clear the **Allow Background Download** check box to force users to wait for all client files to download before continuing.

You can optionally enter a message in **Display this message on the user terminal**. The user can view this message at the start of the client update by clicking **More Info** in the dialog box that appears.

Click **Next** to continue.

4. The **Event Logging** dialog box appears.

Auto Client Update uses the Windows event log to report status messages and update errors.

 - Select the **Log Downloaded Clients** check box to write an event in the event log when an ICA Client is updated.
 - By default, errors that occur during a client update are written to the event log. Clear the **Log Errors During Download** check box to turn off error logging.

Click **Next** to continue.
 5. The **Enable Client** dialog box appears.

The client update database can contain multiple clients with the same product, model, and version information. However, only one client of each product, model, and version can be enabled. The enabled client is the one used for the auto client update.

Select the **Enable** check box to update ICA Clients to this client. All other clients of the same product, model, and version are disabled.
 6. Click **Finish** to copy the ICA Client installation files into the client update database.
- **To remove an ICA Client from the database**
1. In **Client Update Configuration**, click on the ICA Client to remove.
 2. From the **Client** menu, click **Delete**. A dialog box displays the selected client information and asks for confirmation.
 3. Click **OK** to remove the client. The ICA Client is now removed from the database.

Changing the Properties of an ICA Client in the Database

Use the **Properties** dialog box to maintain the configuration of an ICA Client in the client update database. The **Properties** dialog box contains four tabs: the **Description** tab, the **Update Options** tab, the **Event Log** tab, and the **Client Files** tab.

- **To modify the properties of an ICA Client in the database**
1. In **ICA Client Update Configuration**, click on the ICA Client to modify.
 2. From the **Client** menu, click **Properties**. The **Properties** dialog box appears.
 - The **Description** tab displays information about the selected client. The **Product**, **Model**, **Version**, and **Client Name** are display-only fields.

Type a new description of the client in **Comment**.

Select the **Enabled** check box to update ICA Clients to this client. All other clients of the same product, model, and version are disabled.

The client update database can contain multiple clients with the same product, model, and version information. However, only one client of each product, model, and version can be enabled. The enabled client is the one used for the auto client update.

- The **Update Options** tab configures how the client is updated.

In **Client Download Mode**, click **Ask user** to give the user the option to accept or postpone the client update. Click **Notify user** to notify the user of the client update and require the update. Click **Transparent** to update the user's ICA Client without notifying the user.

In **Version Checking**, click **Update older client versions only** to update client versions that are older than the new client. Click **Update any client version with this client** to update all client versions to this version of the client. Use this option to force an older client to replace a newer client.

By default, users can choose to disconnect and complete the client update after the new client files are downloaded. Select the **Force Disconnection** check box to require users to disconnect and complete the update.

By default, users can choose to download new client files in the background and continue working. Clear the **Allow Background Download** check box to force users to wait for all client files to download before continuing.

You can optionally enter a message in **Display this message on the user terminal**. The user can view this message at the start of the client update by clicking **More Info** in the dialog box that appears.

- The **Event Logging** tab configures the events to log for the client update. Auto Client Update uses the Windows event log to report status messages and update errors.

Select the **Log Downloaded Clients** check box to write an event in the event log when an ICA Client is updated.

By default, errors that occur during a client update are written to the event log. Clear the **Log Errors During Download** check box to turn off error logging.

- The **Client Files** tab displays the individual files for the ICA Client.

The client update database stores the **File Name**, **Group**, **Flags**, **FileSize**, and **File CRC** for each file of an ICA Client.

Uninstalling the ICA Macintosh Client

To uninstall the ICA Macintosh Client, delete the folder containing the client.

Note You can use the Installer to remove items that it has installed, using the **Custom Remove** tab. However, this will not remove clients that were installed using Auto Client Update.

CHAPTER 3

Configuring the ICA Macintosh Client



Overview

This chapter describes how to configure the ICA Macintosh Client. Topics covered in this chapter include:

- Starting the ICA Client Editor
- Creating a connection file
- Starting an ICA session
- Mapping client devices
- Printing from the Macintosh Client
- Configuring default settings
- Changing a specific connection file
- Improving security

Starting the ICA Client Editor

You use the ICA Client Editor to create and configure connection files. A connection file is a file containing configuration options that define the attributes of an ICA session that you run on a Citrix server. These attributes include window size and color, initial application and working directory, and client drive and printer mapping preferences.

Connection files appear as icons on the Macintosh desktop or in a specified folder.

➤ **To start the ICA Client Editor**

Double-click the Citrix ICA Client Editor icon in your ICA Macintosh Client installation directory.

Making a Connection

You can create two types of connections to Citrix servers: ICA connections and published applications.

- An ICA connection lets a user access the desktop of a Citrix server. The user can run any applications available on the desktop, in any order.
- A published application is a predefined application and its associated environment.

This section describes how to create a basic connection file and start an ICA session.

Creating a Basic Connection File

First, you need to identify the server or published application to which you want to connect using this connection file. You can also provide optional user details that allow you to log on automatically.

➤ **To create a connection file**

1. In your ICA Macintosh Client installation folder, double-click **Citrix ICA Client Editor**. The **Citrix ICA Client Editor** dialog box appears with the **Network Connection** page selected:

The screenshot shows the Citrix ICA Client Editor dialog box. The title bar reads "Citrix ICA Client Editor : untitled". The main window has a "Network Connection" dropdown menu. Below this, there is a "Server:" label followed by a text box containing "198.3.235.23" and a small dropdown arrow. Underneath are two radio buttons: "Server" (which is selected) and "Published Application". A section labeled "Optional:" contains three text boxes: "Username:", "Domain:", and "Password:". At the bottom of the dialog, there is a checkbox labeled "Quit after connect" and three buttons: "Connect", "Quit", and "Save".

2. Click **Server** to connect to a Citrix server or **Published Application** to connect to a published application.
3. In the **Server** box, type the name or IP address of the Citrix server, or the name of the published application. If server browsing is possible, you can click the button to the right of the **Server** box and select the name from a list.
4. To enable automatic logon to the Citrix server when you use this connection file, enter your user name, the domain (if required), and your password in the appropriate boxes. If you leave these boxes blank, the Citrix server prompts for this information each time you make a connection using this file.
5. Click **Save**. Select a location in which to save the connection file. By default, the **Save connection as** box displays the Citrix server or published application name, but you can give the file a different name if you prefer.

You can click **Connect** to start the ICA session immediately. If **Quit after connect** is selected, the ICA Client Editor exits when the connection is made. A dialog box appears allowing you to save the connection file, if you have not already done so.

6. Click **Quit** to exit the ICA Client Editor.

In addition to these basic settings, each connection file is configured with default settings that control aspects such as window properties and security features. You can change these defaults (see “Configuring Default Settings for All Connections”), or configure a specific connection file to override some of the defaults (see “Configuring an Existing Connection File”).

Starting an ICA Session

When you have one or more connection files in place, you can start an ICA session on a Citrix server.

➤ **To start an ICA session**

From within the **Citrix ICA Client Editor**, choose **Open** from the **File** menu and select a connection file. From the **Network Connection** page, click **Connect**.

— or —

From the desktop, double-click the connection file, or drag and drop it onto the Citrix ICA Connection Center icon.

Note If you cannot connect to a Citrix server, you may need to change the Server Location (see “Configuring Business Recovery”) or SOCKS proxy details (see “Improving Security”).

Mapping Client Devices

The Citrix ICA Macintosh Client supports client device mapping for connections to *WINFRAME* and MetaFrame for Windows servers. *Client device mapping* allows a remote application running on the Citrix server to access devices attached to the local client computer.

This section includes more information about:

- Mapping client drives
- Mapping client COM ports
- Mapping client audio

Note Client device mapping is not available when connecting to a MetaFrame for UNIX 1.0 or 1.1 server.

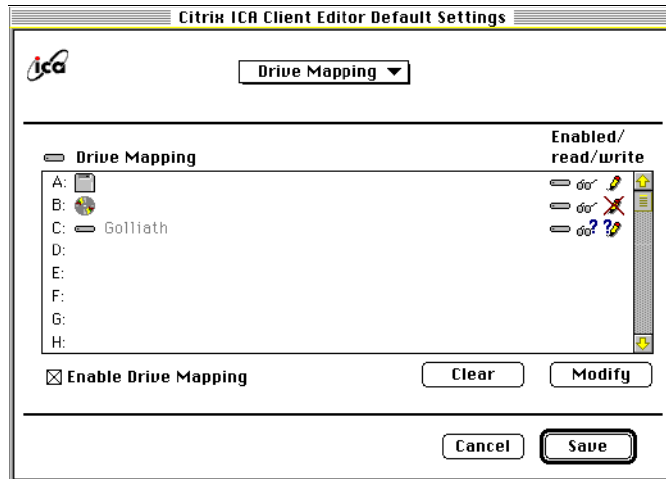
Mapping Client Drives

Client drive mapping allows you to access the local disk drives of the client computer from ICA sessions. When both the Citrix server and ICA Macintosh Client are configured to allow client drive mapping, you can access locally stored files, work with them from ICA sessions, and then save them either on a local drive or on a drive on the Citrix server

➤ **To map a folder on the Macintosh hard disk to your ICA session**

1. Start the Citrix ICA Client Editor
2. From the Citrix ICA Client Editor **Options** menu, select **Default Settings**.

3. In the **Citrix ICA Client Editor Default Settings** dialog box, select **Drive Mapping** from the pop-up menu.



For each server drive letter, the **Drive Mapping** list shows the disk or path name of the Macintosh folder mapped to the drive. In the **Enabled/read/write** column, icons display whether each mapped drive is enabled for use and what type of access you have to the drive. Items you cannot change (such as your hard drive) are grayed out. Items that are no longer available are in italics.

Drives A:, B:, and C: are initially mapped, as follows:

Drive	Mapped to
A:	Macintosh removable media drive (for example, floppy or Zip). Where there is more than one removable drive, you can change the one to which drive A: is mapped from within an ICA session. From the Drives menu, select Drive Mappings , then choose Client A Diskette to display the options. Hold down the Option key and select the drive you require.
B:	Permanently mapped to the Macintosh internal CD or DVD drive.
C:	Permanently mapped to the Macintosh hard disk.

4. Select an available drive letter.
5. Click **Modify**. Select the folder on the Macintosh hard disk to map and click the **Select** bar. The mapped folder appears in the **Drive Mapping** list. If the drive letter you selected is not available on the Citrix server, the specified folder is mapped to another free drive letter.
6. Click **Save**. Log off from any ICA connections already established and reconnect.

➤ **To view mapped client drives when connected to a MetaFrame server**

From within the ICA session, double-click **My Computer** on the desktop. The **My Computer** window appears.

Citrix servers can be configured to remap their server drives. When server drives are remapped, the local drives may take different drive letters.

Published applications and Citrix server connections that have an initial program configured offer you the same access to your local drives. When connected to published applications, a user can access local drives in the same way as when using applications running locally.

Mapping Client COM Ports

Client COM port mapping allows users to access serial devices on the client computer as if they were connected to the Citrix server.

Note Client COM port mapping is not supported when connecting to MetaFrame for UNIX 1.0 and 1.1 servers. It is also not TAPI-compatible. Applications that communicate with devices using TAPI are not supported.

➤ **To map a client COM port**

1. Start the Citrix ICA Client Editor.
2. From the Citrix ICA Client Editor **Options** menu, select **Default Settings**.
3. In the **Citrix ICA Client Editor Default Settings** dialog box, select the **COM Port Mapping** page.
4. Select the COM port you want to configure. This is a virtual client COM port that appears in the ICA session. It does not refer to an actual port on either the client or server computers.
5. Click **Modify** to map a local port to the selected COM port. A dialog box appears.
6. Select the physical port to associate with the selected COM port and click **OK**.
7. Map other ports as necessary and then click **Save** to save the new settings.

➤ **To use a mapped client COM port from within an ICA session**

1. Start the Citrix ICA Client and log on to a Citrix server.
2. Start a command prompt: on *WINFRAME*, double-click **Command Prompt** in the **Main** program group. On MetaFrame, click **Start**, then click **Programs**, then click **Command Prompt**.
3. At the prompt, type **net use comx: \\client\comz:** where *x* is the number of the COM port on the server (ports 1 through 9 are available for mapping) and *z* is the number of the client COM port (ports 1 through 4 are available).

4. To confirm the operation, type **net use** at the prompt. The list that appears contains mapped drives, LPT ports, and mapped COM ports.
5. Use this mapped COM port as you would a COM port on the Citrix server.

Mapping Client Audio

Client audio mapping enables a user at the client workstation to hear the sounds and audio from the application they are using, even though the application is running on the Citrix server.

Note Client audio mapping is not supported when connecting to MetaFrame for UNIX 1.0 and 1.1 servers.

Client audio mapping can cause excessive load on the Citrix servers and the network. The higher the audio quality, the more bandwidth is required to transfer the audio data. Higher quality audio also uses more server CPU to process. Three different audio quality settings are available, or you can disable client audio mapping completely.

An administrator can set the audio quality or enable/disable client audio mapping on the Citrix server. A user can set the audio quality or enable/disable client audio mapping for a connection file from the client workstation. If the client and server audio quality settings are different, the lower of the two qualities is used.

The client audio quality options are:

- **High.** This setting is recommended only for connections where bandwidth is plentiful and sound quality is important. This setting allows clients to play a sound file at its native data rate. Sounds at the highest quality level require about 1.3Mbps of bandwidth to play clearly. Transmitting this amount of data can result in increased CPU utilization and network congestion.
- **Medium.** This setting is recommended for most LAN-based connections. This setting causes any sounds sent to the client to be compressed to a maximum of 64Kbps. This compression results in a moderate decrease in the quality of the sound played on the client computer. The host CPU utilization will decrease compared with the uncompressed version, due to the reduction in the amount of data being sent across the wire.
- **Low.** This setting is recommended for low-bandwidth connections, including most modem connections. This setting causes any sounds sent to the client to be compressed to a maximum of 16Kbps. This compression results in a significant decrease in the quality of the sound. The CPU requirements and benefits of this setting are similar to those of the Medium setting; however, the lower data rate allows reasonable performance for a low-bandwidth connection.

- **To enable or disable ICA Client audio on a MetaFrame for Windows server**
 1. Click **ICA Settings** in Terminal Server Connection Configuration.
 2. Select an option from the **Client Audio Quality** drop-down list.
- **To enable or disable ICA Client audio on a WINFRAME server**
 1. Click **ICA Settings** in Citrix Connection Configuration.
 2. Select an option from the **Client Audio Quality** drop-down list.
- **To configure audio mapping for a specific connection file**
 1. Start the **Citrix ICA Client Editor** and open the connection file you want to change.
 2. Select **Connection Properties** from the pop-up list in the **ICA Client Editor** dialog box.
 3. Select **Enable Sound** to enable sound support.
 4. Set **Quality** to **High**, **Medium**, or **Low**, depending on the available bandwidth.

Printing From the Macintosh Client

You can access printers attached to your client computer from an ICA session. When a Citrix server is configured to allow client printer mapping, applications running remotely on the Citrix server can print to local printers. With the Citrix ICA Macintosh Client, you can print to a PostScript printer or to a PC printer connected to the Macintosh serial port.

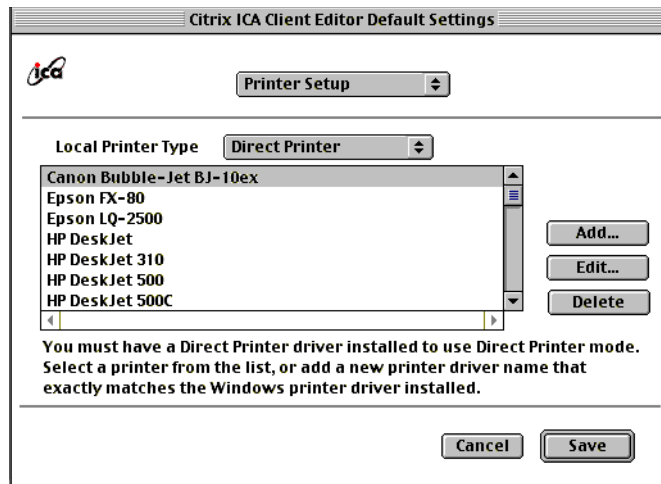
You can disable printing for individual connection files in the **Connection Properties** page of the **Citrix ICA Client Editor** dialog box. For instructions, see “Configuring an Existing Connection File.”

Note Printing to a PC printer requires the PowerPrint package from Infowave Wireless Messaging Inc. (<http://www.infowave.com>).

After configuring client printing, you must log off and then reconnect any active ICA sessions for the changes to take effect. Changes made to your printer mapping configuration apply to all connection files.

- **To configure a local printer for client printing**
 1. If necessary, install the appropriate printer driver on your Macintosh and select it in the Macintosh Chooser.
 2. Using SimpleText or any other suitable application, verify that you can print to the printer from your Macintosh.

3. Start the Citrix ICA Client Editor.
4. From the Citrix ICA Client Editor **Options** menu, select **Default Settings**.
5. In the **Citrix ICA Client Editor Default Settings** dialog box, select **Printer Setup** from the pop-up menu. The **Printer Setup** screen appears.



6. In the **Local Printer Type** box, select **PostScript Printer** to map a local PostScript printer or **Direct Printer** to map a local PC printer. To disable printing for all ICA sessions, select **None**.
7. Select your printer from the list. If it is not listed, click **Add...** and type the name exactly as it appears in the Citrix server's list of printer drivers. Click **OK** to return to the **Default Settings** dialog box.

To see a list of printer drivers on a MetaFrame for Windows server, first connect to the server using the Citrix ICA Client. On a *WINFRAME* server, start Print Manager and run the Create Printer wizard. The driver list contains printer names as they should be specified. On a MetaFrame server, click **Printers** in Control Panel. Start the Add Printer wizard and continue through its screens until you reach the screen that contains the list of printers by manufacturer.

8. Click **Save**.

If your client printer is not automatically available on the Citrix server, you can manually add it in the ICA session. Use the following procedures to manually add a client printer.

Mapping Client Printers on MetaFrame for Windows and WINFRAME

Client printer mapping lets users access spooled printers available to the workstation during ICA sessions. When a Citrix server is configured to allow client printer mapping, applications running remotely on the Citrix server can print to a spooled printer.

- **To map a local printer on a MetaFrame for Windows server**
 1. From the UNIX workstation, start an ICA connection and log on to the MetaFrame server.
 2. Click **Start** on the taskbar, point to **Settings**, then click **Printers**.
 3. In the **Printers** window, you will see an icon for a network printer with a name similar to *workstation#printer*, where *workstation* is the UNIX workstation name and *printer* is the UNIX name for the printer.
 4. If no client printer is available, double-click **Add Printer**. The Add Printer Wizard appears.
 5. Click **Network printer server** and then click **Next**.
 6. Double-click **Client Network** and then double-click **Client**.
 7. Select the printer from the list displayed. Spooled printers available on the UNIX workstation have a name similar to *workstation#printer*. Click **OK**.
 8. If you want this printer to be the default printer, click **Yes** and then click **Next**.
 9. Click **Finish**.

- **To map a local printer on a WINFRAME server**
 1. Log on to the *WINFRAME* server.
 2. In the **Main** program group, double-click **Print Manager**. In the **Printer Manager** window, you will see an icon or open dialog box for a network printer with a name similar to *workstation#printer*, where *workstation* is the UNIX workstation name and *printer* is the UNIX name for the printer.
 3. If no client printer is available, select **Connect to Printer** from the **Printer** menu.
 4. From the **Shared Printer** list, double-click **Client Network** and then double-click **Client**.
 5. Select the client printer icon, which will have a name similar to *workstation#printer*, and click **OK**.
 6. If you want this printer to be your default printer, select it from the **Default** menu at the top of the **Printers** window.

Mapping Client Printers on MetaFrame for UNIX

Before users can print to a client printer from MetaFrame for UNIX, printing must be enabled by the administrator. This section describes how to enable printing on the server. It describes how users can list available client printers and print files from the command line or from applications.

In a UNIX environment, the application performs the print rendering. The printer driver is specified inside the application or, in the case of a desktop utility, raw text is generated.

Note For further information about printing on MetaFrame for UNIX Operating Systems, see the *MetaFrame Administrator's Guide* and the manual pages.

Setting up Printing

➤ **To check if client printing is currently enabled or disabled**

1. Log on to the MetaFrame server as a Citrix server administrator.
2. At the command prompt, type:
`ctxcfg -p list`

➤ **To enable or disable client printing**

1. Log on to the MetaFrame server as a Citrix server administrator.
2. At the command prompt:

To	Use the command
Enable client printing	<code>ctxcfg -p enable</code>
Disable client printing	<code>ctxcfg -p disable</code>

➤ **To display mapped client printers**

At the command prompt, type:

```
ctxprinters
```

A list of printers configured on the client and mapped for use from the ICA session is displayed. **(default)** is displayed after the printer that is the default. The following information is shown for each printer:

- Printer name or printer port (for example, lpt1). This can be used in the **ctxlpr -P** command to specify a printer other than the default.
- Printer driver name. This is for information only.
- Printer connection description. This is for information only.

Using Printing

➤ To print a file from an ICA Client session

1. At the command prompt, type:

```
ctxprinters
```
2. From the results of `ctxprinters`, identify the printer or printer port that you want to use. To print to a printer other than the default, note the printer name—the printer name is the first item in the `ctxprinters` listing.
3. At the command prompt:

To	Use the command
Print the file named <i>filename</i> to the default printer.	<code>ctxlpr filename</code>
Print a series of files to the default printer. Each file is treated as a separate print job.	<code>ctxlpr filename filename</code>
Print a file to a printer (or printer port) other than the default. This is the printer name or printer port shown in the first column of the output from <code>ctxprinters</code> .	<code>ctxlpr -P [Printername Printerport] filename</code>
Print a file in the background.	<code>ctxlpr -b filename</code>
Print a file only if the printer is not in use. Use this option to stop an application waiting while other printer jobs are handled. If the printer is in use, an error message is displayed.	<code>ctxlpr -n filename</code>

➤ To print from applications

The exact configuration of how to set up printing from applications depends on the behavior and user interface of the UNIX application.

If the user interface for an application allows you to specify the actual printer command to use when printing, you can configure client printing by replacing the **lpr** or **lp** command with the **ctxlpr** command.

When a user connects to the server and prints from the application in a session, the server redirects the output to the mapped client printer.

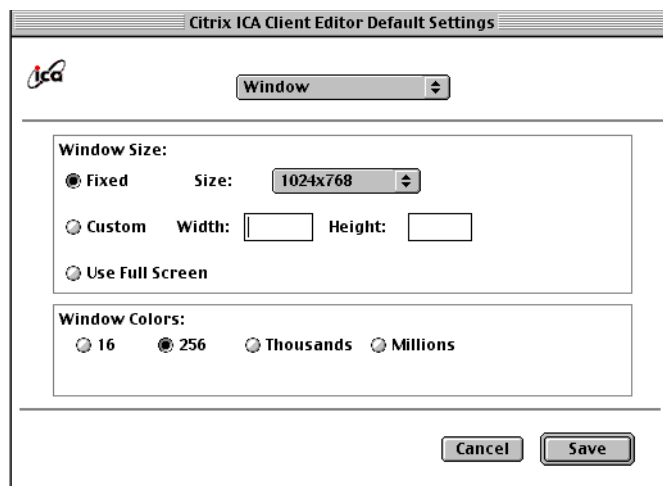
Often, in this type of application, you can also specify the command line modifiers on a different line. You can use the same switches for **ctxlpr** as when printing from the command line. For example, use **-P** with a printer name (or printer port) to print to a printer other than the default; use **-b** for background printing, and so on.

Tip If the user interface of an application does not allow you to specify the actual printer command to use when printing, determine if the application (or window manager) uses a configuration file where you can replace the **lpr** command functionality with **ctxlpr**.

Configuring Default Settings for All Connections

You can specify default settings that are applied to all ICA connections. You can override some of these settings for specific connections - see “Configuring an Existing Connection File” for details.

- To configure default settings
 1. Start the Citrix ICA Client Editor.
 2. From the Citrix ICA Client Editor **Options** menu, select **Default Settings**. The **Citrix ICA Client Editor Default Settings** dialog box appears.



The Citrix ICA Client Editor Default Settings dialog box has the following pages, corresponding to the properties you can control:

Use this	To configure
Window	Default size and color depth to use for ICA session windows.
Preferences	Options for playing Windows alert sounds, automatic client update, text-only copying from sessions, and the default encryption level.
Printer Setup	Settings for client printing ¹
Drive Mapping	Settings for client drive mapping ²

Use this	To configure
Disk Cache	Settings for persistent bitmap cache
Server Location	Settings for Business Recovery, SOCKS proxy configuration ³ , and alternate address remapping
Com Port Mapping	Settings for client COM port mapping ²
Hot Keys	Settings to change the hotkeys for the client.
Japanese Hot Keys	Settings to change the hotkeys assigned to Japanese functions.

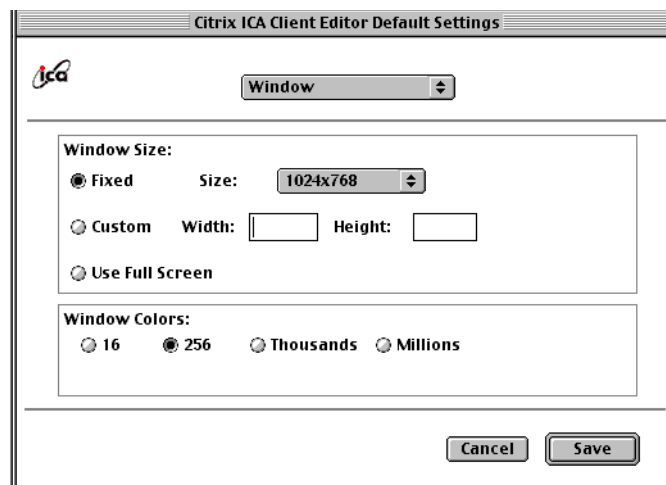
¹ Client printing is described in "Printing From the Macintosh Client."

² Client device mapping is described in "Mapping Client Devices."

³ SOCKS proxy configuration is described in "Improving Security."

Configuring Default Window Settings

You can change the size and color depth of the window used for ICA connections.



➤ To change the default window settings

1. If the **Citrix ICA Client Editor Default Settings** dialog box is not displayed, from the Citrix ICA Client Editor **Options** menu, select **Default Settings**.
2. From the pop-up list at the top of the **Default Settings** dialog box, select the **Window** page.
3. To change the **Window Size**, do one of the following:
 - Select **Fixed**, then choose one of the available sizes from the list box.
 - Select **Custom**, then type the required dimensions, in pixels, in the **Width** and **Height** boxes. The maximum window size is determined by the server.

- Select **Use Full Screen** to use the entire area of your screen for the ICA connection.

Note If you select **Use Full Screen**, the menu bar is hidden when you run the Citrix ICA Macintosh Client. To access the Macintosh menu bar, hold down the Option and Control keys. To make the menu bar display permanently, open the **File** menu in the Citrix ICA Macintosh Client and choose **Best**.

4. Use **Window Colors** to set the number of window colors to 16, 256, Thousands, or Millions.

Note For best performance, **Window Colors** should match the number of colors set in your Macintosh **Monitors** control panel. When this is the case, a diamond shape is displayed in the title bar during an ICA session.

5. Click **Save**.

Configuring Default Preferences

You can configure settings for playing Windows alert sounds, automatically quitting the ICA Client after the ICA session ends, automatic client update, text-only copying from sessions, and the default encryption level.

➤ To configure the default preferences

1. If the **Citrix ICA Client Editor Default Settings** dialog box is not displayed, from the Citrix ICA Client Editor **Options** menu, select **Default Settings**.
2. From the pop-up list at the top of the **Default Settings** dialog box, select the **Preferences** page.

Change the settings as required. You can do the following:

Use this	To configure
Enable Windows Alert Sounds	Select this to play the default Macintosh beep when an application in the ICA session triggers the default Windows beep.
Allow Automatic Client Updates	Select this to allow the Citrix server to update the Citrix ICA Macintosh Client when newer versions become available. When the server detects an outdated client version, it notifies the user that a newer version is available and replaces the Citrix ICA Macintosh Client files. Note that this feature is not supported by servers running <i>WINFRAME</i> 1.7 or earlier, or on MetaFrame for UNIX 1.0 or 1.1 servers.

Use this	To configure
Copy from Session as Text Only (No Graphics)	Select this to ensure that any material you copy from the session to the local desktop is pasted in text format rather than picture format. (If only graphics format is available, the material is still copied in graphics format.)
Encryption Level	Set the default Encryption Level for connections. Note that the server must be configured to allow the selected encryption level or greater. To enable encryption levels higher than Basic, the Citrix server must support RC5 encryption. This support is included with SecureICA Services and Feature Release 1. SecureICA Services is not supported by all Citrix servers. For specific connections, you can either use this default or set a different level; see "Improving Security."

3. Click **Save**.

Configuring Disk Caching

The Citrix ICA Macintosh Client stores commonly-used graphical objects such as bitmaps in a local cache on the client computer's hard disk.

Note Although you can configure the default disk cache settings, disk caching is not used unless you enable it for a particular connection file. Disk caching for individual connection files is enabled on the **Connection Properties** page of the **ICA Client Editor** dialog box. See "Configuring an Existing Connection File."

- **To configure disk caching:**
 1. If the **Citrix ICA Client Editor Default Settings** dialog box is not displayed, from the Citrix ICA Client Editor **Options** menu, select **Default Settings**.
 2. From the pop-up list at the top of the **Default Settings** dialog box, select the **Disk Cache** page.
 3. Change the settings as required. You can do the following:
 - Change the **Amount of disk space to use** by adjusting the percentage of the total size of the disk that contains the cache folder.
 - Use a different **Disk cache folder** (the default directory where the cached data is stored). To do this, click **Change Folder...**, browse and select.
 - For **The minimum size bitmap that will be cached is...**, specify the size (between 2 and 64 kilobytes) of the smallest bitmap to be cached to disk.
 - To remove all cached data from the client computer, click **Clear Disk Cache Now**.
 4. Click **Save**.

Configuring Business Recovery

This feature provides consistent connections to published applications in the event of a master ICA Browser server disruption. You can define up to three groups of Citrix servers to which you want to connect: a primary and two backups. Each group can contain up to five servers.

When you configure Business Recovery, the client attempts to contact all the servers within the Primary group simultaneously (broadcasting); the first server to respond acts as the master ICA Browser. If none of the servers responds, the client attempts to contact all the servers within the Backup 1 group. If there is still no response, the client attempts to contact all of the servers in the Backup 2 group. When a server responds, the client queries the server for the address of the server on which to run the published application. This process is repeated each time the user attempts to make an ICA connection.

Tip It is a good idea to specify the server address for the Citrix server that functions as the master browser when your network configuration uses routers or gateways, or if you want to eliminate the broadcasts on your network.

➤ **To configure Business Recovery server groups**

1. If the **Citrix ICA Client Editor Default Settings** dialog box is not displayed, from the Citrix ICA Client Editor **Options** menu, select **Default Settings**.
2. From the pop-up list at the top of the **Default Settings** dialog box, select the **Server Location** page.
3. From the **Server Group** list, select the server group you want to configure.
4. Click **Add...** to add a server to the selected group.
5. In the **Server** box, type or select the name of the server, then click **OK**.
6. Add more servers as necessary.
7. To change the protocol used when locating the master browser, click **Network Protocol** and choose a protocol from the drop-down list. If your firewall restricts UDP broadcasts, select **TCP/IP+HTTP** from the list.
8. Click **Save**.

You can specify separate server groups for each protocol.

Configuring Hotkeys

You can change the combination of key presses used for system hotkeys.

- **To display or change the hotkeys:**
 1. If the **Citrix ICA Client Editor Default Settings** dialog box is not displayed, from the Citrix ICA Client Editor **Options** menu, select **Default Settings**.
 2. From the pop-up list at the top of the **Default Settings** dialog box, select the **Hotkeys** page or the **Japanese Hotkeys** page. A dialog box appears, showing the current list of hotkeys.
 3. Highlight the function for which you want to change the hotkey and click **Define...** to display a dialog box for that function.
 4. Select the main key for the function, then use the check boxes to select the additional keystrokes.
 5. Click **OK** to close the dialog box for the function.
 6. Click **Save**.

Configuring an Existing Connection File

This section describes how to change the properties of a specific connection file. Some of these properties override the default settings. For details of the default settings, see “Configuring Default Settings for All Connections.”

“Making a Connection” gives basic instructions for creating a connection file.

- **To edit an existing connection file**
 1. From within the **Citrix ICA Client Editor**, choose **Open** from the **File** menu and select the connection you want to edit.
 2. The **Citrix ICA Client Editor** dialog box appears, showing the current properties of the connection file.
 3. Edit the properties you want to change and then click **Save** to save the connection file, or choose **Save** or **Save As...** from the **File** menu.

You can configure the connection file using the following pages in the **Citrix ICA Client Editor**:

Use this	To configure
Network Connection	The basic settings required to establish a connection with a Citrix server. For details, see “Making a Connection.”
Security	Settings for using a SOCKS proxy server, and encryption levels. For details, see “Improving Security.”

Use this	To configure
Connection Properties	Settings allowing you to control the connection between the Citrix server and the client workstation. For details, see “Configuring Connection Properties.”
Window	The size and color depth to use for ICA session windows for this connection file. See “Configuring Window Properties.”
Application	Allows you to specify the path and file name of an application to be executed after connecting to the Citrix server. For details, see “Configuring Application Properties.”

Configuring Connection Properties

Settings on the **Connection Properties** page allow you to improve performance by reducing bandwidth use. You can also control sound support and enable or disable local printing and drive mapping for this connection file.

➤ To change the connection properties

1. From within the **Citrix ICA Client Editor**, choose **Open** from the **File** menu and select the connection file you want to edit.
2. Select **Connection Properties** from the pop-up list in the **ICA Client Editor** dialog box.
3. Change the settings as required.
4. Click **Save**.

You can configure the following Connection Properties:

Use this	To configure
Use Data Compression	Check this box to enable data compression. Data compression reduces the amount of data sent over the connection but consumes a small amount of processor time to perform the compression and decompression. In high-bandwidth LAN environments where bandwidth consumption is not a concern, disabling data compression may give better performance.
Use Disk Cache for Bitmaps	Check this box to enable persistent bitmap caching. The client stores cached bitmaps in a local directory to reduce the amount of data sent over the connection. Because the cached bitmaps are stored on hard disk, commonly used bitmaps can be displayed more quickly.
Enable Sound / Quality	Use these settings to enable sound support and configure the sound quality. See “Configuring Sound Support”.

Use this	To configure
Disable local printer for connection to this server	Check this box to disable local printing for connections to this server or published application. For more information about local printing, see "Printing From the Macintosh Client."
Disable drive mapping for connection to this server	Check this box to disable drive mapping for connections to this server or published application. For more information about drive mapping, see "Mapping Client Devices."
SpeedScreen	On servers where SpeedScreen Latency Reduction is available, this option allows you to configure the way in which it is used. See "Configuring SpeedScreen Latency Reduction" below.

Configuring Sound Support

You can configure sound support for a connection file using settings on the **Connection Properties** page of the **Citrix ICA Client Editor**.

➤ To configure sound support for a connection file

1. Check the **Enable Sound** box to enable full sound support. All audio played in the ICA session is sent over the ICA connection and played on the client computer. For details of client audio mapping, see "Mapping Client Devices."
2. Use the **Quality** setting to configure the sound quality, by choosing one of the values listed below. For full details of these client audio mapping options, see "Mapping Client Devices."
 - **High.** This value provides the greatest audio quality but should only be used when bandwidth consumption is not a concern.
 - **Medium.** Using this value results in less bandwidth consumption than when using High. Compression of sound data provides greater bandwidth efficiency but reduces sound quality somewhat. This value is recommended for most LAN-based connections.
 - **Low.** This value offers the most efficient use of bandwidth but also decreases sound quality severely. This value is recommended for low-bandwidth connections, including most modem connections.

Configuring SpeedScreen Latency Reduction

On servers where SpeedScreen Latency Reduction is available, you can configure it on the **Connection Properties** page of the **Citrix ICA Client Editor**.

- **Keyboard:** This setting controls *Local Text Echo*. Over high latency connections, users often experience significant delays between when they enter text at the keyboard and when it is echoed or displayed on the screen. Local text echo is an ICA Client option that accelerates the display of the input text on the client device, effectively shielding the user from experiencing latency on the network
- **Mouse: click feedback:** Over high latency connections, users often click the mouse multiple times because there is no visual feedback that a mouse-click resulted in an action. Mouse click feedback provides visual feedback for mouse-clicks. When the user clicks the mouse, the ICA software immediately changes the mouse pointer to an hourglass to show that the user's input is being processed.

➤ **To configure SpeedScreen Latency Reduction for a connection file**

For each of the **Keyboard** and **Mouse** settings, select one of the following:

- **Auto.** If you are not certain of the connection speed, set the mode to **Auto** to turn the feature on or off depending on the latency of the connection.
- **On.** Choose **On** for slower connections (for example, over a WAN or a dial-in connection) to decrease the delay between user input and screen display.
- **Off.** Choose **Off** for faster connections (for example, over a LAN).

Note You can override the selected SpeedScreen mode for the current session by using the Latency Reduction hotkey. See “Configuring Default Settings for All Connections” for details of hotkeys.

Configuring Window Properties

The **Window** page allows you to specify the window size and number of colors used for the ICA Client window.

➤ **To configure the window properties for a connection file**

1. From within the **Citrix ICA Client Editor**, choose **Open** from the **File** menu and select the connection file you want to edit.
2. Select **Window** from the pop-up list in the **ICA Client Editor** dialog box.
3. To change the **Window Size**, do one of the following:
 - Select **Fixed**, then choose one of the available sizes from the list box.
 - Select **Custom**, then type the required dimensions, in pixels, in the **Width** and **Height** boxes. The maximum window size is determined by the server.
 - Select **Use Full Screen** to use the entire area of your screen for the ICA connection.

Note If you select **Use Full Screen**, the menu bar is hidden when you run the Citrix ICA Macintosh Client. To access the Macintosh menu bar, hold down the Option and Control keys. To make the menu bar display permanently, open the **File** menu in the Citrix ICA Macintosh Client and choose **Best**.

4. Use **Window Colors** to set the number of window colors to 16, 256, Thousands, or Millions.

Note For best performance, **Window Colors** should match the number of colors set in your Macintosh **Monitors** control panel. When this is the case, a diamond shape is displayed in the title bar during an ICA session.

5. Click **Save**.

Configuring Application Properties

The **Application** page allows you to specify an application to be executed after connecting to a Citrix server using this connection file. If you specify an application, you do not see the Citrix server desktop when you connect and the connection is closed when you exit from the application.

If you specify an application, no other application can be run in the ICA session. You are not able to use Program Manager on *WINFRAME* or the Windows desktop on *MetaFrame*.

Note The **Application** dialog box is not available when configuring a connection to a published application.

➤ **To configure application properties**

1. From within the **Citrix ICA Client Editor**, choose **Open** from the **File** menu and select the connection file you want to edit.
2. Select **Application** from the pop-up list in the **ICA Client Editor** dialog box.
3. Specify the path and file name of the application to be executed after connecting to the Citrix server.

For example, to launch Microsoft Word automatically after connecting to the Citrix server you might type:

```
C:\WINWORD\WINWORD.EXE
```

4. Specify the working directory to be used for the application in the **Working Directory** box.

Improving Security

This section describes how to configure an ICA connection through a SOCKS proxy server or across a firewall, and how to set encryption. SOCKS proxy servers and firewalls are used on networks to improve security. Encryption increases the security of the ICA connection itself.

Connecting Through a SOCKS Proxy Server

To limit access into and out of your Citrix servers, configure a SOCKS proxy server to handle connections between clients and the server. You can place the proxy server on either side of the firewall, or in some situations, on both sides of the firewall.

If you are using a SOCKS proxy server, you must configure the ICA Macintosh Client to connect to Citrix servers through a SOCKS proxy server. You can configure a default SOCKS proxy for all connections or use a SOCKS proxy only with a specific connection file.

➤ **To configure a SOCKS proxy server for an ICA connection**

1. From within the Citrix ICA Client Editor, choose **Open** from the **File** menu and select the connection file you want to edit.
2. The **Citrix ICA Client Editor** dialog box appears, showing the current properties of the connection file.
3. From the pop-up list at the top of the **ICA Client Editor** dialog box, select the **Security** page.
4. Click **Connect via SOCKS proxy**.
5. In the **Address of proxy to use** box, enter the name or IP address of the SOCKS proxy server.
6. In the **Port** box, enter the proxy server's port number (if it is not 1080).

7. Click **Save** to save the changes to the connection file.
- **To specify a default SOCKS proxy**
1. If the **Citrix ICA Client Editor Default Settings** dialog box is not displayed, from the **Options** menu, select **Default Settings**.
 2. From the pop-up list at the top of the **Default Settings** dialog box, select the **Server Location** page.
 3. Click **Firewalls**.
 4. Click **Connect via SOCKS proxy**.
 5. In the **Address of proxy to use** box, enter the name or IP address of the SOCKS proxy server.
 6. In the **Port** box, enter the proxy server's port number (if it is not 1080).
 7. Click **OK** to close the pop-up dialog box, and then click **Save** to close the **Default Settings** dialog box.

Note Because you can enter only one SOCKS proxy server address, you cannot configure Business Recovery with separate SOCKS settings for different server groups.

Connecting Across a Firewall

If the ICA Client is outside a firewall that uses address remapping, you configure the ICA Client to use the alternate address returned by the master ICA Browser. This is necessary even if you are not using a SOCKS proxy server.

Note You must also use the ALTADDR utility, or ctxalt for MetaFrame for UNIX, to manually set the alternate address for each Citrix server. See the Command Reference appendix of either the *MetaFrame Administrator's Guide* or the *WINFRAME System Guide* for more information.

- **To configure the ICA Macintosh Client to use the alternate address**
1. If the **Citrix ICA Client Editor Default Settings** dialog box is not displayed, from the **Options** menu, select **Default Settings**.
 2. From the pop-up list at the top of the **Default Settings** dialog box, select the **Server Location** page.
 3. Click **Firewalls...** A dialog box appears.
 4. Click **Use alternate address for firewall connection** and then click **OK** to close the dialog box.
 5. In the **Default Settings** dialog box, click **Save** to save the new settings.

Using Encryption

Encryption increases the security of your ICA connection. By default, basic encryption is enabled on all connections. If the Citrix server you are connecting to supports advanced encryption (for example, SecureICA Services), you can use it to improve security.

Note To enable encryption levels higher than **Basic**, the Citrix server must support RC5 encryption. This support is included with SecureICA Services and Feature Release 1. SecureICA Services is not supported by all Citrix servers.

➤ **To change the encryption settings for an ICA connection**

From within the Citrix ICA Client Editor, choose **Open** from the **File** menu and select the connection file you want to edit.

— or —

From the desktop, drag the connection file and drop it onto the Citrix ICA Client Editor icon.

Either choose **Use Default Level** (see “Configuring Default Preferences” for instructions on how to set this default) or select an encryption level from the list box.

Note The server must be configured to allow the selected encryption level or greater.

Using Applications Published on a MetaFrame for UNIX Server

For connections to applications published on a MetaFrame for UNIX server, two additional utilities allow you to configure session display and copy and paste objects between the ICA session and the client device. This section describes how to access and use these tools through the Citrix window manager.

Using the Window Manager




If you are connecting to an application published on a MetaFrame for UNIX server, use the Citrix window manager (ctxwm) to minimize, resize, position and close windows. This section describes how to use the window manager.



Minimizing, Resizing, Positioning, and Closing Windows

When you connect to a published application on a MetaFrame for UNIX server, buttons to minimize, resize, position, and close windows are provided by the Citrix window manager.

➤ **To minimize, resize, position, and close windows**

Use the left mouse button, to click on the following buttons:

To	Click	Note
Minimize published application windows on your desktop.		Windows are minimized as icons on the desktop.
Open a minimized window		Click its button on the taskbar, or its icon on the desktop.
	<i>(Taskbar or Icon)</i>	
Adjust the size of published application windows.		Click and hold down the mouse button, then move the pointer to the edge of the window and drag it in the direction you wish to scale it. The window dimensions are displayed in the top left hand corner. Release the mouse button to apply the resizing. To resize the window proportionately, move the mouse pointer to a corner of the window and drag it.

To	Click	Note
Re-position published application windows	 (Title-bar)	Click and hold down the mouse button, drag the window to the required position on the desktop and release the mouse button.
Close and exit a published application		When you close the last application in a session, after 20 seconds the session disconnects automatically.

Using the Citrix Window Manager Menus

In remote desktop windows, you can use the ctxwm menu system to log off, disconnect, and exit from published applications and connection sessions.

➤ **To access the ctxwm menu system**

1. On a blank area of the remote desktop window, click and hold down the left mouse button. The ctxwm menu is displayed.
2. Drag the mouse pointer over **Shutdown** to display the shutdown options.

➤ **To choose an option from the Citrix window manager menu**

Drag the pointer over the required option to highlight it. Release the mouse button to select the option.

To	Choose
Terminate the connection and all running applications	Logoff
Disconnect the session but leave the application running	Disconnect
Disconnect the session and terminate the application	Exit

Note Your Citrix server may be configured to terminate any applications that are running if a session is disconnected.

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