

Administrator's Guide

Citrix ICA Macintosh Client

Version 4.1

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 Clients 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 Citrix 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.

Conventions

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

Convention	Meaning
Bold	Indicates boxes and buttons, column headings, command-line commands and options, icons, dialog box titles, lists, menu names, tabs, and menu commands.
<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.
...(ellipsis)	Indicates a command element can be repeated.
Monospace	Represents examples of screen text or entries that you can type at the command line or initialization files.
▶	Indicates a procedure with sequential steps.
•	Indicates a procedure with only one step.
▪	Indicates a list of related information, not procedural steps.

The Citrix ICA Client for Macintosh allows users to connect to MetaFrame and *WINFRAME* servers. When describing a feature or procedure common to MetaFrame and *WINFRAME* servers, this manual uses the term *Citrix server*. When describing a feature unique to a MetaFrame or *WINFRAMEWINFRAME* server, this manual specifies either a MetaFrame or *WINFRAME* server.

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 manuals:

- The *Citrix ICA Client Quick Reference Cards* give users step-by-step instructions for using the Citrix ICA Clients to connect to Citrix servers and run published applications.
- The *Citrix ICA Client Administrator's Guides* for the ICA DOS, Win16, Win32, Java, Web, and UNIX Clients.
- For instructions on installing, configuring, and maintaining your Citrix servers, see the documentation included in your MetaFrame or *WINFRAME* package.

This book and other Citrix documentation is available in Adobe PDF format in the documentation directory of your MetaFrame or *WINFRAME* CD-ROM. 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.txt* files for MetaFrame, *WINFRAME*, and the Citrix ICA Clients for any last-minute updates, installation instructions, 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:

- 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

Year 2000 Readiness

For a detailed description of the Year 2000 Readiness of Citrix products, see our Web site at <http://www.citrix.com/misc/y2000.htm>.

C H A P T E R 1

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 printer mapping
 - Client COM port mapping
- Sound support
- Encryption
- Client Auto Update
- Local clipboard integration
- Low bandwidth requirements
- Disk caching and data compression
- Published application support
- Business recovery support
- PC key mapping

Client Device Mapping

The Citrix ICA Macintosh Client supports client device mapping. *Client device mapping* allows a remote application running on the Citrix server to access printers and drives attached to the local client computer.

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 Printer Mapping

Client printer mapping lets users access printers attached to the client computer from applications running in 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 ICA Macintosh Client, you can print to a PostScript printer or to a PC printer connected to the Macintosh serial port.

Client COM Port Mapping

Client COM port mapping is similar to printer and drive mapping. It allows users to access serial devices on the client computer as if they were connected to the Citrix server.

Sound Support

ICA Client sound support allows a client computer to play sound files on the server and hear them through the client computer's sound system. Client computers can play 8- or 16-bit mono or stereo .wav files at 8, 11.025, 22.05, and 44.1 KHz. Audio support can be configured to use one of three different sound compression schemes. Each scheme provides different sound quality and bandwidth usage.

Encryption

The Citrix ICA Macintosh Client supports basic encryption.

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*. The latest versions of the ICA Client are downloaded to ICA Client devices when users connect to a Citrix server.

ICA Client Auto Update supports the following features:

- Automatically detects older client files
- Transparently copies new files over any ICA connection
- 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

Local Clipboard Integration

The ICA Client allows you to cut and paste text and graphics between Windows applications in the ICA session window and any other Macintosh application. 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.

Low Bandwidth Requirements

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

Disk Caching and 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 computer.

Published Application 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. All the user needs to do is double-click on the application entry's icon on the desktop.

Business Recovery Support

The Citrix 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 for consistent connections to published applications in the event of a primary server disruption. Users now have an even higher level of fault tolerance and seamless user experience.

PC Key Mapping

Your Macintosh mouse and keyboard can be used with the ICA session in the usual way. Special key combinations are provided to enable users to enter PC keys not available on standard Macintosh keyboards.

Use the following special key combinations to enter PC keys not available on a standard Macintosh keyboard:

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 .)
Mouse right-click	= key on numeric keypad or Option and mouse click

Deploying the Citrix 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

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.

- 4MB of available memory
- 2MB of free disk space
- 16 or 256 color video display
- Open Transport TCP/IP Version 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 server CD-ROM in the client system's CD-ROM drive. Double-click the CD-ROM icon on your desktop.
2. Double-click **ICACLNT** 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 the appropriate utility.
5. Open the **Citrix ICA Client 4.1** folder created by the decompression utility.
6. Double-click the **Installer** icon to run the installation program.
7. Follow the directions on your screen.

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 Citrix server. The new versions of the ICA Clients are downloaded from the Client Update Database.

ICA Client Auto Update works with all transport types supported by ICA (TCP/IP, IPX, NetBIOS, and serial) 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 can update client files to newer versions of the same product and model. For example, it can be used to update the Citrix ICA Win32 Client. It cannot be used to update a Citrix ICA Win16 Client to the Citrix ICA Win32 Client.

The Citrix ICA Client Update Process

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

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

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

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

- The Citrix server queries the ICA Client when the user logs on. If the Citrix server detects that the ICA Client is up-to-date, it continues the log on transparently.
- If an update is needed, by default, the Citrix 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 Citrix 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 Citrix 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 Citrix server again to continue working.
- After disconnecting from the server, the Citrix ICA Client completes the update. All client programs must be closed before the Citrix ICA Client can be updated.
- If the user does not close all client programs before clicking **OK**, a message appears informing the user of the open program. When all programs are closed, the Citrix ICA Client can complete the update.
- In case of a problem, the existing ICA Client files are saved to a folder called Backup in the Citrix ICA Client directory.

Configuring the Client Update Database

During Citrix server setup, a client update database is created that contains the Citrix ICA Win32, Win16, and DOS Clients. By default, the update database is configured to update older client versions.

You can configure a client update database on each Citrix 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 Citrix servers.

Use the ICA Client Update Configuration utility to:

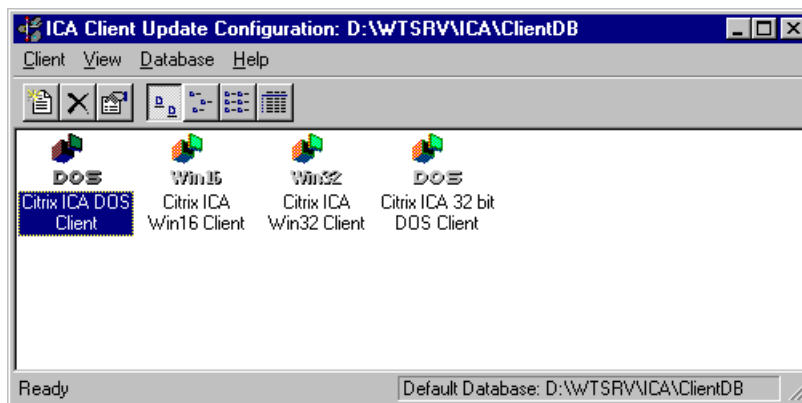
- Create a new client update database
- Set a default client update database
- Configure database properties
- Add Citrix ICA Clients to the update database
- Remove Citrix ICA Clients from the update database
- Configure client update options

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

1. From a MetaFrame 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 window appears:



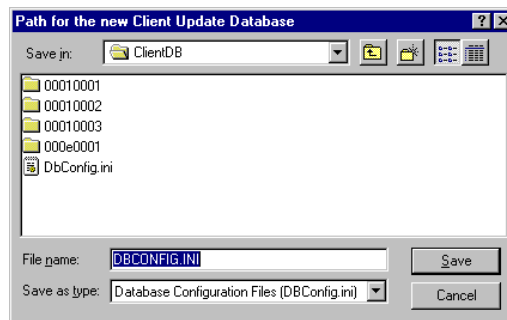
The location of the current client update database is shown in the status bar. This is the database the Citrix server uses to update Citrix ICA Clients. The main window shows the ICA Clients currently configured in the database.

Creating a New Client Update Database

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

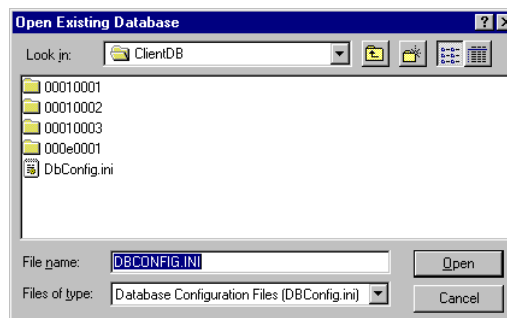
A new client update database is created in the specified folder and the new database is opened.

Setting a Default Database

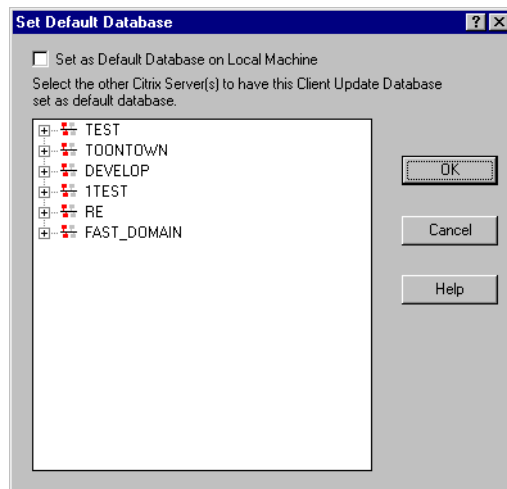
An existing client update database can be used by multiple Citrix servers. If the client update database is on a shared network drive, use the ICA Client Update Configuration utility to configure all Citrix servers to use the shared database.

► **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:



- Specify the path to the database that will be used as the default.
- Click **OK**.
- From the **Database** menu, click **Set Default**. The **Set Default Database** dialog box appears:



Select the **Set as Default Database on Local Machine** check box to make the currently opened database the default database.

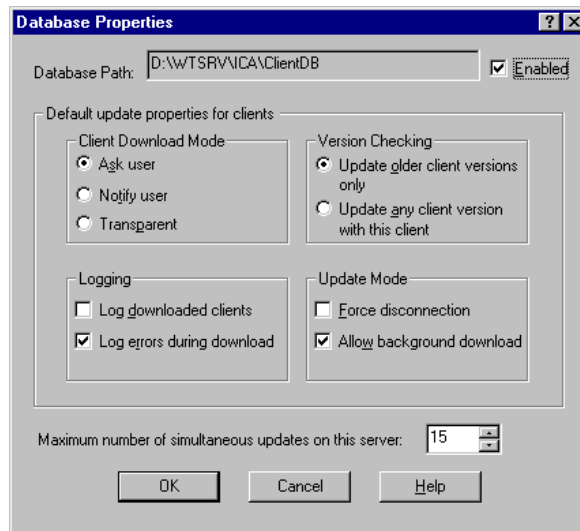
Tip You can also set other Citrix servers to use the currently open database as the default database. Double-click on a domain name to view the servers in that domain. Click on a server to set its default database to the currently open database. You can select multiple servers by holding down the CTRL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

- 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:



Clear the **Enabled** check box to disable this client update database. Citrix ICA Clients are not updated if the database is not enabled.

The **Default update properties for clients** options specify the default behavior for Citrix 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 whether 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 a Citrix 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 Citrix ICA Clients

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

► To add a new Citrix 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 located in
%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 on 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 NT 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 a Citrix 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 Citrix ICA Clients to this client. All other clients of the same product, model, and version are disabled.

6. Click **Finish** to copy the Citrix ICA Client installation files into the client update database.

► **To remove a Citrix ICA Client from the database**

1. In **Client Update Configuration**, click on the Citrix 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 Citrix ICA Client is now removed from the database.

Changing the Properties of a Citrix ICA Client in the Database

Use the **Properties** dialog box to maintain the configuration of a Citrix 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 a Citrix ICA Client in the database**

1. In **ICA Client Update Configuration**, click on the Citrix 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 Citrix 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 whether 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 whether 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 NT 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 a Citrix 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 a Citrix ICA Client.

Configuring the Citrix ICA Macintosh Client



Overview

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

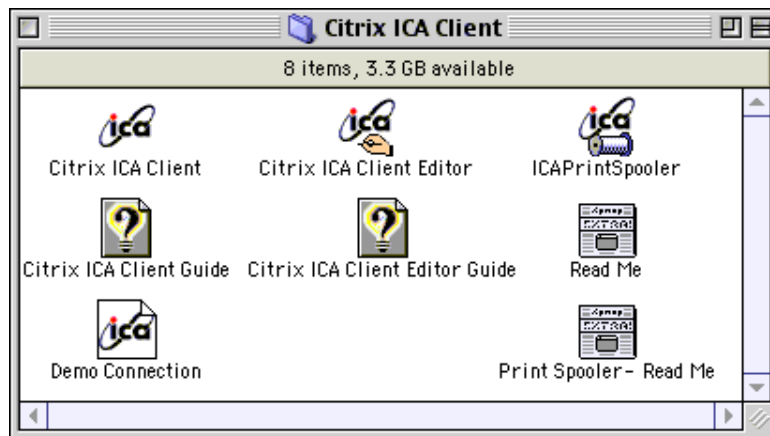
- Starting the ICA Client Editor
- Creating a connection file
- Configuring default settings
 - Configuring default preferences
 - Configuring default window settings
- Mapping client devices
 - Mapping client drives
 - Mapping client printers
 - Mapping client COM ports
- Using a SOCKS proxy server

Starting the ICA Client Editor

Use the ICA Client Editor to create and edit connection files. Connection files contain configuration options that define the attributes of the ICA sessions you run on Citrix servers. 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.

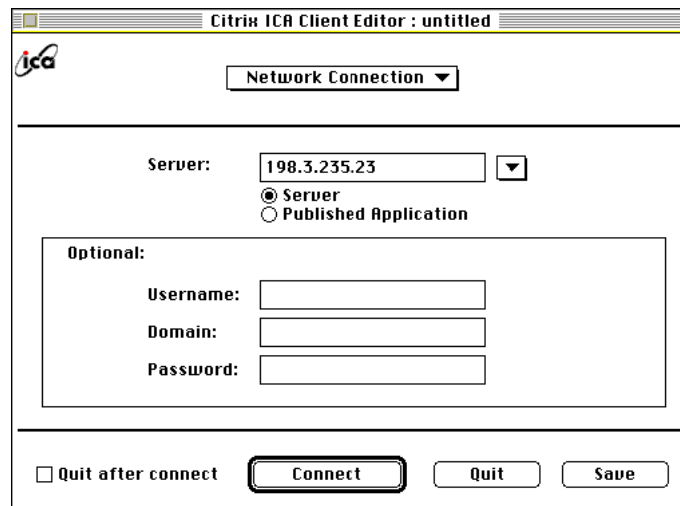


Creating a Connection File

The ICA Macintosh Client can connect to both servers and published applications. The first thing you must specify in the connection file is the server or published application to which to connect. The following procedure describes how to create a basic connection file. See the following sections for advanced configuration settings.

► **To create a connection file**

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

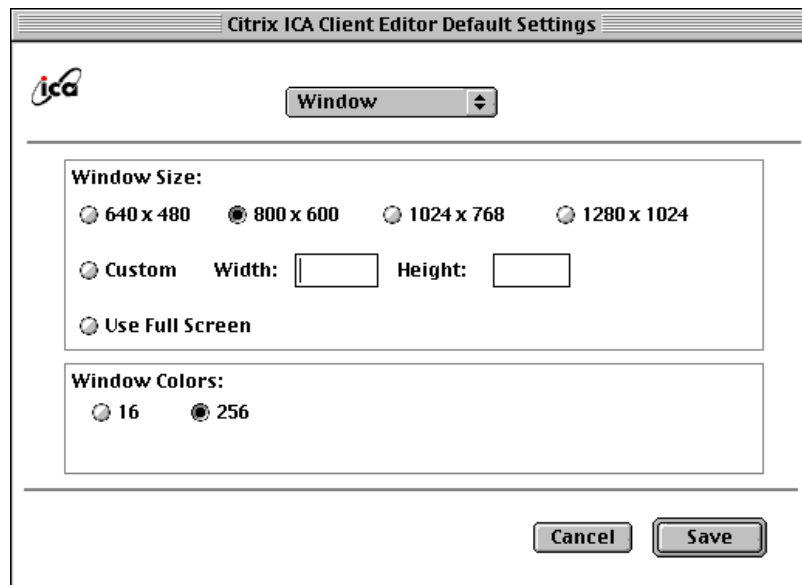


2. Click **Server** to connect to a server or **Published Application** to connect to a published application.
3. In the **Server** box, type the name or IP address of the Citrix server or the name of a published application. If server browsing is possible, you can click the button to the right of the **Server** box and select the name from the list.
4. To log onto the Citrix server automatically, enter your user name, password, and domain in the appropriate boxes. If you leave these boxes blank, the Citrix server prompts for this information each time you make a connection.
5. Click **Save**. Select a location in which to save the file. By default, the **Save connection as** box displays the Citrix server or published application name. You can also 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.
6. Click **Quit** to exit the ICA Client Editor.

Configuring Default Settings

The **Citrix ICA Client Editor Default Settings** dialog box allows you to specify the default settings used for all ICA connections. The settings you make in this dialog box are applied to all connection files. Some settings can be overridden for a specific connection file using the appropriate page of the **ICA Client Editor** dialog box.

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



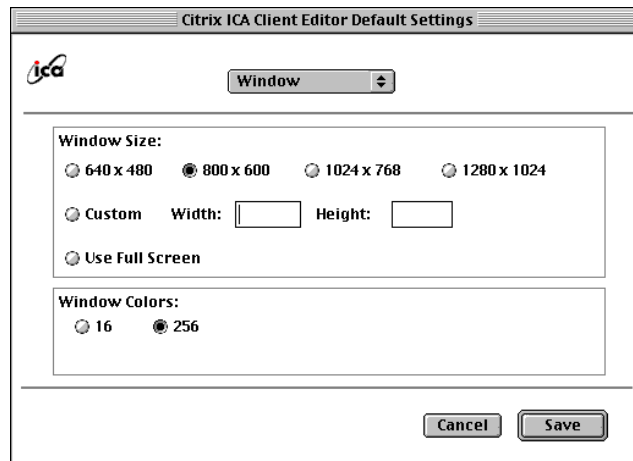
The **Citrix ICA Client Editor Default Settings** dialog box contains the following pages:

Page	Description
Window	Default size and color depth to use for ICA session windows
Preferences	Options for playing Windows alert sounds, automatically quitting the ICA Client after the ICA session ends, and automatic client update
Printer Setup	Settings for client printer mapping ¹
Drive Mapping	Settings for client drive mapping ¹
Disk Cache	Settings for persistent bitmap cache
Server Location	Settings for Business Recovery, SOCKS proxy configuration ² , and alternate address remapping
Com Port Mapping	Settings for client COM port mapping ¹

¹ Client device mapping is described in “Mapping Client Devices” later in this chapter.

² SOCKS proxy configuration is described in “Using a SOCKS Proxy Server” later in this chapter.

Configuring Default Window Settings

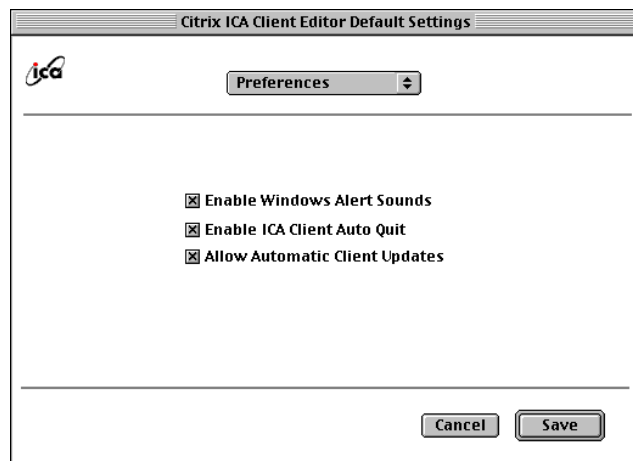


In this window, you can select one of four predefined windows sizes, enter a custom size up to 2048 x 2048 pixels, or use the full screen.

You can also set the number of colors to 16 or 256. For optimum performance, the number of colors should match the setting in your Macintosh **Monitors** control page.

These settings are used as the default for connection files with **Use Default** selected.

Configuring Default Preferences



Select **Enable Windows Alert Sounds** to play the default Macintosh beep when an application in the ICA session triggers the default Windows beep.

Select **Enable ICA Client Auto Quit** to exit the ICA Client automatically when you close a connection.

Select **Allow Automatic Client Updates** to allow the Citrix server to update the Citrix ICA Macintosh Client when newer versions become available. When the Citrix server detects an outdated client version, it notifies the user that a newer version is available and replaces the ICA Macintosh Client files.

Configuring the Disk Cache

The Macintosh ICA Client stores commonly-used graphical objects such as bitmaps in a local cache on the client computer's hard disk. You can configure the following settings from the **Disk Cache** page of the **Default Settings** dialog box:

Setting	Description
Amount of disk space to use	The amount of disk space to use for the cache as a percentage of the total size of the disk containing the cache folder.
Disk cache folder	The default directory where the cached data is stored is displayed in this box. Click Change Folder to specify a new directory for cached data.
Minimum size bitmap to be cached	The size of the smallest bitmap to be cached to disk.

Click **Clear Disk Cache Now** to remove all cached data from the client computer.

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.

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 respond, 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.

► **To configure Business Recovery server groups**

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. 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 and then click **Save** to save the new settings.

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 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 pop-up dialog box appears.
 4. Click **Use alternate address for firewall connection** and then click **OK** to close the pop-up dialog box.
 5. In the **Default Settings** dialog box, click **Save** to save the new settings.

Advanced Connection File Settings

This section contains advanced configuration settings for the ICA Macintosh Client. These options can be set when creating a new connection file or you can edit an existing 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 file you want to edit.

— or —

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

The following topics describe the additional properties and settings you can configure using the ICA Client Editor:

- Connection properties
- Window properties
- Application properties
- SOCKS proxy server

Configuring Connection Properties

You can configure existing connection files using the **Properties** dialog box.

► **To configure connection properties**

- Select **Connection Properties** from the pop-up list in the **ICA Client Editor** dialog box.

The **Connection Properties** page has the following options:

- **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.** Check this 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.
- **Quality.** This option allows you to configure the sound quality. Select one of the following values:
 - **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.
- **Disable local printer for connection to this server.** Check this box to disable local printing for connections to this server or published application.
- **Disable drive mapping for connection to this server.** Check this box to disable drive mapping for connections to this server or published application.

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 window properties**

- Select **Window** from the pop-up list in the **ICA Client Editor** dialog box.
Select **Use Default** to use the default window size or window colors setting specified with the **Default Settings...** command on the **Options** menu. For more information, see “Configuring Default Settings” later in this chapter.

Window Size allows you to select one of four standard window sizes. Alternatively click **Custom** to enter a custom size up to 2048 x 2048 pixels or **Use Full Screen** to use the full screen. If you select **Use Full Screen**, the menu bar will be hidden when you run the ICA 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 ICA Client and choose **Best**.

Window Colors allows you to set the number of window colors to 16 or 256.

Note For best performance, **Windows Colors** should match the number of colors set in your Macintosh **Monitors** control panel.

Configuring Application Properties

The **Application** page allows you to specify the path and file name of an application to be executed after connecting to a Citrix server. The connection is closed when you exit from the application.

If an application is specified, 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. Select **Application** from the pop-up list in the **ICA Client Editor** dialog box.
2. 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: \WI NWORD\WI NWORD. EXE

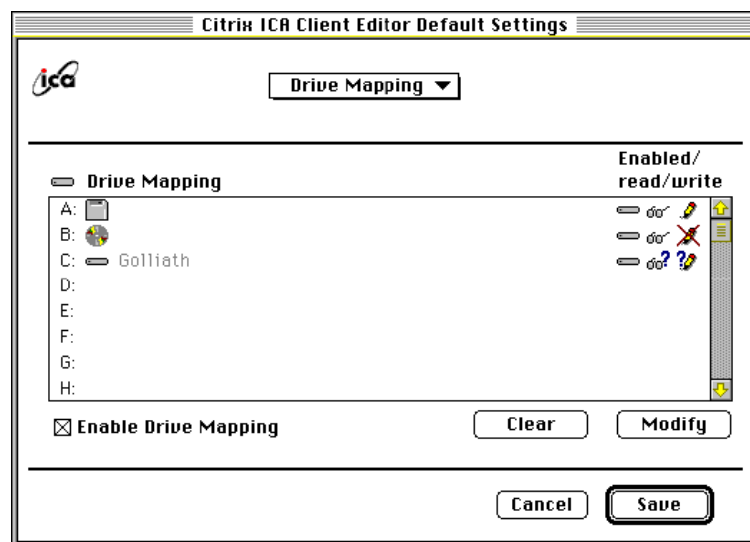
- Specify the working directory to be used with the application in the **Working Directory** box.

Mapping Client Devices

The Citrix ICA Clients support client device mapping. *Client device mapping* allows a remote application running on the Citrix server to access printers, disk drives, and COM ports attached to the local client computer.

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 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.



The **Drive Mapping** list shows which Macintosh local disks and folders will be used with your Citrix server sessions and allows you to change their settings.

Drives A:, B:, and C: are permanently mapped to the Macintosh floppy disk drive, the Macintosh CD-ROM drive (if available), and the Macintosh hard disk.

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

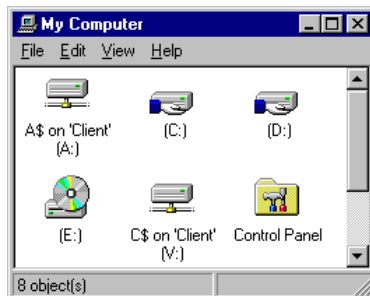
1. In the ICA Client Editor **Options** menu, select **Default Settings**. In the **Citrix ICA Client Editor Default Settings** dialog box, select **Drive Mapping** from the pull-down menu.

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.

2. Select an available drive letter. For example, in the dialog box shown above, you might select **D:**.
3. 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.
4. Click **Save**. Log off 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:



In this example, drives C, D, and E are storage devices on the MetaFrame server. The Macintosh floppy disk drive and Macintosh hard disk on the client computer are mapped to drives A and V on the MetaFrame server, respectively. You can access the Macintosh hard disk in this ICA session by using drive V for any operation. For example, to save a file to the client machine's hard disk, specify drive V in the application.

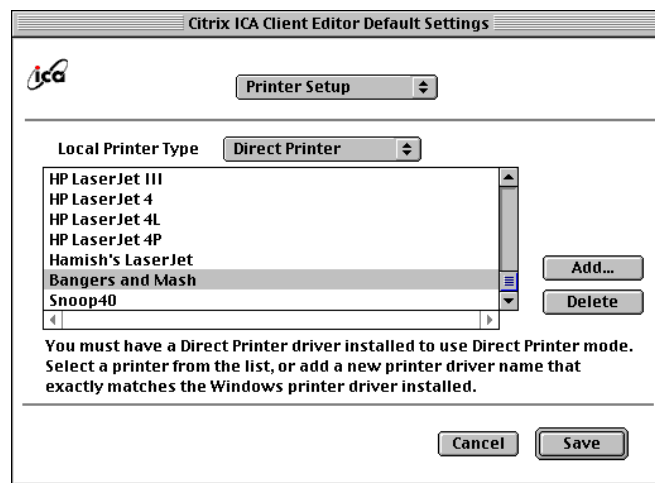
Citrix servers can be configured to remap their server drives. When server drives are remapped, the local drives take drive letters different from those in the example above.

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 Printers

Client printer mapping lets you 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 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 **ICA Client Editor** dialog box.

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



After configuring printer mapping, 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 printer mapping

You can redirect printing to a PC printer using an appropriate Macintosh printer driver selected in the Macintosh Chooser.

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. Run the Citrix ICA Client Editor.
4. From the ICA Client Editor **Options** menu, select **Default Settings**.
5. In the **Citrix ICA Client Editor Default Settings** dialog box, select **Printer Setup** from the pull-down 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 Citrix server, first connect to the Citrix server using the 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**.

► **To view mapped client printers when connected to a MetaFrame server**

- While connected to a MetaFrame server, double-click **My Computer** on the remote desktop and then double-click **Printers**. The **Printers** screen appears:



The **Printers** screen displays the mapped local printers along with any other printers available on the MetaFrame server. The name of the printer is **macintosh name#Mac Printer**, where *macintosh name* is the **Macintosh Name** in the **Macintosh Sharing Setup** or **File Sharing** control panel. In this example, the Macintosh client machine named Workstation3 has its local printer mapped.

▶ **To view mapped client printers when connected to a *WINFRAME* server**

- While connected to the *WINFRAME* server, double-click **Print Manager** in the **Main** program group of Program Manager. Print Manager displays the local printers mapped to the ICA session.

The name of the printer is *macintosh name#Mac Printer*, where *macintosh name* is the **Macintosh Name** in the **Macintosh Sharing Setup** or **File Sharing** control panel.

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

▶ **To manually map a client printer on a MetaFrame server**

1. Log on to the MetaFrame server.
2. In the ICA session window, double-click **My Computer** and then double-click **Printers**.
3. Double-click **Add Printer**. Select **Network printer server** and click **Next**.
4. In the **Shared Printers** field, double-click **Client Network** and then double-click **Client**.
5. Select *macintosh name#Mac Printer*, where *macintosh name* is the **Macintosh Name** in the **Macintosh Sharing Setup** or **File Sharing** control panel and then click **OK**.
6. If you want this printer to be your default printer, click **Yes**.
7. Click **Next** and then click **Finish**.

▶ **To manually map a client printer on a *WINFRAME* server**

1. Logon to the *WINFRAME* server.
2. In the ICA session window, double-click **Print Manager** in the **Main** program group of Program Manager.
3. From the **Printer** menu, click **Connect to Printer**.
4. In the **Shared Printer** list, double-click **Client Network** and then double-click **Client**.
5. Select *macintosh name#Mac Printer*, where *macintosh name* is the **Macintosh Name** in the **Macintosh Sharing Setup** or **File Sharing** control panel and then click **OK**.
6. If you want this printer to be your default printer, select it in the **Default** menu near the top of the **Printers** window.

Mapping Client COM Ports

Client COM port mapping is similar to printer and drive mapping. It allows users to access serial devices on the client computer as if they were connected to the Citrix server.

▶ **To map a client COM port**

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 **Com Port Mapping** page.
3. From the **Com Port Mapping** list, 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.
4. Click **Modify** to map a local port to the selected COM port. A dialog box appears.
5. Select the actual physical port to associate with the selected COM port and click **OK**.
6. 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 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 you want to map.
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.

Note COM port mapping is not TAPI-compatible. Applications that communicate with devices using TAPI are not supported.

Using a SOCKS Proxy Server

If you are using a SOCKS proxy server to limit access to your Citrix servers, 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 only use a SOCKS proxy with a specific connection file.

► **To configure a default SOCKS proxy server**

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 SOCKS proxy server's IP address.
6. In the **Port** box, enter the proxy server's port number (if different than 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.

► **To configure a SOCKS proxy server for a specific 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.
— or —
From the desktop, drag the connection file and drop it onto the **Citrix ICA Client Editor** icon.
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 **SOCKS Configuration** page.
4. Click **Connect via SOCKS proxy**.
5. In the **Address of proxy to use** box, enter the SOCKS proxy server's IP address.
6. In the **Port** box, enter the proxy server's port number (if different than 1080).
7. Click **Save** to save the changes to the connection file.

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