

# Administrator's Guide

## **Citrix ICA Client for Windows CE Windows-Based Terminals**

Version 6.0

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# Before You Begin

## Who Should Use this Manual

This manual is for system administrators responsible for configuring, deploying, and maintaining Citrix ICA Clients for Windows CE Windows-based terminals. This manual assumes knowledge of:

- Citrix MetaFrame or Citrix *WINFRAME*.
- The Windows-based terminal device, including how to display the **Global ICA Settings** dialog box. This is usually accessed with other Terminal property settings on your terminal. The key combination used to display the properties will be in the documentation supplied by your Windows CE terminal manufacturer. It is usually a function key such as F2.
- 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 this guide, review the table of contents to familiarize yourself with the topics discussed.

This guide contains the following sections:

Section	Contents
Chapter 1, "Introduction to the Citrix ICA Client for Windows CE"	Gives a detailed list of features
Chapter 2, "Configuring the Citrix ICA Client for Windows CE"	Describes how to configure connection properties and device mappings for the Citrix ICA Windows CE Client

## Conventions

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

<b>Convention</b>	<b>Meaning</b>
<b>Bold</b>	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.
➤	Indicates a procedure with sequential steps.
▪	Indicates a list of related information, not procedural steps.
Monospace	Represents examples of text files.
... (ellipsis)	Indicates that you can repeat the previous item(s) in syntax statements. For example, <b>/route:devicename</b> [...], 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.

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## Finding More Information

This manual contains conceptual information and installation and configuration steps for the Citrix ICA Windows CE Client using a Windows-based terminal. For additional information, see the following documentation:

- The *Citrix ICA Client Administrator's Guides* for other ICA Clients you deploy.
- For instructions on installing, configuring, and maintaining your Citrix servers, see the documentation included in your MetaFrame or *WINFRAME* package.

Other Citrix documentation is available in Adobe PDF format in the following locations:

- The documentation directory of your Citrix server CD-ROM
- The product documentation library at <http://www.citrix.com/services/productdocs.asp>

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>.

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

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## Citrix on the World Wide Web

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

- 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 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](mailto: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 Client for Windows CE



## Overview

The Citrix ICA Client for Windows CE lets you use a Windows-based terminal to make an ICA connection to a Citrix server. Once the ICA connection to the Citrix server is established, you can access applications and work with files as if you were working at the Citrix server itself.

## Features

Once connected to a Citrix server, the Citrix ICA Windows CE client provides additional features that make remote computing seem like you are running applications on a local desktop. The Citrix ICA Windows CE Client has the following features:

- TCP/IP+HTTP browsing
- PNLite Mode
- SpeedScreen
- Enhanced resolution and color depth
- Basic and strong encryption
- Auto-reconnect to disconnected sessions
- Client device mapping
  - Client drive mapping
  - Client printer mapping
  - Client com port mapping
- Sound support
- Data compression

- ICA Client hotkeys
- Transparent clipboard access
- Application publishing support
- Business Recovery

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

## TCP/IP+HTTP Browsing

This feature enables retrieval of Citrix server and published application information across network configurations that restrict broadcast packets or the UDP protocol. Very simply, the method used to obtain a list of published applications has been enhanced to allow the ICA client to obtain published application information from Citrix servers located behind firewalls.

## PNLite Mode

PNLite is a connection mode that allows you to connect to an NFuse enabled Citrix server and obtain a list of published applications that you can connect to. In this mode, you do not have to manually configure each ICA connection, but a list of published applications will be 'pushed' (made available) to your client device. Connect to any published application in that list by double-clicking on an entry.

## SpeedScreen Latency Reduction

SpeedScreen latency reduction enhances the user's experience on slower network connections. SpeedScreen latency reduction functionality includes:

### Local Text Echo

This ICA Client option accelerates the display of the input text on the client device.

### Mouse Click Feedback

This ICA Client option provides visual feedback for mouse clicks to show that the user's input is being processed.

SpeedScreen latency reduction is only available when it is supported and enabled on the Citrix server to which you are connecting.

## Enhanced Color Depth

The ICA Windows CE client now enables you to configure higher color depth. Depending on the device you are using, you can configure the connection to use 16,256, thousands or millions of colors.

## Secure ICA

The Citrix Windows CE ICA client now supports encryption using Citrix SecureICA Services. The default encryption level is Basic. Strong encryption using the RC5 algorithm is available with SecureICA Services. SecureICA Services enables RSA RC5 encryption with 40, 56, or 128-bit session keys.

## Auto-reconnect to disconnected sessions

If for some reason, such as a network error, your ICA connection is dropped, the ICA CE client gives you the option of reconnecting to the disconnected session.

## Client Device Mapping

Client device mapping allows a remote application running on the Citrix server to access printers, drives, and devices attached to the local client computer.

### Client Drive Mapping

Client drive mapping allows you to access the local disk drives of the client device 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 within ICA sessions, and then save them either on a local drive or a drive on the Citrix server.

Note that client drive mapping is not supported when connecting to MetaFrame for UNIX Operating Systems 1.0 and 1.1 servers.

### 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.

### 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.

Note that client COM Port mapping is not supported when connecting to MetaFrame for UNIX Operating Systems 1.0 and 1.1 servers.

## Sound Support

Sound support allows your client computer to play sounds generated by applications running on the Citrix server. Sound support can be configured to use one of three different compression schemes. Each scheme provides different sound quality and bandwidth usage. This feature is not available when connecting to MetaFrame for UNIX 1.0 and 1.1 servers.

## Data Compression

Data Compression can increase performance over low speed asynchronous and WAN connections by reducing the amount of data sent over the communications link to the client computer.

## ICA Client Hotkeys

The Citrix Windows CE Client provides hotkeys that can be used to control various functions while in an ICA session. Some hotkeys control the behavior of the ICA Windows CE Client itself while others emulate standard Windows hotkeys.

## Transparent Clipboard Access

If your Windows-based terminal supports a clipboard, you can use the Window CE device's clipboard to cut and paste objects between ICA sessions and applications running locally. Access to the local clipboard requires no special configuration or procedures. Use the familiar cut, copy, and paste commands to transfer text, pictures, and other objects between local and remote applications.

## 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.

## Business Recovery

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

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

# Configuring the Citrix ICA Client for Windows CE



## Overview

This section describes how to configure the Citrix ICA Windows CE Client. Topics in this section include:

- Creating a new connection entry
- PNLite mode
- Connecting to a Citrix server
- Changing an existing connection entry
- Configuring Server Location and Business Recovery
- Using local printers
- Changing the global settings
- Improving performance and security of ICA sessions
- Using published applications on a MetaFrame for UNIX server

## Creating a New Connection Entry

You can configure and run two types of ICA sessions: Citrix server connections and published applications.

- *Citrix server connections* allow you to connect to the Windows desktop of a specific Citrix server; you can run any applications available on the desktop, in any order.
- *Published applications* are specific applications set up by an administrator for remote users to run. When connected, you are presented with the application itself.

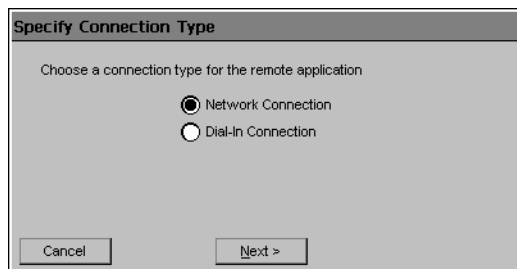
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**Note** This procedure describes the simplest way to create a connection entry. When you follow these steps, you set the essential items you need to connect to a Citrix server from the Windows CE device. See “Changing a Connection Entry” for more information about how to change the other properties for a connection entry.

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➤ **To create a new connection entry**

1. In the **Connection Manager** dialog box, click the **Configure** tab.
2. Click **Add**.
3. In the **New Connection** dialog box, click **Citrix ICA Client** in the **type of connection** list. Click **OK**.
4. The **Specify Connection Type** dialog box appears:



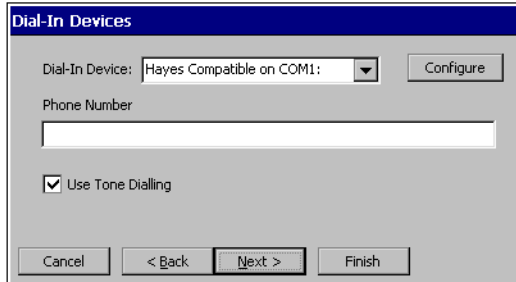
Click **Network Connection** to make a network connection. Make sure your client device is connected to the network through a network interface card (NIC) or by a serial PPP connection to a Windows 95 or Windows RAS server. Click **Next** to continue. Skip to Step 6.

— or —

Click **Dial-In Connection** to make a dial-in connection. Make sure your modem is installed and properly configured. Click **Next** to continue.

**Note** The ICA Windows CE Client does not support modem callback. When using modem callback, the server hangs up on dial-in connections at logon and then dials a specified number to reconnect to the user attempting to log on. Because Windows CE contains no mechanism to answer the return call, the ICA Windows CE Client does not support modem callback for dial-in connections.

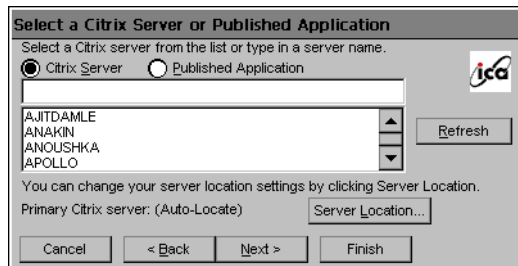
5. The **Dial-In Devices** page appears:



The screenshot shows the 'Dial-In Devices' configuration window. It has a title bar with the text 'Dial-In Devices'. Inside the window, there is a 'Dial-In Device:' label followed by a pull-down menu showing 'Hayes Compatible on COM1:' and a 'Configure' button to its right. Below this is a 'Phone Number' label and an empty text input field. A checkbox labeled 'Use Tone Dialling' is checked. At the bottom of the window, there are four buttons: 'Cancel', '< Back', 'Next >', and 'Finish'.

From the pull-down list, select your modem. In the **Phone Number** box, type the phone number of the Citrix server including the area code and country code if required. Click **Next** to continue. Skip to Step 10.

6. The **Select a Citrix Server or Published Application** page appears:

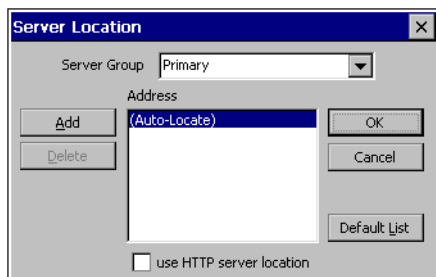


The screenshot shows the 'Select a Citrix Server or Published Application' window. The title bar contains the text 'Select a Citrix Server or Published Application'. Below the title bar, there is a prompt: 'Select a Citrix server from the list or type in a server name.' There are two radio buttons: 'Citrix Server' (which is selected) and 'Published Application'. To the right of these buttons is the Citrix ICA logo. Below the radio buttons is a list box containing the following server names: AJITDAMLE, ANAKIN, ANOUSHKA, and APOLLO. To the right of the list box is a 'Refresh' button. Below the list box, there is a prompt: 'You can change your server location settings by clicking Server Location.' Below this prompt, there is a label 'Primary Citrix server: (Auto-Locate)' and a 'Server Location...' button. At the bottom of the window, there are four buttons: 'Cancel', '< Back', 'Next >', and 'Finish'.

7. Click **Citrix Server** to connect to a server or **Published Application** to connect to a published application.

If your CE device is not on the same network as the Citrix server you would like to connect to, the server name will not appear in the list (this would occur if you are on the other side of a router, across the Internet, or using RAS to connect to a remote network containing Citrix servers). In this case, click **Server Location** and go to the next step. Otherwise, scroll through the list and select the Citrix server or published application or type the name of the Citrix server or published application in the edit field. Click **Next**.

8. The **Server Location** dialog box appears:



Remote Application Manager uses the information entered in the **Server Location** screen to help locate available Citrix servers and published applications.

If:

- you are on another network (for example, if you are on the other side of a router, across the Internet, or connected by RAS), click **Add** to enter the IP address or DNS name of a Citrix server on the network that contains the Citrix server you would like to connect to. The Windows CE client uses this server to locate the list of available Citrix servers on the network.
- your network configuration cannot propagate UDP traffic (for example, if your firewall restricts UDP broadcasts), click **Use HTTP Server location**. Make sure that the list contains the IP address or name of a Citrix server on the network that contains the Citrix server you would like to connect to. The Windows CE client uses this server to locate the list of available Citrix servers on the network.

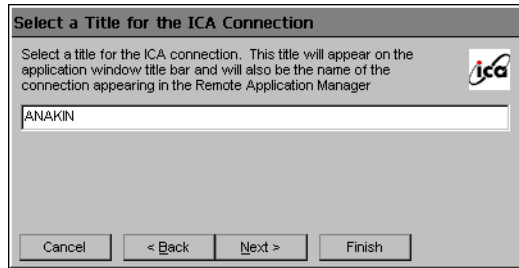
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**Note** When you first select **Use HTTP Server location**, the convention used for the default server name is *ica.domainname* where *domainname* is your TCP/IP domain name. You can change this to a specific server name/IP address or leave the default setting and map the name of a server to *ica.domainname*. Note that TCP/IP+HTTP server location uses a TCP connection so does not support the **(Auto-Locate)** function.

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Click **OK**, then click **Next**.

9. The **Select a Title for the ICA Connection** page appears:



Enter a name for the connection entry. The name you choose is the name of the entry in the list of connections in Connection Manager.

10. Click **Finish** to save the entry or **Cancel** to exit the new connection entry dialog box without saving the entry.

Once you have created a connection entry, the name appears in the list of connections in Connection Manager.

## PNLite Mode

PNLite is an ICA connection mode that enables the CE client to connect to applications available on a Citrix server without having to configure connections for each published application.

➤ **To enable PNLite mode**

1. Open the **Global ICA Client Settings** dialog box.
2. Click the **PNLite** tab.
3. Check the **Enable PNLite** checkbox.
4. Enter the address and port number of the NFuse server in the **Address and port of NFuse server** field.
5. Enter your user name, password, and domain in the appropriate **User Credentials** edit fields. Check the **Save Password** box if you want the terminal to remember your password.
6. Click **OK** to save your changes.

The list of available applications will now be displayed in the **Connection Manager** dialog box.

## Connecting to a Citrix Server

### ➤ To start a previously defined connection

1. In the **Connection Manager** dialog box, click the **Connections** tab.
2. Select the desired connection name and click **Connect**.

If you specified a valid user name and password in the connection entry, you are logged in as that user.

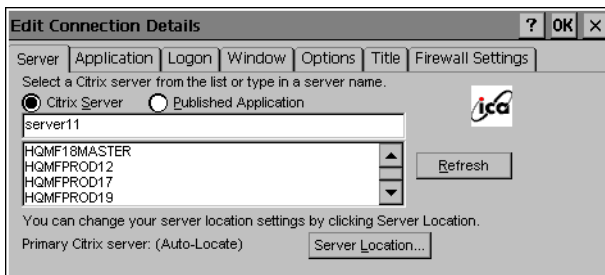
If no user name and password are present in the entry or the information is incorrect, the server logon dialog box appears. Enter a valid user name and password for the Citrix server and click **OK** to log on.

## Changing a Connection Entry

This section describes how to change the properties of an existing connection entry.

### ➤ To change the properties of a connection entry

1. In the **Connection Manager** dialog box, click the **Configure** tab.
2. Click the name of the connection entry that you want to change.
3. Click **Edit** to display the **Edit Connection Details** dialog box.



4. Make the desired changes.
5. Click **OK** to save your changes.

The **Edit Connection Details** dialog box contains the following tabs:

- The **Server** tab (network connection entries only), where you can set the server or published application name to which to connect. There is also a button to display the **Server Location** dialog box where you can set Business Recovery options, See “Creating a New Connection Entry” and “Configuring Server Location and Business Recovery” for more information.

- The **Dial-in** tab (dial-in connection entries only), where you can set the area code, country code, and telephone number to dial. You can use the settings on this page in the same way as when you first set up the connection entry. See “Creating a New Connection Entry” on page 6 for more information.
- The **Application** tab, where you can specify an application to run after connecting to a Citrix server. See “Specifying an Application to Run after Connecting to a Citrix Server” on page 13 for more information.
- The **Logon** tab, where you can set the user name, password, and domain to use to log in to the Citrix server automatically. See “Specifying Logon Information” on page 14 for more information.
- The **Window** tab, where you can set the number of colors used for the ICA Client window. See “Changing the Window Properties” for more information.
- The **Options** tab, where you can control the connection between the Citrix server and Windows CE device and configure sound support. See “Setting Connection Entry Options” on page 15 for more information.
- The **Title** tab, where you can change the name of the connection. The name appears in the list in the **Connection Manager** dialog box.
- The **Firewall Settings** tab, where you can configure the client to use a SOCKS proxy and alternate address remapping. See “Configuring Firewall Settings” on page 16 for more information.

## Configuring Server Location and Business Recovery

*Server location* (also called server browsing) provides a method for a user at a network-connected Citrix ICA client to view a list of all Citrix servers on the network, and a list of all published applications.

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**Tip** Set a specific server address for the Citrix server that functions as the master ICA Browser when your network configuration uses routers or gateways, or to eliminate broadcasts on your network.

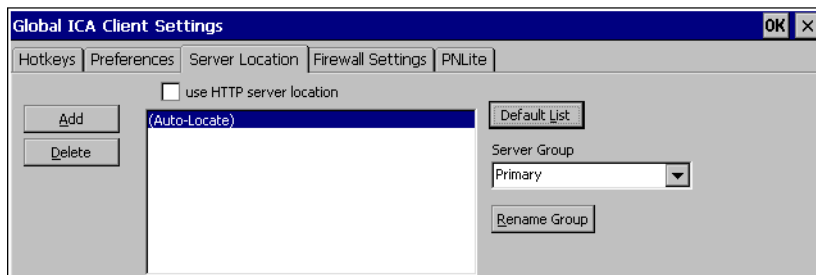
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*Business recovery* provides consistent connections to published applications in the event of a master ICA Browser server disruption. You can define up to three groups of Citrix servers to which you want to connect: a primary and two backups. Each group can contain from one to five servers. When you specify a server group for your client, the client attempts to contact all the servers within that group simultaneously, and the first server to respond is the one to which you connect.

On the ICA Windows CE Client, business recovery settings apply to all connection entries.

➤ **To set Business Recovery options for all connection entries:**

1. Open the **Global ICA Client Settings** dialog box.
2. Click the **Server Location** tab.



3. Select **Use HTTP server location** if your firewall restricts UDP broadcasts. This setting enables the client to retrieve a list of all Citrix servers on the network directly from this server using TCP. If you do not select **Use HTTP server location**, the client obtains the list using UDP. If your Citrix server is behind a firewall, you can use this setting to avoid the UDP broadcast.
4. In the **Server Group** field, select the group that you want to configure.  
The **Server Group** field lets you create lists of specific servers that you want to designate as primary and backup servers for connecting to published applications. Use this field to designate whether the servers entered in the **Address List** field belong to your Primary, first backup (Backup 1), or second backup (Backup 2) group.
5. Click **Add** to add a server to the selected group. The **Add Server Address** dialog box appears.
6. Enter the name or address of a Citrix server. If you selected **Use HTTP server location** in Step 3, you need to enter the server address and the port to use. Click **OK**.
7. Add more servers as necessary. Click **OK** to save your changes.

## Specifying an Application to Run after Connecting to a Citrix Server

Use the **Application** tab to specify an application to run after connecting to a Citrix server. If you specify an application, you do not see the Windows desktop when you connect and the connection is closed when you exit the application.

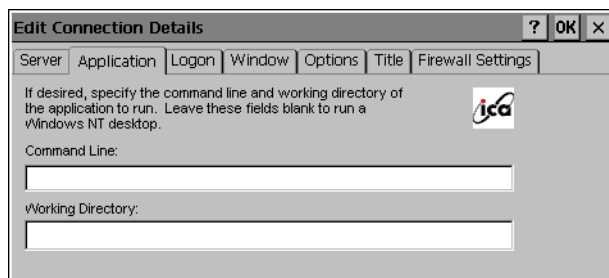
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**Note** This tab does not apply to connection entries for published applications. Any values entered are ignored.

---

➤ **To specify an application to run after connecting to a Citrix server**

1. In the **Connection Manager** dialog box, click **Configure**.
2. Select the connection entry that you want to change and click **Edit**.
3. Click the **Application** tab.



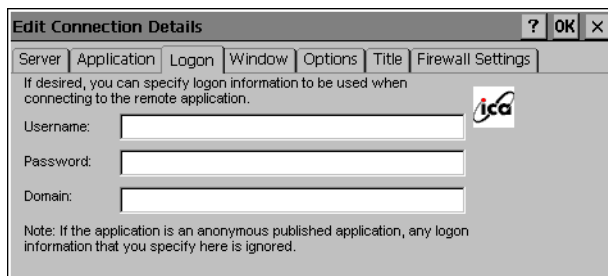
4. In the **Command Line** box, specify the path and file name of the application to be run after connecting to the Citrix server. For example, to launch Notepad automatically after connecting to the MetaFrame for Windows server, type:  
`C:\wtsrv\notepad.exe`
5. In the **Working Directory** box, specify the working directory to be used with the application. If you use Notepad to work on documents in the C:\My Documents directory, type  
`C:\My Documents`
6. Click **OK** to save your changes.

When you log on to the MetaFrame for Windows server, Notepad begins. In Notepad, if you select **Open** from the **File** menu, the C:\My Documents directory is displayed.

## Specifying Logon Information

You can include the settings needed to log on to the Citrix server as part of the connection entry. This saves time when connecting to the server but is less secure.

- **To specify logon information**
  1. In the **Connection Manager** dialog box, click **Configure**.
  2. Select the connection entry that you want to change and click **Edit**.
  3. Click the **Logon** tab.

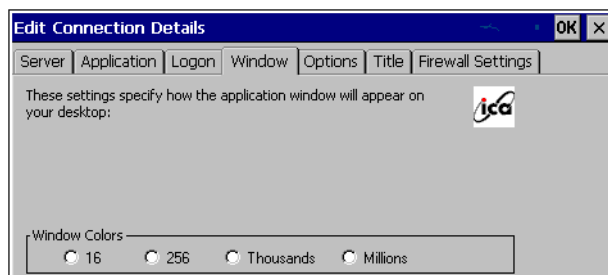


4. Type a valid user name, domain (if applicable), and password. If you leave these boxes blank, you are prompted for your user name, domain (if applicable), and password each time you connect to the Citrix server or published application.
5. Click **OK** to save your changes.

## Changing the Window Properties

Use the **Window** tab to change the number of colors to use for ICA connections made using the connection entry.

- **To specify the Window properties for a connection entry**
  1. In the **Connection Manager** dialog box, click **Configure**.
  2. Select the connection entry that you want to change and click **Edit**.
  3. Click the **Window** tab.



4. In the **Window Colors** box, set the number of window colors.

---

**Note** The options to set **Thousands** or **Millions** of colors is available only if the client device is capable of high-color display. These ICA Client dialog will not include these options if the client software detects that the client terminal does not support high-color.

---

5. Click **OK** to save your changes.

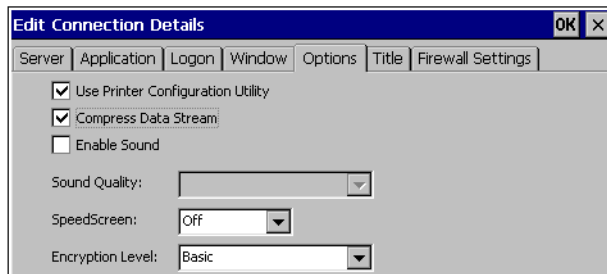
## Setting Connection Entry Options

Use the **Options** tab to set options specific to the connection entry, including:

- Printer configuration
- Data compression
- Sound support
- SpeedScreen Latency Reduction
- Encryption

➤ **To set connection entry options**

1. In the **Connection Manager** dialog box, click **Configure**.
2. Select the connection entry that you want to change and click **Edit**.
3. Click the **Options** tab.



4. Click **Use Printer Configuration Utility** to enable the client to use the printer configuration utility available on the Citrix server. Unchecking this option for connections to MetaFrame for Windows 1.8 servers allows you to map printers manually. See “Mapping Client Printers on MetaFrame for Windows and *WINFRAME*.”

Click **Compress Data Stream** to reduce the amount of data transferred between the ICA Client and the Citrix server.

If your connection is bandwidth-limited, enabling compression can increase performance. If your client device is on a high-speed LAN, you may not need compression. If you have sufficient bandwidth, leave compression off to conserve processing power on the Citrix server.

Click **Enable Sound** to enable sound support. From the pull-down list, select one of the following quality levels.

- **High.** This value provides the greatest audio quality but should be used only 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.

Click **SpeedScreen** and select **On**, **Off**, or **Auto** from the drop-down list. SpeedScreen Latency Reduction can enhance user experience on slow network connections. For more information on this feature see “Improving Performance and Security of an ICA Connection” later in this chapter.

5. Click **OK** to save your changes.

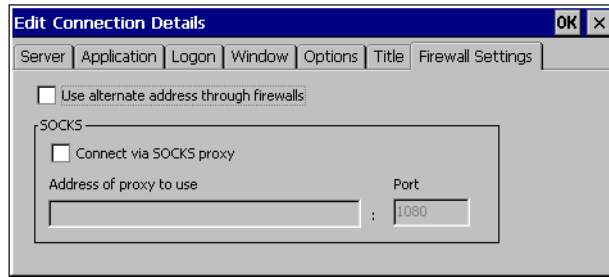
## Configuring Firewall Settings

### Configuring the ICA Client to Use a SOCKS Proxy

If you are using a SOCKS proxy server to limit access to your Citrix servers, you must 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 your network is using a SOCKS proxy server, you must configure the ICA Client to connect to Citrix servers through it. You can configure a default SOCKS proxy for all connections or a SOCKS proxy with a specific connection entry.

- **To configure a default SOCKS proxy server**
  1. Open the **Global ICA Client Settings** dialog box.
  2. Click the **Firewall Settings** tab.



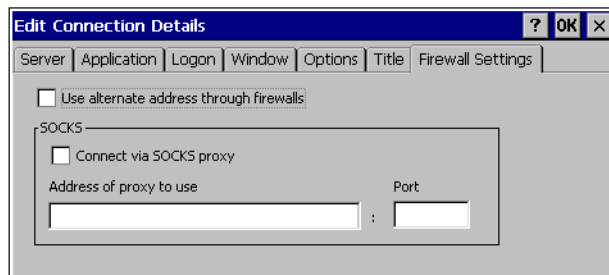
3. Click **Connect via SOCKS proxy**.
4. In the **Address of proxy to use** box, enter the SOCKS proxy server's IP address or DNS name.
5. In the **Port** box, enter the proxy server's port number (if different than 1080).
6. Click **OK** to save your changes.

---

**Note** If you configure a default SOCKS proxy, you must specify at least one server in the **Server Location** tab for server and published application browsing to work. See “Configuring Server Location and Business Recovery” earlier in this chapter for more information.

---

- **To configure a SOCKS proxy for a specific connection entry**
1. In the **Connection Manager** dialog box, click the **Connections**.
  2. Click the connection entry that you want to change and click **Edit**. The **Edit Connection Details** dialog appears.
  3. Click the **Firewall Settings** tab.



4. Follow the instructions for the procedure above beginning with Step 3.

## Configuring Alternate Address Translation

If the ICA Client is outside a firewall that uses address remapping, you must 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 use alternate address translation for all connection entries**

1. Open the **Global ICA Client Settings** dialog box.
2. Click the **Firewall Settings** tab.
3. Click **Use alternate address for firewall connection**.
4. Click **OK** to save your changes.

---

**Note** If you set alternate address translation for all connection entries, it cannot be disabled for specific connection entries.

---

➤ **To use alternate address translation for a specific connection entry**

1. Click the name of the connection entry that you want to change.
2. Click **Edit** to display the **Edit Connection Details** dialog box.
3. Click the **Firewall Settings** tab.
4. Click **Use alternate address for firewall connection**.

Click **OK** to save your changes.

## Using Local Client Printers

You can access printers attached to your terminal 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.

---

**Note** If your Windows-based terminal includes a list of printer drivers, you can select the printer driver from the Printer tab of the Terminal Properties dialog. When you print from an application, the associated driver is used on the Citrix server. You will need to install the printer driver on the Citrix server.

---

## Mapping Client Printers on MetaFrame for Windows and WINFRAME

- **To manually map a client printer on a MetaFrame 1.8 or WINFRAME 1.8 server**
  1. Log on to the Citrix server.
  2. On a MetaFrame server, click **Start, Programs, MetaFrame Tools**, and then **ICA Client Printer Configuration**.  
— or —  
On a *WINFRAME* server, double-click **ICA Client Printer Configuration** in the **Administrative Tools** program group of Program Manager.
  3. On the **Printer** menu, click **New** to display the Add ICA Client Printer wizard. Follow the steps in the wizard to map the client printer.

---

**Note** If you are using a CDS installation, you need to also check the **Use Printer Configuration Utility** setting in the Options tab on the Windows CE Client Connection Details dialog. See “Setting Connection Entry Options” on page 15 for more instructions.

---

- **To manually map a client printer on a MetaFrame 1.0 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** box, double-click **Client Network** and then double-click **Client**.
  5. Select *clientname#port*, where *clientname* is the name you assigned to your Windows CE device and *port* is the printer port on your Windows CE device, and then click **OK**.
  6. If you want this printer to be your default printer, click **Yes**.
  7. Click **Next** and then click **Finish**.

---

**Note** If you are using a CDS installation, you need to also un-check the **Use Printer Configuration Utility** setting in the Options tab on the Windows CE Client Connection Details dialog to use the mapped printer. See “Setting Connection Entry Options” on page 15 for more instructions.

---

- **To manually map a client printer on a *WINFRAME* 1.7 server**
  1. Log on to the *WINFRAME* server.
  2. In the ICA session window, double-click **Print Manager** in the **Main** program group of Program Manager.
  3. On the **Printer** menu, click **Create Printer**.
  4. In the **Shared Printer** list, double-click **Client**.
  5. Double-click the required printer and then click **OK**.

---

**Note** If you are using a CDS installation, you need to also un-check the **Use Printer Configuration Utility** setting in the Options tab on the Windows CE Client Connection Details dialog to use the mapped printer. See “Setting Connection Entry Options” on page 15 for more instructions.

---

- **To view mapped client printers when connected to a MetaFrame for Windows server**

While connected to a MetaFrame for Window server, double-click **My Computer** on the remote desktop and then double-click **Printers**. The **Printers** dialog box appears.

The **Printers** dialog box displays the mapped local printers along with any other printers available on the MetaFrame for Windows server. The name of the printer is *clientname#port*, where *clientname* is the name you have assigned to your ICA Client and *port* is the printer port on your Windows CE device, for example COM1 or LPT1.
- **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 *clientname#port*, where *clientname* is the name you assigned to your Windows CE device and *port* is the printer port on your Windows CE device.

## 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**

Log on to the MetaFrame server as a Citrix server administrator. 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 <b>ctxprinters</b> .	<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**.

---

## Changing the Global Settings

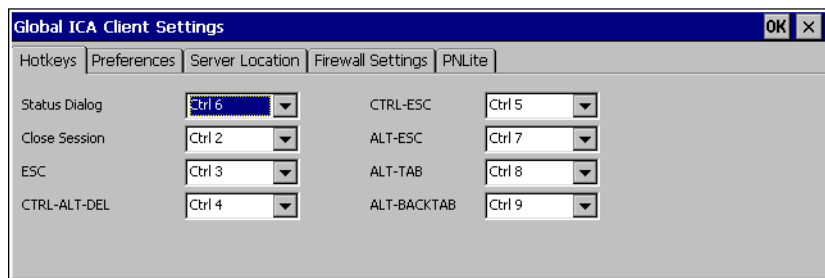
This section describes how to change settings that apply for all connection entries on the Windows CE device. It also describes how to change the default settings that are used when creating new connection entries. You may want to do this if you always prefer to use a particular setting; for example, a sound quality that is different from the initial setting.

**Note** The global settings are accessed from the **Global ICA Client Settings** dialog box. This is usually accessed with other Terminal property settings on your terminal. The key combination used to display the properties will be in the documentation supplied by your Windows CE terminal manufacturer. It is usually a function key such as F2.

---

➤ **To change the global settings**

1. Open the **Global ICA Client Settings** dialog box according to the instructions for your Windows-based terminal device.



2. Make the desired changes.
3. Click **OK** to save your changes.

The **Global ICA Client Settings** dialog box contains the following tabs:

- The **Default Hotkeys** tab, where you can define alternative key combinations for system hotkeys, See “Configuring Hotkeys” for more information.
- The **Preferences** tab, where you can control the default window and settings used for new connection entries, See “Configuring Global Preferences” for more information.

- The **Server Location** tab, where you can configure Business Recovery options, See “Configuring Server Location and Business Recovery” earlier in this chapter for more information.
- The **Firewall Settings** tab, where you can configure the client to use a SOCKS proxy and alternate address remapping, See “Configuring Firewall Settings” earlier in this section for more information.
- The **PNLite** tab, where you can enable and configure PNLite mode. In PNLite mode, a list of available published applications on the network is “pushed” to the ICA client and displayed in the **Connection Manager** dialog box. This means the user need not configure each connection entry manually. See “PNLite Mode” earlier in this chapter for more information.

## Configuring Hotkeys

The ICA Windows CE Client provides users with hotkeys that can be used during ICA sessions to control various functions. Some hotkeys control the behavior of the ICA Windows CE Client itself while others emulate standard Windows hotkeys. When you want to use a Microsoft Windows key combination during a session, use the mapped hotkey instead. The following table lists the default ICA Windows CE Client hotkeys.

Name	Default Value	Description
Status Dialog	CTRL+6	Displays ICA Client connection status.
Close Session	CTRL+2	Disconnects the ICA Windows CE Client from the Citrix server and closes the client window on the local desktop. Using this hotkey leaves the ICA session running in a disconnected state on the Citrix server. If you do not want to leave your session running in a disconnected state, log off instead.
Esc	CTRL+3	Provides the functionality of an ESC key on your terminal.
CTRL-ALT-DEL	CTRL+4	Displays the <b>Windows NT Security</b> dialog box on a MetaFrame for Windows server.
CTRL-ESC	CTRL+5	On MetaFrame for Windows servers, the Windows <b>Start</b> menu is displayed. On <i>WINFRAME</i> servers, this hotkey displays the <b>Task List</b> .
ALT-ESC	CTRL+7	This hotkey cycles the focus through the minimized icons and open windows of applications run in your ICA session.

Name	Default Value	Description
ALT-TAB	CTRL+8	This hotkey cycles through all applications in the ICA session. A pop-up box appears and displays the programs as you cycle through them. The selected application receives keyboard and mouse focus.
ALT-BACKTAB	CTRL+9	Like the ALT+TAB hotkey, this key sequence cycles through applications that have been opened in the ICA session, but in the opposite direction. The chosen application receives keyboard and mouse focus.

➤ **To change the default hotkeys**

1. Display the **Global ICA Client Settings** dialog box according to the instructions for your Windows-based terminal device.
2. On the **Hotkeys** page, use the lists of keys to customize the default hotkey key sequences.
3. Click **OK** to save your changes.

## Configuring Global Preferences

The following settings are configured in the global **Preferences** tab:

- **Default Window Colors.** In the **Window Colors** box, select the color depth you require. When using a PPP connection, 16 color mode may provide better performance. If the window options specified exceed the capabilities of the client hardware, the maximum color depth supported by the Windows CE device are used instead.

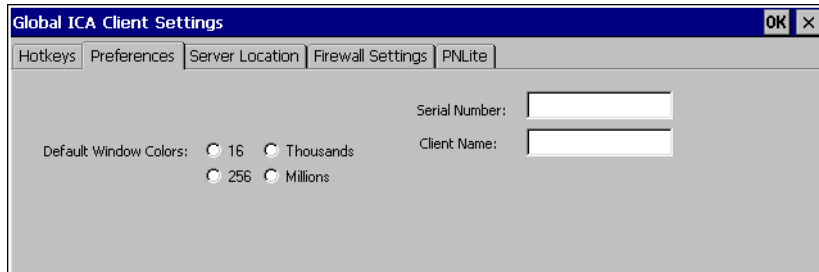
---

**Note** The options to select Thousands or Millions of colors are not available if your device is not capable of high color display.

---

- **Serial Number.** This is the serial number of your ICA Client software. This number is only necessary when you are using the ICA Windows CE Client with a product such as *WINFRAME* Host/Terminal, which requires each ICA Client to have a Citrix PC Client Pack serial number. If a serial number is required, you must enter it exactly as it appears on the Serial Number card. The serial number is not used when connecting to MetaFrame servers.
- **Client Name.** This box allows you to set the name of your client device. Citrix servers use the client name to uniquely identify resources (such as mapped printers) associated with a given client device. The client name should be unique for each computer running a Citrix ICA Client. If you do not use unique client names, device mapping and application publishing may not operate correctly.

- **To change global preferences**
  1. Display the **Global ICA Client Settings** dialog box according to the instructions for your Windows-based terminal device.
  2. Click the **Preferences** tab.



3. Make the desired changes.
4. Click **OK** to save your changes.

## Improving Performance and Security

Use the **Preferences** tab in the **Edit Connection** dialog box to enable data compression, or enable SpeedScreen latency reduction to increase performance over high latency connections.

### Data Compression

Data compression reduces the amount of data transferred across the ICA session. This requires additional processor resources to compress and decompress the data, but can increase performance over bandwidth-limited connections.

- **To enable data compression**
  1. In **Connection Manager** dialog box, select the connection entry that you want to change.
  2. Click the **Options** tab.
  3. Select **Compress Data Stream** to reduce the amount of data transferred across the ICA session.

## SpeedScreen Latency Reduction

SpeedScreen latency reduction improves responsiveness over high latency connections by providing feedback to the user in response to typed data or mouse clicks.

---

**Note** SpeedScreen will only work if the server-side SpeedScreen feature is available has been enabled on the Citrix server to which you are connecting.

---

- **To change SpeedScreen latency reduction settings**
  1. In **Connection Manager** dialog box, select the connection entry that you want to change.
  2. Click the **Options** tab.
  3. In the **SpeedScreen** field, select the setting (**On**, **Off** or **Auto**) you need.
    - For slower connections (for example, if you are connecting over a WAN or a dial-in connection), set mode to **On** to decrease the delay between user input and screen display.
    - For faster connections (for example, if you are connecting over a LAN), set mode to **Off**.
    - If you are not certain of the connection speed, set the mode to **Auto** to turn SpeedScreen latency reduction on or off automatically depending on the latency of the connection.

## 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 (e.g., SecureICA services), you can use it to improve security.

- **To change the encryption settings for an ICA connection**
  1. In **Connection Manager** dialog box, select the connection entry you want to configure.
  2. In the Properties tab, click **Options**.
  3. Click **Encryption** and select the level of encryption you want to use. The default level is **Basic**. Select **RC5 128-bit Login Only** to use encryption only during authentication.

The Citrix server must be configured to allow the selected encryption level or greater. For example, if the Citrix server is configured to allow RC5 56-bit connections, the ICA client can connect with RC5 56 or 128-bit encryption.

---

**Note** To use advanced encryption, you need to install SecureICA on your Citrix server. The Citrix server must also be configured to allow the selected encryption level or greater.

---

## Using Applications Published on MetaFrame for UNIX

For connections to applications published on a MetaFrame for UNIX, two additional utilities provide functionality for configuring session display and copying and pasting 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.		Remote session windows are minimized as icons on the desktop.
Open a minimized window		Click its button on the taskbar or its icon on the desktop.
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 want 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		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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