



Online Plug-in for Macintosh 11.2

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Readme for Citrix Online Plug-in for Macintosh 11.2

Readme Version: 1.0

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Finding Documentation

To access complete and up-to-date product information, go to Citrix eDocs located at <http://support.citrix.com/proddocs/index.jsp> and expand the topics for your product.

Licensing Documentation

To access licensing documentation, go to <http://support.citrix.com/proddocs/topic/licensing/lic-library-node-wrapper.html>.

Getting Support

Citrix provides technical support primarily through Citrix Solutions Advisor. Contact your supplier for first-line support or use Citrix Online Technical Support to find the nearest Citrix Solutions Advisor.

Citrix offers online technical support services on the [Citrix Support Web site](#). The Support page includes links to downloads, the Citrix Knowledge Center, Citrix Consulting Services, and other useful support pages.

Known Issues

- Users cannot launch sessions from Safari after upgrading from Version 10.0 to Version 11.2 of the plug-in if Safari is left open during the upgrade process. To avoid this issue,

either close and re-open Safari after the upgrade is complete or ensure Safari is closed during the upgrade process. [#237992]

- Users may experience issues with keyboard input if the current keyboard layout for the virtual desktop (for XenDesktop sessions) or server (for XenApp sessions) to which they connect differs from the original default keyboard layout for that virtual desktop or server. As a workaround, for XenDesktop sessions only, users can change the current keyboard layout on the virtual desktop to match the original default keyboard layout. There is no workaround for XenApp sessions. [#238285], [#224018], [#223499]
- The Desktop Connecting dialog box fails to close when launching desktops hosted by XenApp 6.0. As a workaround, users should close the Desktop Connecting dialog box after connecting to their desktop. [#239727]
- Users cannot subscribe to applications and virtual desktops using Dazzle if logged on to the client device with a normal user account. Dazzle requires the user to be logged on as an administrator. If this is not possible in your environment, the following workarounds allow a user logged on with a normal account to subscribe to applications:
 - Drag applications and virtual desktops to the desktop or to a folder other than the Applications folder, rather than clicking the Add button in Dazzle.
 - Log on as an administrator, create a Dazzle folder in Applications, and set the permissions for that folder to Read and Write for all users.
 - Ask a system administrator to log on, run Dazzle, and modify the permissions for the Dazzle folder to Read and Write for all users. [#212763, 219444]
- Minimized applications may re-appear in the foreground of your screen when launching new applications using the plug-in. Note that this issue is seen only with applications to which you have subscribed using Dazzle. It is not seen with applications accessed through Web Interface. [#222517]

<http://www.citrix.com>

Citrix Online Plug-in for Macintosh 11.2 Release Note

This release note summarizes the new features and enhancements in Citrix Online Plug-in for Macintosh, Version 11.2 and describes how to install or upgrade to this version.

What's New

The Online Plug-in for Macintosh, Version 11.2 provides the following new features and enhancements, which are all described in more detail in subsequent sections of this release note:

- Server-client content redirection
- Desktop resize support
- Desktop toolbar support
- Direct application launch using Dazzle
- Extended client drive mapping support
- Extended multi-monitor support

Server-client Content Redirection

Server-client content redirection enables administrators to specify that URLs in a published application are opened using a local application. For example, opening a link to a Web page while using Microsoft Outlook in an ICA session opens the required file using the browser on the client device. Server-client content redirection enables administrators to allocate Citrix resources more efficiently, thereby providing users with better performance.

The following types of URL can be redirected:

- HTTP (Hypertext Transfer Protocol)
- HTTPS (Secure Hypertext Transfer Protocol)
- RTSP (Real Player)
- RTSPU (Real Player)
- PNM (Older Real Players)
- MMS (Microsoft Media Server)

Server-client content redirection is configured on the server.

Desktop Resize Support

Desktop resize support enables users to resize their desktop when connected to desktop sessions, using the resize control, zoom button, or by selecting **Full screen** or **Windowed** from the **View** menu on the toolbar. Note that these options are available only when connected to non-seamless sessions.

Desktop Toolbar Support

The new Desktop Toolbar enables users to perform the following tasks when connected to full screen desktop sessions:

- Switch between the desktop session and the local desktop
- Switch between full screen and windowed view for the desktop session
- Send CTRL+ALT+DEL to the desktop session to lock or log off from the remote desktop
- Disconnect from the remote desktop
- Change Online Plug-in for Macintosh preferences

For more information, see [Configuring Desktop Toolbar Support](#), below.

Direct Application Launch Using Dazzle

Users can now launch applications and desktops direct from Dazzle, by double-clicking on an application or desktop icon after subscribing to that application or desktop.

Extended Client Drive Mapping Support

Extended client drive mapping support enables users to select to always allow or deny access to local drives from remote applications and desktops. Users can also select to allow read-only access to local drives, if required.

Extended Multi-monitor Support

Improved multi-monitor support enables users to launch full screen desktop sessions from XenDesktop across multiple monitors. Users can also resize existing session windows, by dragging the session window to cover multiple monitors and selecting **Full screen** from the **View** menu.

For more information, see [Configuring Extended Multi-monitor Support](#), below.

How to Use Plug-in for Macintosh Documentation

Known issues in this version are described in [Readme for Online Plug-in for Macintosh 11.2](#).

Installing and Upgrading

Upgrading to the Online Plug-in for Macintosh, Version 11.2 is supported from either version 11.0 or version 11.1 of the plug-in.

Important: Before upgrading to the latest version of the plug-in, you must remove all applications and desktops to which you have subscribed using an earlier version.

Configuring Desktop Toolbar Support

Administrators can configure Desktop Toolbar support on both the server and the client device. If Desktop Toolbar support is not configured on the server, it can still be configured on the client device. If Desktop Toolbar support is explicitly disabled on the server, however, this overrides any configuration on the client device.

To configure Desktop Toolbar support on the server

1. Open the default.ica file, typically located in `C:\inetpub\wwwroot\Citrix\SiteName\conf\`.
2. Add `ConnectionBar=1` to the Applications section.
3. Save the file and restart the server.

To configure Desktop Toolbar support on the client device

1. Open the Config file, located in a user's home folder at `Username/Library/Preferences/Citrix\CAClient/`
2. Add `ConnectionBar=1` to the Thinwire 3.0 section.
3. Save the file.

Changes take effect the next time a user connects to a desktop session from the client device.

Configuring Extended Multi-monitor Support

Administrators can configure extended multi-monitor support for users either on a per-server or per-client device basis.

To configure extended multi-monitor support on the server

1. Open the default.ica file, typically located in `C:\inetpub\wwwroot\Citrix\SiteName\conf\`.

2. Add the following parameters to the Applications section:
 - DesiredHRES= Width of session, between 120 and 8000 pixels
 - DesiredVRES= Height of session, between 80 and 6000 pixels
 - DesiredHPos= Horizontal position of the top-left corner of the desktop session
 - DesiredVPos= Vertical position of the top-left corner of the desktop session
 - DesiredWinType=16
3. Save the file and restart the server.

To configure extended multi-monitor support on the client device

1. Open the Config file, located in a user's home folder at *Username/Library/Preferences/CitrixICAClient/*
2. Add the following parameters to the Thinwire 3.0 section:
 - DesiredHRES= Width of session, between 120 and 8000 pixels
 - DesiredVRES= Height of session, between 80 and 6000 pixels
 - DesiredHPos= Horizontal position of the top-left corner of the desktop session
 - DesiredVPos= Vertical position of the top-left corner of the desktop session
 - DesiredWinType=16
3. Save the file.

Changes take effect the next time a user connects to a desktop session from the client device.

Important: Remember the following when configuring extended multi-monitor support:

- The numbers of pixels specified for the DesiredHRES and DesiredVRES parameters must add up to the total resolution of monitors in a user's setup. For example, if users have 2 monitors, each with a resolution of 1024x768, specify 2048 for DesiredHRES and 768 for DesiredVRES.
- By default, both the DesiredHPos and DesiredVPos parameters are set to 0, where "0,0" are the coordinates assigned to the top left-hand corner of the top left-hand monitor in a user's setup and specify a desktop sessions' top left-hand position on screen. To position a desktop sessions' top left-hand corner elsewhere on-screen, specify other coordinates for these parameters.
- The DesiredWinType parameter must be set to 16.

About the Plug-in for Macintosh

The Citrix online plug-in for Macintosh (*the plug-in*) provides users with access to resources published on XenApp or XenDesktop servers. The plug-in combines ease of deployment and use, and offers quick, secure access to applications and virtual desktops.

After subscribing to published resources, users can access those resources from a familiar Macintosh desktop environment. Users work with published resources the same way they work with local applications and files. Published resources are represented on the local desktop, by icons that behave just like local icons, on the Dock, or in the Dazzle folder available from the Finder.

Users can also access published resources from within a familiar browser environment, by clicking links on a Web page you publish on your corporate intranet or the Internet.

Deploying the Plug-in for Macintosh

Installation files for the plug-in are available for download from the Citrix Web site.

This section contains information about system requirements, installation packages, and installing the plug-in in your environment.

System Requirements

Ensure your system meets the following hardware and software requirements before installing the plug-in.

Hardware Requirements

The computer on which you intend to install the plug-in must meet the following minimum requirements:

- At least 256 MB of RAM
- 29 MB of free disk space
- A working network or Internet connection to connect to servers

Software Requirements

You can install the plug-in manually or through Citrix Receiver. Supported operating systems for each install type are as follows:

Operating System	Install manually?	Install through Receiver?
Mac OS X Version 10.4 (Intel-based) 32-bit and 64-bit	Yes	No
Mac OS X Version 10.4 (PowerPC-based) 32-bit and 64-bit	Yes	No
Mac OS X Version 10.5 (Intel-based) 32-bit and 64-bit	Yes	Yes
Mac OS X Version 10.5 (PowerPC-based) 32-bit and 64-bit	Yes	No
Mac OS X Version 10.6 (Intel-based) 32-bit and 64-bit	Yes	Yes

Overview of Plug-in Installation Packages

This release contains two installation packages and offers several options for installing the plug-in. You can install the two plug-in installer packages with almost no user interaction.

- **Citrix_online_plugin.dmg** - Complete package
- **Citrix_online_plugin_web.dmg** - Smaller, more limited package that you can deploy from a Web page.

Note: The Citrix online web plug-in package does not include Dazzle.

Note: Upgrades are supported only from versions 10.x and 11.0 of the plug-in. Remove any earlier versions before installing the online plug-in.

Using the Merchandising Server and Citrix Receiver to Deploy the Plug-in

Citrix recommends using the Merchandising Server and Citrix Receiver for Macintosh to deploy and update the plug-in to a user device.

Citrix Merchandising Server administrator console. With the administrator console, you can upload the plug-in installation and metadata files, create reusable rules to define the delivery recipients, and create deliveries.

Citrix Receiver client (Receiver for Macintosh). After users install Receiver for Macintosh on their user devices, Receiver installs, updates, and starts the plug-in with minimal user interaction.

Users can change their plug-in settings using the **Application Delivery** pane in Citrix Receiver preferences.

Upgrading the Plug-in with Receiver

Updates are, by default, automatically installed on the user device. When an update is available, the Receiver downloads and installs the updated plug-in.

Uninstalling the Plug-in with Receiver

Receiver upgrades the plug-in when a newer plug-in is available. When users remove the Receiver manually, the plug-in is also removed. Additionally, the administrator can remove the Receiver and all of its managed plug-ins through the Merchandising Server Administrator Console.

For more information, see the Merchandising Server documentation.

Installing the Plug-in

You can download the Citrix online plug-in for Macintosh from the Citrix Web site, at <http://www.citrix.com>.

To install the plug-in

1. Log on as an administrator.
2. Download the .dmg file for the version of the plug-in you want to install from the Citrix Web site and open it. This runs the Disk Utility program, which mounts the file as a disk image accessible from your Macintosh desktop.
3. On the **Introduction** page, click **Continue**.
4. On the **License** page, click **Continue**.
5. Click **Agree** to accept the terms of the License Agreement.
6. On the **Destination Select** page, select the volume where you want to install the plug-in and click **Continue**.
7. On the **Installation Type** page, click **Install**.
8. Enter the administrator account details for the device on which you are installing the plug-in and click **OK**.
9. To subscribe to applications and desktops immediately, click **Open Dazzle now** when prompted.

Upgrading the Plug-in

You can upgrade to the latest version of the plug-in from the following previous versions:

- Citrix Presentation Server Client for Macintosh, Version 10.0
- Citrix Online Plug-in for Macintosh, Version 11.0 (Full)
- Citrix Online Plug-in for Macintosh, Version 11.0 (Web)

Before upgrading to version 11.1 of the Citrix online plug-in, be aware of the following:

- You must remove all applications and desktops to which you have previously subscribed before upgrading to the latest version of the plug-in.
- Any existing custom connection files are preserved and can be used to connect to remote applications and desktops. The creation of new custom connection files, however, is no longer supported.

Uninstalling the Plug-in

Uninstall instructions for the plug-in differ, depending on whether you installed it manually or through Citrix Receiver. If you installed the plug-in manually, you can uninstall it using this procedure. If you installed the plug-in through Citrix Receiver, refer to the Receiver for Macintosh documentation for complete uninstall instructions.

To uninstall the plug-in

1. Open the **Uninstall Citrix online plug-in** application located in **/Library/Application Support/Citrix/**.
2. Click **Continue**.
3. Enter the administrator account details for the device from which you are uninstalling the plug-in and click **OK**.
4. Click **Finish**.

Using Dazzle

Dazzle provides users with self-service access to the applications and desktops they need to work productively. Icons for those applications and desktops can be presented on the local desktop, on the Dock, or in the Dazzle folder available from the Finder.

The new, easy-to-use interface allows users to subscribe to applications and desktops hosted on XenApp and XenDesktop servers with a single click, replacing the need for individual connection files used by earlier versions of the plug-in.

For more information about connection files, see [Custom Connection Files and the ICA Client Editor](#).

Opening Dazzle

The way you open Dazzle depends on whether you installed the plug-in manually or through Citrix Receiver, as follows:

- If you installed the plug-in manually, open **Dazzle** from the **Citrix** folder in the **Applications** folder.
- If you installed the plug-in through Citrix Receiver, choose **Dazzle...** from the **Citrix Receiver** menu.

Choosing Your Applications and Desktops

At the end of the plug-in install you are prompted to launch Dazzle. After launching Dazzle, you can select the applications and desktops you want to subscribe to and begin working with those applications and desktops immediately.

You can also launch Dazzle separately, when you want to subscribe to other applications or desktops; for example, when new applications or desktops are added to those already hosted by a store or when a new store is added to the list.

To subscribe to applications or desktops when installation completes

1. Select the checkbox labeled **Open Dazzle now** when prompted at the end of the plug-in installation process, and then click **Continue**.
2. Do one of the following:
 - If a **No Stores Configured** message appears, click **OK** to open Preferences and then select the **Dazzle Stores** pane. Click the **Plus** button. Enter the name and address for the store to which you want to connect and click **OK**. Close Preferences and go to Step 4.
 - If stores have already been configured, select the store hosting your applications and desktops from the list of available stores.
3. If requested, enter the user name and password for the store hosting your applications or desktops and click **OK**.

Note: If you want to add these details to your keychain, select **Remember this password in my keychain**.

4. Select the applications and desktops you want to subscribe to and click **Add**. This adds the applications and desktops to your **Dazzle** folder. Alternatively, you can drag the applications or desktops to your local desktop or any folder of your choice. If you do not see the application or desktop you require, you can search for it by selecting **All Applications** and typing the name in the search field.

To subscribe to additional applications and desktops

1. Open **Dazzle**.
2. Select the store hosting your applications and desktops from the list of available stores.
3. If requested, enter the user name and password for the store hosting your applications or desktops and click **OK**.

Note: If you want to add these details to your keychain, select **Remember this password in my keychain**.

4. Select the applications and desktops you want to subscribe to and click **Add**. This adds the applications and desktops to your **Dazzle** folder. Alternatively, you can drag the applications or desktops to your local desktop or any folder of your choice. If you do not see the application or desktop you require, you can search for it by selecting **All Applications** and typing the name in the search field.

Adding an Alias for an Application or Desktop to the Dock

You can add an alias for a hosted application or virtual desktop to the Dock, quickly and easily, by dragging the application or desktop icon from the folder view in Dazzle directly to the Dock. Alternatively, you add an alias to the Dock in the same way as you can for any local application, using the procedure below.

To add an alias for an application or desktop to the Dock

1. In the **Finder**, open the folder containing the application or desktop you want to add to the dock.
2. Drag the application or desktop icon to the Dock.

Launching Applications and Desktops

Users launch hosted applications and virtual desktops in exactly the same way as local applications. If a user does not add their account information for the Citrix server to the keychain, they are asked to enter that information before the application or desktop launches.

Users can search for applications and desktops to which they have subscribed using Spotlight and can also rename them to more easily distinguish between local and hosted versions.

Removing Applications and Desktops

You can remove applications and desktops you no longer need access to by dragging them to the **Trash**. Alternatively, you can use Dazzle to remove applications and desktops located in both the Dazzle folder and any sub-folders you have created.

If you require access to an application or desktop after removing it, use Dazzle to subscribe to that application or desktop again.

To remove applications and desktops using Dazzle

1. Open **Dazzle**.
2. Select the folder containing the applications and desktops you want to remove.
3. Click **Remove** to remove each application or desktop you no longer require access to.

Working with Dazzle Stores

If you installed the plug-in manually, you need to add stores to the Dazzle stores list when you start Dazzle for the first time.

If you installed the plug-in through Receiver, you are presented with a list of available stores (XenApp or XenDesktop servers) from which you can choose your applications and desktops when you start Dazzle for the first time. This list of stores is pre-configured using Merchandising Server.

From time to time, you may also need to add new stores to or remove old stores from this list. For example, if your applications and desktops are migrated from one server to another, you can add the new server hosting those resources to the list and remove the existing server to which you no longer require access. You may also need to edit the details of a store you have set up; for example, if the URL for a store changes or you want to change a store's name. You can add, remove, and edit stores by selecting **Preferences...** from the list of available stores in **Dazzle**.

Note: You can edit the details of and remove from the list only those stores that you added manually. Stores delivered through Merchandising Server, and denoted by a padlock next to their entry in the **Stores** list, can not be removed.

To add a new store to the stores list

1. Select **Preferences...** from the list of available stores and then select the **Dazzle Stores** pane.
2. Click the **Plus** sign.
3. Enter a name for the new store in the **Store Name** field.
4. Enter the address of the new store (server) to which you want to connect in the **Store URL** field and click **OK**.

To connect to a new store

1. Open **Dazzle**.
2. Choose the new store to which you want to connect from the list of available stores.
3. If requested, enter the user name and password for the new store and click **OK**.

Note: If you want to add these details to your keychain, select **Remember this password in my keychain**.

After you connect to the new store, you can subscribe to applications and desktops hosted by that store in the usual way.

To remove a store from the stores list

1. Select **Preferences...** from the list of available stores and then select the **Dazzle Stores** pane.
2. Select the store you want to remove from the **Stores** list.
3. Click the **Minus** sign, then click **OK** to confirm you want to remove the store from the list.

To edit the details of a store

1. Select **Preferences...** from the list of available stores and then select the **Dazzle Stores** pane.
2. Double-click the store you want to edit.
3. Edit the details in **Store Name** and/or **Store URL** fields, as required.
4. Click **OK**.

Configuring the Plug-in for Macintosh

After the plug-in software is installed, you can configure various plug-in settings.

The way you configure these settings depends on whether you installed the plug-in manually or through Citrix Receiver. Although the settings themselves are identical in each case, the way you access them differs.

Configuring a Plug-in You Installed Manually

If you installed the plug-in manually, choose **Apple** menu > **System Preferences** and click **Citrix online plug-in** to display plug-in preferences. All user configurable settings are contained within three tabs; **Appearance**, **Keyboard**, and **Devices**.

Configuring a Plug-in Installed through Citrix Receiver

If you installed the plug-in through Citrix Receiver, choose **Apple** menu > **System Preferences** and click **Citrix Receiver** to display Receiver preferences. All user configurable settings are accessed from the **Application Delivery** pane. Choose from **Appearance**, **Keyboard**, or **Devices** depending on the settings you want to configure.

Configuring Window Properties

You can configure the plug-in to display virtual desktops in either fixed size windows or as full screen. Hosted applications are automatically displayed in seamless mode, in fully resizable windows.

To configure window properties

1. Click **Appearance**.
2. Select whether you want to display virtual desktops in **Windowed** or **Full Screen** mode.

Showing and Hiding the Menu Bar and Dock

When viewing virtual desktops in full screen mode, the Macintosh menu bar and Dock might be hidden.

To display the Macintosh menu bar, press Control-Option. The same key combination also hides it again.

Note: If you are not in full screen mode, and your window size enables you to see the entire desktop, you can use Control-Option to show a standard Macintosh resize control in the bottom right corner of the ICA session window. The same key combination hides the resize box again.

If the window size is too small to show the entire desktop, you must use the scroll bars to see the hidden content of the desktop.

To display both the complete window and the Macintosh menu bar when connected to a session, from the Citrix online plug-in menu, choose **View > Best Window Position**.

You can also configure the plug-in to show the menu bar and Dock automatically, whenever you move your mouse to the top of the screen or to the edge where the Dock is located. If you select this option, the Dock is hidden when you are not using it.

To show and hide the menu bar and Dock automatically

1. Click **Appearance**.
2. Select **Show the Dock and menu bar**. Alternatively you can use the standard Macintosh method from the Apple menu by choosing **Dock > Dock Preferences > Automatically hide and show the Dock**.

Mapping Client Devices

You can map local drives and devices so that they are available from within a session. If enabled on the server, client device mapping allows a remote application or desktop running on the server to access devices attached to the local client device. You can:

- Access local drives, COM ports, and printers
- Hear audio (system sounds and audio files) played from the session

Note that client audio mapping and client printer mapping do not require any configuration on the client device.

Mapping Client Drives

Client drive mapping allows you to access the local disk drives of the client device, including CD-ROM drives, during sessions. When a server is configured to allow client drive mapping, users can access their locally stored files, work with them during their sessions, and then save them either on a local drive or on a drive on the server.

In addition, you can configure servers to map their server drives. When server drives are mapped and the drive letters clash with those selected for the user's local drives, the server automatically changes the client drive letters.

Because Windows operating systems recognize file paths with drive letters but not Macintosh paths, the plug-in needs to map local Macintosh folders to drive letters for published applications and remote desktop sessions to locate local files.

For example, to use the files in the Macintosh HD/MacClientDocs/Docs/MacPDF folder, you can map Macintosh HD/MacClientDocs/Docs to drive M and within a session access the files using the path M:\MacPDF.

To map client drives

1. Click **Devices**. The **Mapped Drives** pane lists the disk or path name of every Macintosh folder already mapped to each drive on the server. The Read and Write columns show whether or not you have read and write access. Drives A, B, and C are mapped automatically as follows:

Drive	Mapped to
A	A Macintosh removable media drive (floppy disk, USB flash drive, or any other item that is removable and can be written to).
B	The Macintosh internal CD or DVD drive, or any other item that is removable and non-writable, such as a disk image .dmg file.
C	Permanently mapped to the user's Home folder on the Macintosh hard disk.

2. Click the **Plus** button.
3. Select an available drive letter.
4. Click **Browse**.
5. Select the folder on the Macintosh hard drive that you want to map and click **Browse**.
6. Click **Create**. The **Mapped Drives** pane now displays the mapped folder.
7. Select the level of read and write access for the mapped drive from the **Read** and **Write** pop-up menus.
8. Log out of any open sessions and reconnect to apply the changes.

Mapping Client COM Ports

Client COM port mapping allows devices attached to the COM ports of the client device to be used during sessions on a server. These mappings can be used like any other network mappings.

Macintosh serial ports do not provide all the control signal lines that are used by Windows applications. The DSR (Data Set Ready), DCD (Device Carrier Detect), RI (Ring Indicator), and RTS (Request To Send) lines are not provided. Windows applications that rely on these signals for hardware handshaking and flow control may not work. The Macintosh implementation of serial communications relies on CTS (Clear To Send) and DTR (Data Terminal Ready) lines for input and output hardware handshaking only.

To map client COM ports

1. Click **Devices**.
2. Select the COM port you want to map, from the **Mapped COM Ports** list. This is the virtual COM port that is displayed in the session, not the physical port on the local machine.
3. Select the device to associate with the virtual COM port from the **Device** pop-up menu.
4. Start the plug-in and log on to a server.
5. Run a command prompt.
6. At the prompt, type `net use comx: \\client\comz:` where *x* is the number of the COM port on the server (ports 1 through 9 are available for mapping) and *z* is the number of the client COM port (ports 1 through 4 are available).
7. To confirm the mapping, type `net use` at the prompt. A list displays mapped drives, LPT ports, and mapped COM ports.

Printing

You can access printers connected to client devices during a session. When a server is configured to allow client printer mapping, applications running remotely on the server can print to any printer that can be used from locally running applications.

No special configuration is needed to set up local printers to print during an ICA session. Note, however, that A4 pages might not print correctly if you choose the A4 paper size option in the Page Setup dialog box (or the Page Layout tab in the case of Microsoft Office 2007 applications). In order to print on A4 paper, the user must either specify it as a default size and use the A4 paper size option, or choose the A4 210×297 option if available.

To set A4 as the default, from the plug-in **File** menu choose **Default Paper Size > A4**. All other paper sizes will print correctly if the printer supports that paper size.

Optimizing the Plug-in Environment

By optimizing your environment you gain the best performance from the plug-in and provide the best user experience.

Improving Performance

You can improve the performance of the plug-in software by enabling auto-client reconnections, session reliability, and SpeedScreen Latency Reduction.

Reconnecting Users Automatically

Users can be disconnected from their sessions because of unreliable networks, highly variable network latency, or range limitations of wireless devices. With the HDX Broadcast auto-client reconnection feature, the plug-in can detect unintended disconnections of ICA sessions and reconnect users to the affected sessions automatically.

When this feature is enabled on the server, users do not have to reconnect manually to continue working. The plug-in attempts to reconnect to the session until there is a successful reconnection or the user cancels the reconnection attempts. If user authentication is required, a dialog box requesting credentials appears to a user during automatic reconnection. Automatic reconnection does not occur if users exit applications without logging off. Users can reconnect only to disconnected sessions.

Providing HDX Broadcast Session Reliability

With the HDX Broadcast Session Reliability feature, users continue to see a published application's window if the connection to the application experiences an interruption. For example, wireless users entering a tunnel may lose their connection when they enter the tunnel and regain it when they emerge on the other side. During such interruptions, the session reliability feature enables the session window to remain displayed while the connection is being restored.

You can configure your system to display a warning dialog box to users when the connection is unavailable.

HDX Broadcast Session Reliability is enabled on the server by default. Users of the plug-in cannot override the server settings for HDX Broadcast Session Reliability.

Important: If HDX Broadcast Session Reliability is enabled, the default port used for session communication switches from 1494 to 2598.

Reducing Display Latency

Over high latency connections, you might experience significant delays between the time when you type text at the keyboard and when it is displayed on the screen. Similarly, there may be a delay between clicking a mouse button and the screen displaying any visible feedback. This can result in you retyping text or making several unnecessary mouse clicks. When enabled on the server, SpeedScreen Latency Reduction lessens the impact of high latency connections on your display.

SpeedScreen Latency reduction is not supported when connecting to Citrix XenApp for UNIX.

Changing the Way You Use the Plug-in

ICA technology is highly optimized and typically does not have high CPU and bandwidth requirements. However, if you are using a very low-bandwidth connection, the following tasks can impact performance:

- **Accessing large files using client drive mapping.** When you access a large file with client drive mapping, the file is transferred over the ICA connection. On slow connections, this may take a long time.
- **Printing large documents on local client printers.** When you print a document on a local client printer, the print file is transferred over the ICA connection. On slow connections, this may take a long time.
- **Playing multimedia content.** Playing multimedia content uses a lot of bandwidth and can cause reduced performance.

Improving the User Experience

The plug-in provides a number of features for improving the user experience, including improved support for ClearType font smoothing and substituting Windows special keys with familiar Mac key combinations within a session.

ClearType Font Smoothing in ICA Sessions

Citrix XenApp supports ClearType font smoothing with Citrix online plug-in.

If you enable ClearType font smoothing on the XenApp server, you are not forcing client devices to use ClearType font smoothing. You are enabling the server to support ClearType font smoothing on client devices that have it enabled locally and are using the plug-in.

The plug-in automatically detects the client device's font smoothing setting and sends it to the server. The session connects using this setting. When the session is disconnected or terminated, the server's setting reverts to its original setting.

Making Keystrokes with Macintosh Keyboards

Remote sessions recognize most Macintosh keyboard combinations for text input, such as Option-G to input the copyright symbol ©. However some keystrokes you make during a session do not appear on the remote application or desktop, and instead are interpreted by the Macintosh operating system. This can result in keys triggering Macintosh responses instead. For example, F9 can be configured to run the All Windows feature of Exposé.

You might also face the problem of wanting to use certain PC keys, such as INSERT, that many Macintosh keyboards do not have.

Keyboards and the ways keys are configured can differ widely between machines. The plug-in therefore offers several choices to ensure that keystrokes can be correctly sent to desktops and applications running within a session. These are listed in the table.

Conventions used in the table:

- Letter keys are capitalized and do not imply that the Shift key should be pressed simultaneously.
- Hyphens between keystrokes indicate that keys should be pressed together (for example, Control-C).
- Character keys are those that create text input and include all letters, numbers, and punctuation marks; special keys are those that do not create input by themselves but act as modifiers or controllers. Special keys include Control, Alt, Shift, Command, Option, arrow keys, and function keys.
- Menu instructions relate to the menus in the session.
- Depending on the configuration of the client device, some key combinations might not work as expected, and alternative combinations are listed.
- Fn refers to the Fn (Function) key on a Macintosh keyboard; function key refers to F1 to F12 on either a PC or Macintosh keyboard.

PC key	Macintosh options
ALT+character key	Command-Option-character key (e.g. to send ALT-C, use Command-Option-C)
ALT+special key	Option-special key (e.g. Option-Tab) Command-Option-special key (e.g. Command-Option-Tab)
CTRL+character key	Command-character key (e.g. Command-C) Control-character key (e.g. Control-C)

CTRL+special key	Control-special key (e.g. Control-F4) Command-Control-special key (e.g. Command-Control-F4)
CTRL/ALT/SHIFT combination + function key	Choose Keyboard > Send Key > Control/Alt/Shift-function key
CTRL+ALT	Control-Command
CTRL+ALT+DEL	CTRL+ALT+DEL Control-Option-Forward Delete Control-Option-Fn-Delete (on MacBook keyboards)
DELETE	Delete Choose Keyboard > Send Key > Delete Fn-Backspace (Fn-Delete on some US keyboards)
END	End Fn-Right Arrow
ESC	Escape Choose Keyboard > Send Key > Escape
F1 to F9	F1 to F9 Choose Keyboard > Send Function Key > F1 to F9
F10	F10 Choose Keyboard > Send Function Key > F10
F11	F11 Choose Keyboard > Send Function Key > F11
F12	F12 Choose Keyboard > Send Function Key > F12
HOME	Home Fn-Left Arrow
INSERT	Command-Help Choose Keyboard > Send Key > Insert
NUM LOCK	Clear Fn-6
PAGE DOWN	Page Down Fn-Down Arrow
PAGE UP	Page Up Fn-Up Arrow

Making Keystrokes with Macintosh Keyboards

SPACEBAR	Choose Keyboard > Send Key > Space
TAB	Choose Keyboard > Send Key > Tab

Substituting Windows Special Keys

The plug-in provides a number of extra options and easier ways to substitute special keys such as function keys in Windows applications with Mac keys. Use the **Keyboard** tab to configure the options you want to use, as follows:

- **Send Control character using** enables you to choose whether or not to send Command-character key combinations as Ctrl+character key combinations within a session. If you select Command or Control from the pop-up menu, you can use familiar Command-character key combinations as Ctrl+character key combinations. If you select Control, you must use Ctrl+character key combinations.
- **Send Alt character using** enables you to choose how to replicate the Alt key within a session. If you select Command-Option, you can send Command-Option- key combinations as Alt+ key combinations within a session. Alternatively, if you select Command, you can use the Command key as the Alt key.
- **Send special keys unchanged** enables you to send keys that are normally used by the Mac OS to a session. You may, however, need to use the Command key as part of the key combination. For example, if F9 is assigned to Expose you send the F9 key to a session by pressing Command+F9.

You send function and other special keys to a session using the **Keyboard** menu. You can also use the following keystrokes:

PC Key or action	Macintosh options
INSERT	0 (zero) on the numeric keypad; Num Lock must be off Option-Help
DELETE	Decimal point on the numeric keypad; Num Lock must be off Clear
F1 to F9	Option 1 to 9 on numeric keypad
F10	Option 0 (zero) on numeric keypad
F11	Option minus sign on numeric keypad
F12	Option plus sign on numeric keypad

Using a Mouse

Citrix recommends using a two button mouse and configuring the right mouse button to be the secondary button. You can also emulate a PC mouse right-click using Option and click.

Securing Plug-in Communication

This section describes measures you can take to secure the communication between your server farm and the plug-ins. You can integrate your plug-in connections to the server farm with a range of security technologies, including:

- A SOCKS proxy server or secure proxy server (also known as security proxy server, HTTPS proxy server, or SSL tunneling proxy server)
- Secure Gateway for Citrix XenApp or SSL Relay solutions with Secure Sockets Layer (SSL) and Transport Layer Security (TLS) protocols
- A firewall

Connecting Through a Proxy Server

Proxy servers are used to limit access to and from your network, and to handle connections between plug-ins and servers. The plug-in support SOCKS and secure proxy protocols.

When communicating with the server farm, the plug-in uses proxy server settings that are configured remotely on the server running the Web Interface. For information about configuring proxy server settings for the plug-ins, see [Citrix eDocs](#).

In communicating with the Web server, the plug-in uses the proxy server settings that are configured for the default Web browser on the client device. You must configure the proxy server settings for the default Web browser on the client device accordingly.

Connecting with the Secure Gateway or Citrix Secure Sockets Layer Relay

You can integrate the plug-ins with the Secure Gateway or Secure Sockets Layer (SSL) Relay service. The plugins support both SSL and TLS protocols.

- SSL provides strong encryption to increase the privacy of your ICA connections and certificate-based server authentication to ensure the server you are connecting to is a genuine server.
- TLS (Transport Layer Security) is the latest, standardized version of the SSL protocol. The Internet Engineering Taskforce (IETF) renamed it TLS when it took over responsibility for the development of SSL as an open standard. TLS secures data communications by providing server authentication, encryption of the data stream, and message integrity checks. Because there are only minor technical differences between SSL Version 3.0 and TLS Version 1.0, the certificates you use for SSL in your software installation will also work with TLS. Some organizations, including U.S. government organizations, require the use of TLS to secure data communications. These organizations may also require the use of validated cryptography, such as FIPS 140 (Federal Information Processing Standard). FIPS 140 is a standard for cryptography.

Connecting with the Secure Gateway

You can use the Secure Gateway in either *Normal* mode or *Relay* mode to provide a secure channel for communication between the plug-in and the server. No plug-in configuration is required if you are using the Secure Gateway in Normal mode and users are connecting through the Web Interface.

If the Secure Gateway Proxy is installed on a server in the secure network, you can use the Secure Gateway Proxy in Relay mode. For more information about Relay mode, see [Citrix eDocs](#).

If you are using Relay mode, the Secure Gateway server functions as a proxy and you must configure the plug-in to use:

- The fully qualified domain name (FQDN) of the Secure Gateway server.
- The port number of the Secure Gateway server. Note that Relay mode is not supported by Secure Gateway Version 2.0.

The FQDN must list, in sequence, the following three components:

- Host name
- Intermediate domain
- Top-level domain

For example, *my_computer.my_company.com* is a FQDN, because it lists, in sequence, a host name (*my_computer*), an intermediate domain (*my_company*), and a top-level domain (*com*). The combination of intermediate and top-level domain (*my_company.com*) is generally referred to as the *domain name*.

Configuring the Plug-in for Secure Gateway

The plug-in uses settings that are configured remotely on the server running the Web Interface to connect to servers running the Secure Gateway.

In communicating with the Web server, the plug-in uses the proxy server settings that are configured for the default Web browser on the client device. You must configure the proxy server settings for the default Web browser on the client device accordingly.

Connecting with Citrix SSL Relay

By default, Citrix SSL Relay uses TCP port 443 on the Citrix server for SSL/TLS-secured communication. When the SSL Relay receives an SSL/TLS connection, it decrypts the data before redirecting it to the server, or, if the user selects SSL/TLS+HTTPS browsing, to the Citrix XML Service.

You can use Citrix SSL Relay to secure communications:

- Between an SSL/TLS-enabled client and a server.
- With a server running the Web Interface, between the XenApp server and the Web server.

For information about configuring and using SSL Relay to secure your installation or configuring the server running the Web Interface to use SSL/TLS encryption, see [Citrix eDocs](#).

Configuring and Enabling the Plug-in for SSL and TLS

SSL and TLS are configured in the same way, use the same certificates, and are enabled simultaneously.

When SSL and TLS are enabled, each time you initiate a connection the plug-in tries to use TLS first, then tries SSL. If it cannot connect with SSL, the connection fails and an error message appears.

There are two main steps involved in setting up SSL/TLS:

1. Set up SSL Relay on the XenApp server and server running the Web Interface and obtain and install the necessary server certificate. For more information, see [Citrix eDocs](#).
2. Install the equivalent root certificate on the client device.

Installing Root Certificates on Client Devices

To use SSL/TLS to secure communications between SSL/TLS-enabled plug-ins and the server farm, you need a root certificate on the client device that can verify the signature of the Certificate Authority on the server certificate.

Mac OS X comes with about 100 commercial root certificates already installed, but if you want to use another certificate, you can obtain one from the Certificate Authority and install it on each client device.

Depending on your organization's policies and procedures, you may want to install the root certificate on each client device instead of directing users to install it. The easiest and safest way is to add root certificates to the Mac OS X keychain.

To add a root certificate to the keychain

1. Double-click the file containing the certificate. This automatically starts the Keychain Access application.
2. In the **Add Certificates** dialog box, choose one of the following from the **Keychain** pop-up menu:
 - **X509Anchors** (if using Mac OS 10.4 Tiger)
 - **System** (if using Mac OS 10.5 Leopard)
3. Click **OK**.
4. Type your password in the **Authenticate** dialog box and click **OK**. The root certificate is installed and can be used by SSL-enabled clients and by any other application using SSL.

Connecting Through a Firewall

Network firewalls can allow or block packets based on the destination address and port. If you are using a firewall in your deployment, the plug-in must be able to communicate through the firewall with both the Web server and Citrix server. The firewall must permit HTTP traffic (often over the standard HTTP port 80 or 443 if a secure Web server is in use) for client device to Web server communication. For plug-in to Citrix server communication, the firewall must permit inbound ICA traffic on ports 1494 and 2598.

If the firewall is configured for Network Address Translation (NAT), you can use the Web Interface to define mappings from internal addresses to external addresses and ports. For example, if your XenApp server is not configured with an alternate address, you can configure the Web Interface to provide an alternate address to the plug-in. The plug-in connects to the server using the external address and port number. For more information, see [Citrix eDocs](#).