

Open Text® Exceed®

User's Guide

Version 14



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Related Documentation and Services

Manuals

Manuals are available in PDF format. PDFs are installed only if you perform a Complete installation, or if you select them during a Custom installation. To access installed PDFs, on the Start menu, click Documentation in the Open Text product group.

Help

The online Help provides comprehensive, context-sensitive information regarding your Open Text product. It contains conceptual and reference information and detailed, step-by-step procedures to assist you in completing your tasks.

Release Notes

The Release Notes contain descriptions of new features and details on release-time issues for your Open Text product and its components. You can access the Release Notes in HTML format during installation or from the CD. It is recommended that you read the sections that apply to your product before installing it.

Online Community

The Connectivity Community on Open Text Online provides customers and partners with a variety of resources on products from usage tips, help files, information on product releases, and best practices. As a member you can visit users groups and special interest places, participate in forums to find information and ask questions of peer experts. While designed for end users, these communities are of interest to anyone who works with Open Text Connectivity products.

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Introducing Exceed

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Quick Links

The following list contains links to topics that may be particularly useful for new users.

- “Exceed Applications and Tools” on page 9
- “Connecting” on page 21
- “Displaying X Clients” on page 30
- “Copying and Pasting in Exceed” on page 34
- “Accessing Hosts and Starting Applications” on page 40
- “Startup Methods” on page 42
- “Creating Startup Files” on page 44
- “Connecting to Hosts with Exceed Freedom” on page 211

What's New

Windows 7 Support

All Open Text Connectivity products are Windows 7 certified. The following Windows 7 features improve productivity and usability, and are available in some Open Text Connectivity products:

Jump Lists Jump lists are menus that let you start applications and components easily from the taskbar and Start menu. Some Open Text applications, including Xstart, Xconfig, Xsession, and HostExplorer, also allow you to pin profiles to the jump list, so you can connect and move between active host sessions quickly.

Hover over a program icon on the Start menu, or right-click the taskbar icon, to display the jump list. Items on the list are categorized:

- Pinned-Sessions or components you have pinned to the jump list
- Recent-Sessions or components recently started. You can pin these items, which moves them into the Pinned list.
- Tasks-Shortcuts to commonly used tasks

You can also pin frequently used programs directly to the Start menu or taskbar so that the icon is available even when the application is not running.

To pin a profile to your jump list:

- 1 Pin the application to the Start menu and/or taskbar.
- 2 Right-click the application on the taskbar. You must start HostExplorer to view its jump list.
- 3 In the Recent list, right-click the profile to pin to the jump list and select Pin To This List. Alternatively, you can hover over the profile, and click the pushpin icon. You must have previously attempted a connection for HostExplorer profiles to appear in the Recent list.

Thumbnail Toolbars Open Text applications support thumbnail toolbars, which appear when you hover over taskbar icons if applicable tasks exist. The toolbars provide quick access to common tasks, such as toggling connections and screen modes, so you don't have to locate these features in the application window.

Multitouch Device Support Open Text products are now fully multitouch capable. On properly equipped PCs and tablets, this touch-screen technology lets you use your fingers to size and move windows, and even select fields and options in session screens. Some basic gestures include:

- Tap and double-tap—Touch the screen and release to select an item or activate a field. Double-tap to open files and folders.
- Drag and drop—Touch an item and slide your finger on screen. Release your finger from the screen to drop. Use this option to select text or move files.

- Scroll—Slide your finger up or down on the content of a scrollable window.
- Resize Window—Slide two fingers in towards each other to decrease the size or slide them farther apart to increase the size of the active window.
- Middle Mouse Button—Tap two fingers to emulate the middle mouse button.
- View the context menu—Hold your finger on the screen for a few seconds and release to view a context menu. Alternatively, you can touch an item with one finger and tap with a second finger.

Welcome to Exceed

Exceed transforms your computer into a fully functional X Window terminal. It lets you run and display UNIX applications (X clients) from a Microsoft Windows environment. Exceed integrates your Windows desktop with environments such as UNIX, Linux, VMS, X Window System, IBM mainframes, and the Internet. Exceed is an integrated part of the Open Text Connectivity product family, which provides organizations with a comprehensive network connectivity solution.

Exceed includes innovative features that accelerate performance, simplify system administration, and optimize personal computing. Users are shielded from the complexities of network computing by working within the familiar Microsoft Windows environment. System administrators are provided with tools to set up, configure, and administer PCs remotely to ensure consistency among systems.

Use Exceed on your local computer to:

- Access powerful applications and information running on networked hosts.
- Establish simultaneous connections to different computers running X clients.

- Use an X window manager to display the visual interface you are familiar with from your X environment.

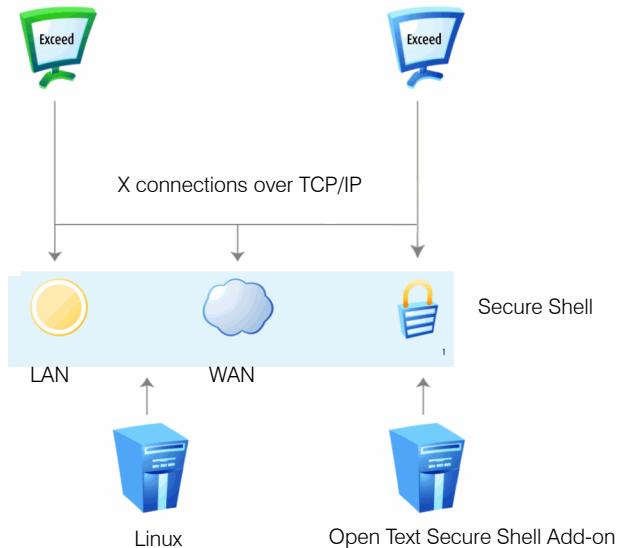
Note: Throughout this chapter, Xterm (a UNIX VT100 terminal emulator) is used as a sample X client. It provides a terminal emulation window on the host, and a command line where you can start other X clients.

Exceed and X Windows

In the X Window environment, the Exceed X server is also referred to as an X Window terminal or display server. Without Exceed X server software, X applications are accessible only via X terminals, UNIX, Linux, or VMS workstations.

Exceed works with your network transport software (TCP/IP or DECnet) or your modem to access X Window applications on hosts running the X Window System. A host can be any machine using an operating system that is running the X Window environment.

The figure below shows how Exceed lets your PC access the X Window environment.



The Exceed Interface

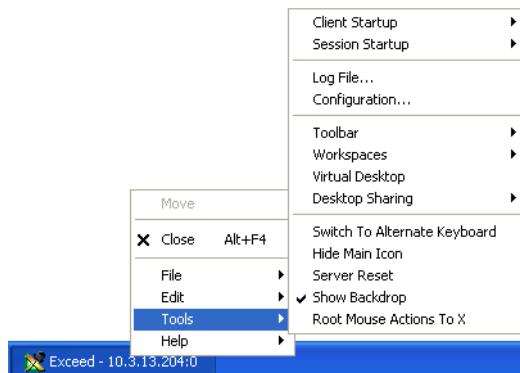
Exceed Menu

For more information on these menus, see Exceed Help.

The Exceed main menu is located on the Windows taskbar. You can use the Exceed menu for many general tasks including:

- reloading databases for RGB, font, and keyboard
- accessing applications such as Xstart, Xsession, and Xconfig to configure settings for the current session
- performing copy and paste actions
- displaying the virtual desktop window
- switching the keyboard
- resetting the server

- toggling between the Windows desktop and the X server backdrop
- specifying whether mouse actions on the Windows desktop are processed by Exceed
- viewing Exceed Help



The Exceed menu includes the File, Edit, Tools, Help, and Exceed Freedom submenus.

Note: The Exceed Freedom submenu appears only if you have started an Exceed Freedom session. For information on purchasing Exceed Freedom, contact your sales representative.

To access the Exceed menu:

With Exceed open, right-click Exceed in the taskbar. If Exceed does not appear in the taskbar, right-click the Exceed icon in the Windows system tray, select Tools and click Show Main Icon.

For more information, see "Setting the Window Manager for Exceed" on page 25.

If you are running an X application in multiple window mode with Default To Native as the window manager, you can access the Exceed menu by right-clicking the Exceed icon in the title bar of the window.

Exceed Toolbar

The Exceed toolbar is displayed when you open Exceed. The toolbar is a convenient way to perform typical Exceed menu actions while a session is running. You can drag and drop the toolbar to a desired location on your screen, or you can dock it by dragging it to the edge of your screen.



For more information on customizing the Exceed toolbar, see Exceed Help.

You can also customize the Exceed toolbar to include buttons for Exceed menu commands or other applications. For example, you can add buttons for actions such as reloading the keyboard, showing workspaces, and resetting the server.

Exceed Applications and Tools

You can also set up the connection manually.

Exceed contains several startup applications and tools that let you connect to a host and display UNIX, Linux, VMS and X applications on your PC.

On the Start menu, navigate to the Open Text Exceed program group to access the following applications:



Exceed Exceed is a PC X server that displays graphical UNIX, Linux, and X applications on your computer.



Exceed Connection Manager Exceed Connection Manager lets you view, create, rename, delete, and modify Xstart, Xsession, and Xconfig files from a single user interface. For more information, see Exceed Help.

Exceed Tools

On the Start menu, navigate to the Open Text Exceed program group, and point to Exceed Tools to access the following:

Local X Clients Lets you start local X clients related to Exceed and Exceed 3D if applicable. For more information, see “Exceed 3D” on page 12 and “Local X Clients” on page 13.



Exceed XDMCP Broadcast Lets you start the Exceed X server in XDMCP Broadcast mode. For more information, see “XDMCP Broadcast Startup Mode” on page 71.



Exceed XDMCP Query Lets you start the Exceed X server in XDMCP Query mode. For more information, see “XDMCP Query Startup Mode” on page 68.



HWM X window manager that provides a graphical interface to start and terminate clients, position and change the windows on your display, and perform other operations related to X window sessions. For more information, see “Appendix B: HWM and the Exceed Virtual Desktop” on page 309.



Kinput2 XIM Server Input server for X11R6 applications requiring Japanese text input, including Kana-Kanji conversion. For more information, see “Using Kinput2” on page 290.



Transport Monitor A diagnostic tool that lets you close network connections and view connections currently in use. For more information, see “Transport Monitor” on page 302.



Xconfig Lets you customize Exceed properties. Starting Xconfig from the Start menu opens the default .xcfg file. To modify the .xcfg file for the current session, start Xconfig from the Exceed menu or the Exceed toolbar. For more information, see “Chapter 4: Xconfig—Part I” on page 109 and “Chapter 5: Xconfig—Part 2” on page 157.



Xconfig Console Lets you modify Exceed X server properties through Microsoft Management Console. For more information, see “Remote Configuration” on page 119.



Xsession Lets you start the Exceed X server and multiple X clients/Windows programs simultaneously. You can also access Xsession from the Exceed menu or the Exceed toolbar. For more information, see “About Xsession” on page 93.



Xsession Console Lets you modify Xsession options, open and save Xsessions, and create Xstart nodes through Microsoft Management Console. For more information, see Exceed Help.



Xstart Use Xstart to create Xstart (.xs) startup files and create shortcut icons to start regular X clients, such as your UNIX, Linux and X applications. When you click on a shortcut icon, it automatically establishes a host connection, logs on, and then starts an X client or runs a host-based script. You can access Xstart from the Exceed menu or the Exceed toolbar. For more information, see “About Xstart” on page 40.



Xweb Wizard Lets you deploy and manage access to X applications by publishing Xstart profiles to a Web server. For more information, see “Xweb Wizard” on page 91.

Exceed Display Controller Console Provides an interface for setting parameters that control display numbers in the `Display Manager.ini` file. For more information, see “Exceed Display Controller Console” on page 102. Exceed Display Controller Console is available only for terminal servers/remote desktop servers that are running Windows Server 2003 Server 2008 (32 and 64 bit), and Server 2008 R2 (64 bit).

Security Tools

On the Start menu, navigate to the Open Text Exceed program group, and select Security Tools to access the following:



Open Text Kerberos An Open Text client implementation of the Kerberos security authentication protocol developed at MIT. For more information, see Open Text Kerberos Help.



Smart Card Manager Lets you manage lists of hosts and user passwords stored on smart card devices. Xstart uses this information to authenticate users with remote hosts. For more information, see “Securing Connections” on page 105.

Note: Exceed also offers Secure Shell encryption and authentication with Open Text Secure Shell. For more information, contact your sales representative.

Other Exceed Products

Exceed Freedom

Exceed Freedom is not included with Exceed. For more information, contact your sales representative.

Exceed Freedom converts your existing Exceed product into a server-based PC X server designed and optimized to run on internet and intranet network connections. It delivers X11R7.4 X access with minimal overhead, and allows users to remotely access business-critical X applications on UNIX, Linux, VMS, and other X Window System hosts.

Exceed 3D

Exceed 3D is not included with Exceed. For more information, contact your sales representative.

Exceed 3D lets you display OpenGL-based X applications. OpenGL is a 3D graphics software interface that lets you create interactive programs that produce still or animated 3D color objects, including shading, lighting, and other effects. Exceed 3D interprets OpenGL calls from an X application, and sends the information to the video card on your computer.

For demonstration purposes, the following sample programs are shipped with Exceed XDK and can be found in the Exceed Tools folder under Local X Clients.



Atlantis A local X client that demonstrates the movement of objects. It uses the `hclglut.lib` library.



GLXinfo A local X client that displays GLX visual configurations. It returns XGL information from the server.



Insect A local X client that shows a walking insect. It uses the `hclaux.lib` library and Color Index mode.



Vulcan Gunner A local X client that demonstrates lighting and animation. It uses the `hclglut.lib` library.



ZoomDino A local X client that uses OpenGL overlay and shows a zooming dinosaur (if the overlay is supported by your graphics adapter).

Local X Client Development Tools

Exceed XDK is not included with Exceed. For more information, contact your sales representative.

Exceed provides Exceed XDK (X Development Kit) for the development of local X clients.

Exceed XDK

Exceed XDK is a set of .dll files and libraries that you can use to develop GUI or console local X clients that run on your computer instead of a UNIX or Linux host. You can create a local client using Exceed XDK, or you can port the code of an existing UNIX or Linux X application and rebuild the project so that the application runs locally on a computer.

Exceed XDK lets you:

- create your own local X clients
- port programs originally developed for the X environment
- create OpenGL X applications for use with Exceed 3D

Microsoft Visual C/C++ 32-bit edition is required to use Exceed XDK. Developing clients requires an in-depth knowledge of programming for both Microsoft Windows and the X window system. For more information, see “Chapter 8: Introducing Exceed XDK” on page 241.

Local X Clients

The following X clients are available with Exceed and can be found in the Exceed Tools folder under Local X Clients:



Bitmap A local X client for creating and editing X bitmap files.



Circles A local X client that shows the alpha-channel capability of the Render extension. The source code location is as follows:

Home\XDK\Src\circles



Colors A local X client that displays a map of system colors.



Editres A local X client that lets users and application developers view the full widget hierarchy of any X Toolkit application that speaks the Editres protocol. Editres can also help you construct resource specifications, apply the resource to the application, and view the results dynamically. Once you are satisfied with the resource specification, Editres appends the resource string to your X Resources file.

Note: To use Editres with Motif applications, you need to make some changes to the source code. For more information, see “Developing Local Motif Clients” on page 268.



Ico A local X client that displays a bouncing icosahedron. Ico is useful for testing the speed of your system and display. The source code location is as follows:

Home\XDK\Src\Ico



MotifAnim A Motif client in which both its animation and the user interface are defined with the User Interface Language (UIL). MotifAnim also demonstrates the use of the UIL compiler.



Periodic A Motif client that demonstrates the use of most existing Motif widgets. It also demonstrates the UIL compiler. The source code location is as follows:

Home\XDK\Src\Periodic



Seltest A sample implementation of an X client that demonstrates the copying and pasting of graphics between Windows Clipboard and the X Selection.



Xdpyinfo A local X client that prints Exceed X server information to the Local X Console.



Xev The X Event Tester that, when running, writes information to the Local X Console about X events such as key presses, mouse movements, and button clicks.



Xlogo. A local X client that displays the X Window System logo. The source code location is as follows:

Home\XDK\Src\Xlogo



Xmaze A local X client that draws a random maze and finds the solution. Xmaze is useful for testing the speed of your system and display.

For information on local X clients for Exceed 3D, see “Exceed 3D” on page 12.

User Files

Depending on how your Open Text products are set up, user files can be categorized as either per-user or shared user. There can also be global user files.

Per-User

Per-user files are application or service files that, when changed, affect only the user who is making the change (that is, the currently logged in user).

An example of a per-user file is `HostEx.ini`. If you configure `HostEx.ini` with HostExplorer to Not Prompt On Window Close for a particular user, then other users of the machine are not affected.

Another example of a per-user file is `Exceed.xcfg`. If you configure `Exceed.xcfg` with Xconfig to use a certain display, then other users of the machine are not affected.

Note: Each user of the product on the machine receives a personal user directory.

The following is the default location for per-user files. By default, this location is hidden:

Windows 7/Server 2008/2008 R2/Vista—

C:\Users*Username*\AppData\Roaming\Hummingbird\Connectivity\version

Windows XP/Server 2003—C:\Documents and Settings\

UserName\Application Data\Hummingbird\Connectivity\version

where *Username* is the name of the user and *version* is the version number of your product.

Shared User

Shared user files are stored in the same location, so that any changes to the files affect all shared users.

The following is the default location for shared user files:

Windows 7/Server 2008/2008 R2/Vista—

C:\ProgramData\Hummingbird\Connectivity\version

Windows XP/Server 2003—C:\Documents and Settings\

All Users\Application Data\Hummingbird\Connectivity\version

where *version* is the version number of your product.

Global User

The global user folder is available to all users of the machine. Generally, the global user folder is intended as writable by administrators and readable by all users. In certain cases, folder permissions may be changed to allow everyone write access.

Files such as user profiles and mandatory settings are accessible from the global folder on the local machine (regardless of the current user). They can also be made accessible from a central location (for example, a network share) to multiple users when they install the product. During installation (on supported Microsoft Windows platforms), these files are copied locally to a shared folder under the All Users folder.

The following is the default location for global user files:

Windows 7/Server 2008/2008 R2/Vista—

C:\ProgramData\Hummingbird\Connectivity\
version\Global

Windows XP/Server 2003—C:\Documents and Settings\

All Users\Application Data\Hummingbird\Connectivity\version\Global

where *version* is the version number of your product.

Chapter 2

Connecting to Hosts and Running X Clients

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Connecting

To connect to remote clients, you must specify the following:

- a startup method (usually through TCP/IP)
- a valid account on a UNIX host (with user ID and password)

If you are connecting for the first time, consider the following information on connecting to hosts:

- “Starting X Clients Using a Remote Process” on page 21
- “Creating Startup Files” on page 44 and “Running an Xstart File” on page 48
- “Creating Shortcuts” on page 47
- “XDMCP Broadcast Startup Mode” on page 71

After connecting to a host, ensure that you know the syntax to:

- Set display environment variables on different host systems. For more information, see “Setting the DISPLAY Environment Variable” on page 89.
- Start a specific window manager (if applicable). For more information, see “About Window Managers” on page 25.

Note: You can start clients in background mode in UNIX by typing an ampersand (&) at the end of the command.



Starting X Clients Using a Remote Process

You can connect to clients using a remote process when Exceed starts (for example, an XDM script). Ideally, use an Xterm or some other terminal emulator, such as TELNET, which gives you a command prompt on the host to let you start other clients.

Note: Unless you are using a local window manager (that is, either HWM, MWM, or Native window manager), the first X client you start must be a remote X window manager.

For more information, see "Setting the DISPLAY Environment Variable" on page 89.

Before starting, do the following:

- Set the startup mode for Xconfig to passive. For more information, see "Running an Xstart File" on page 48.
- Start Exceed.
- If you are using HWM or MWM, start the window manager.
- Determine whether the DISPLAY variable is already defined on the host. If not, enter it on the command line. Otherwise, your X client will not run.

Regardless of whether the DISPLAY environment variable is defined, you can start X clients using the appropriate command line syntax for your transport. Enter the command at the terminal emulator prompt.

Desktop Sharing

Exceed Desktop Sharing is a collaborative tool for group projects and presentations. Session owners can share their current X desktop to a large number of remote users. The owner of the session can start the desktop sharing service, create an access password, and share it with participants.

Note: Desktop sharing is supported for Windows 2003 and XP, but does not apply to Windows Vista and later. Users can share desktops in Windows Vista using Exceed Freedom in single window mode.

As the owner of a session, you can specify the level of user interaction by granting participants a degree of control of the shared session. The two levels of participation are as follows:

- View Only—Remote users can view the presentation, but cannot access or affect any X applications on the owner's X desktop.
- Collaboration—Remote users can take limited and temporary control of the owner's X desktop. The owner can withdraw such control at any time, even without the acknowledgement of the remote users.

To share an X desktop:

To use desktop sharing in a firewall environment, ensure ports 522 (TCP) and 1503 (TCP) are open.

- 1 On the Exceed menu, select Tools, select Desktop Sharing, and then click Start.
- 2 In the Exceed Desktop Sharing dialog box, specify the sharing mode and password, and then click OK.



This information is displayed on the desktop of remote users.

- 3 The User Information dialog box opens on the owner's desktop the first time desktop sharing is used. In this dialog box, specify your name and e-mail address, and then click OK.
- 4 The Incoming Call dialog box opens on the owner's desktop when a remote user wants to connect to the X desktop. In this dialog box, specify whether you want to accept or deny access to the remote user. As the desktop owner, you can also select a setting that automatically accepts future incoming calls.

To enable/disable the current desktop sharing:

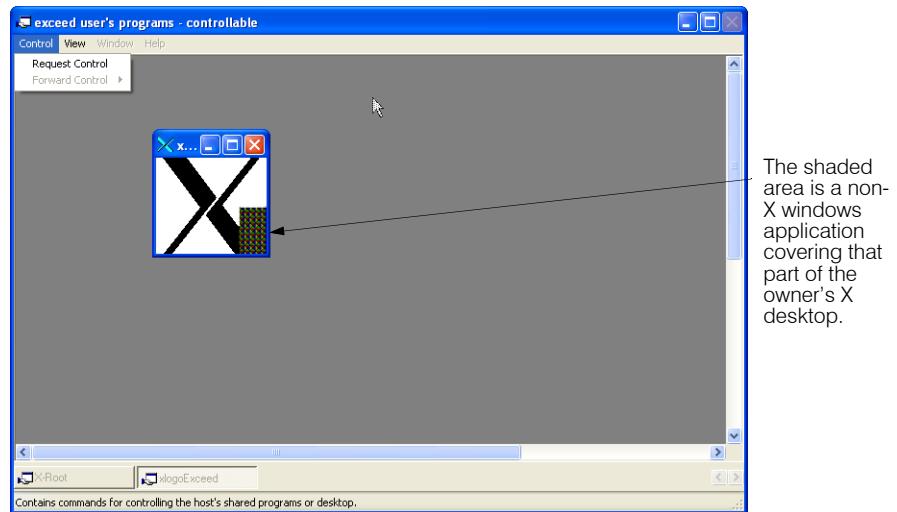
On the Exceed menu, point to Tools, and point to Desktop Sharing. On the Desktop Sharing menu, you can click Pause, Resume, and End for the current shared session.

Connecting to a Shared X Desktop

When a remote user connects to a shared X desktop, the remote X desktop displays in a window. If the X desktop is shared in collaboration mode by the owner of the session, the Control menu is enabled, which allows for user participation. For example, users can make a request for control of any X window application (using keyboard or button input).

The connection is terminated when either:

- the remote user disconnects the desktop sharing
- the X desktop owner ends the desktop sharing or quits the session



To connect to a shared X desktop:

- To use desktop sharing in a firewall environment, ensure ports 522 (TCP) and 1503 (TCP) are open.
- 1 On the Exceed menu for the remote user, point to Tools, point to Desktop Sharing, and then click Connect. A remote user can end the desktop sharing session at any time by clicking Disconnect on this menu.
 - 2 In the Connect To Remote Exceed Desktop dialog box, do the following:
 - a) Specify a host name or an IP address.
 - b) Type the password provided by the X desktop owner.
 - c) Click OK. The X desktop displays in a window.

To request control of any X windows applications:

In the X desktop window, click Request Control on the Control menu.

About Window Managers

A window manager interprets requests or commands entered on the computer and sends them to the Exceed X server. The X server sends the request to the X application, and the application sends instructions to the Exceed X server to display.

Multiple window mode creates a new window for each X client.

You can select the window manager you want to use in either single or multiple window mode. Only one window manager can run on a particular X display at a time.

Although window managers are Exceed clients, they may not display their own windows at startup. However, most X window managers have configurable menu systems.

Note: If you run an X window session without a window manager, you cannot perform window operations, such as resizing, moving, and iconizing. Overlapping windows can make hidden parts of underlying windows inaccessible.

Setting the Window Manager for Exceed

Exceed can use local and remote window managers. Local window managers run on the local machine, while remote window managers run on a remote host. Running Exceed with a remote X window manager generally increases network traffic and may decrease overall system performance.

To set the window manager:

- 1 In Xconfig, click Display And Video in Category View.
- 2 On the Screen page, select one of the following options in the Window Manager area:
 - Native—Uses the native Microsoft window manager for the window manager.
 - X—Any X window manager, local or remote, is used for the window manager. You must start the window manager, as it does not start by default.
 - Default To Native—The native window manager is used by default. However, if a local or remote X window manager is running, it replaces the native window manager. After the X window manager is terminated, the native window manager is used.

Starting Local Window Managers

For more information, see “[HWM Configuration File](#)” on page 314.

With Exceed, instead of using a remote window manager application, you can use a local window manager, such as the native Microsoft window manager, HWM, or MWM. To use a local window manager, you need to specify it in Xconfig. For HWM and MWM, you also need to start the window manager.

To specify the local window manager:

- 1 In Xconfig, click Display And Video in Category View.
- 2 On the Screen page, select one of the following options in the Window Manager area, depending on the local window manager you want to use:

Window Manager	Option	Notes
Native	Native	The native Microsoft window manager cannot be used in single window mode.
HWM	X	Hummingbird (Motif-like) Window Manager can be used in single or multiple window mode.
	Default To Native	
MWM	X	The Motif window manager (Exceed XDK only) can be used in single or multiple window mode. A remote MWM window manager may also reside on your host.
	Default To Native	

Note: For more information on Native, X, and Default To Native options, see “Setting the Window Manager for Exceed” on page 25.

To start HWM:

On the Start menu, navigate to the Open Text Exceed product group, select Exceed Tools, and click HWM.

If you are running Exceed in either single or multiple window mode, you can double-click the HWM icon.

To start MWM:

On the Start menu, navigate to the Open Text Exceed XDK product group and click MWM.

If you are running Exceed in either single or multiple window mode, you can double-click the MWM icon.

Starting Remote X Window Managers

If a remote window manager resides on one of your hosts, you can use it in single window mode or in multiple window mode. To use a remote X window manager, you need to specify it in Xconfig and then start the window manager.

You can start X window managers in the same way that you start any X client in passive startup mode. If you are running in XDMCP startup mode, the remote window manager is likely specified in the hosts startup file.

To specify the remote window manager:

- 1 In Xconfig, click Display And Video in Category View.
- 2 On the Screen page, select the X or Default To Native option in the Window Manager area.

For more information on these options, see "Setting the Window Manager for Exceed" on page 25.

To start a remote X window manager:

- 1 Connect to the remote host using any startup method, such as Xstart, Xsession, or TELNET.
- 2 Provide a user ID, password, and any other login information required.
- 3 Type and execute the command to start the window manager.

You can use one of the following window manager startup commands:

Window Manager	Startup Command Syntax [†]
Motif (UNIX)	[path/] mwm&
DEC (UNIX)	[path/] dxwm&
OpenLook	[path/] olwm&
AIX	[path/] aixwm&
DEC (VMS)	[path/] SPAWN/NOWAIT/INPUT=NL RUN SYS\$SYSTEM:DECW\$WINMGR
Motif (VMS)	[path/] SPAWN/NOWAIT/INPUT=NL RUN SYS\$SYSTEM:DECW\$MWM
KDE (Linux)	[path/] startkde&
GNOME (Linux)	[path/] gnome-session&

Note: For GNOME sessions using Esound, you need to grant access to port 16001 in the Windows Firewall Settings. For Windows Vista and later, you have to disable Esound on the host or install an Esound server from a third party provider. For detailed information on this issue, refer to the Release Notes.

[†] You must specify the DISPLAY environment variable or command line parameter so that the remote window manager knows which display it should use to connect.

Displaying X Clients

To configure the PC screen to reflect the window mode, see "Configuring X Screens" on page 173.

X clients are displayed depending on the window mode, which is based on your preferences. By default, the Exceed X server operates in multiple window mode and the window manager is configured to default to native.

To specify the window mode:

- 1 In Xconfig, click Display And Video in Category View.
- 2 On the Screen page, select a window mode:
 - Single Window Mode—Presents all clients in a single Exceed window. You can use any X window manager (local or remote) as your window manager.

Note: If you minimize the Exceed X server to an icon in single window mode, active client windows are no longer visible.

For more information, see "Window Mode Options" on page 172.

- Multiple Window Mode—Each client you start creates a new window on your display. You can use either the native (Microsoft Windows) or any X window manager (local or remote) as your window manager.

Location of Menu Commands

Multiple Window Mode. To access the Exceed menu, right-click Exceed on the taskbar with Exceed running. If the Exceed menu is hidden, right-click the taskbar icon in the system tray.

The location of Edit menu commands vary depending on whether you are running the native window manager or an X window manager in multiple window mode:

Native Window Manager—The Copy Rectangle and Copy All commands (To File, Printer, or Clipboard) appear on the Control menu (click the Control menu at the top left of the X client window) on the Edit submenu.

X Window Manager—The Copy Rectangle and Copy All commands (To File, Printer, or Clipboard) appear on the Control menu of Exceed and on the Exceed toolbar.

Single Window Mode To access menus, right-click Exceed in the taskbar. Alternatively, right-click the title bar of the Exceed window. To move menus to a menu bar in the Exceed window, click Move Menu on the Tools menu. To return the menus to being right-click accessible, click Move Menu again.

Multiple X Display Support

Exceed supports multiple X displays. Users can run multiple simultaneous copies of the Exceed X server (limited by available memory and resources) as long as each copy has a unique display number. This feature is useful for users who want to establish multiple XDM (X Display Manager) sessions with different hosts.

Note: The easiest way to start up multiple simultaneous copies of the Exceed X server is to use Xsession. For more information, see “About Xsession” on page 93.

Command Line Parameters

The Exceed X server (`Exceed.exe`) supports several command line parameters that specify the display number, file name, and host. If you want a particular command line parameter to default to its current Xconfig value in the `Exceed.xcfg` configuration file, then do not specify the parameter on the command line.

For example, to start the Exceed X server in single window mode on display 1 with an XDMCP Query startup mode to an xdmhost host, specify the following:

```
exceed.exe -d 1 -m query -h xdmhost -w single
```

To specify the display number and configuration file name:

Use the following syntax:

```
-d display#  
-f filename.xcfg
```

where `display#` represents a display number from 0 – 9999 inclusive and `filename.xcfg` is the configuration file name.

To specify the host name (optional):

Use the following syntax:

```
-m [passive|query|indirect|broadcast]  
-h hostname  
-w [multiple|single]
```

where *hostname* represents the connection host for the XDMCP Query or XDMCP Indirect startup modes.

X Display Support Limitations

There are some limitations on multiple X display support. For example:

- Since X displays may share the same configuration file, do not make changes to your configuration while the Exceed X server is running.
- Since only one X display can own the desktop/root window and the configuration file is shared, do not enable multiple window mode settings if you are using the multiple X display feature.

In particular, do not enable the Root Mouse Action To X in the Multiple Window Mode Advanced dialog box. To access this dialog box, click Display And Video in Category View in Xconfig, select Multiple in the Window Mode area of the Screen page, and click Advanced. Also, ensure that the Root Drawing option is set to None. You can still use the Root Mouse Actions To X toolbar button, but make sure that the setting is selected for only one X display at a time.
- Colormaps are not shared between X displays which may result in color flashing in 256 color video mode when you change the focus between windows that are on different X displays.
- Multiple copies of the Exceed X server cannot share a single log file, so each copy of the Exceed X server has a log file name that is based on the log file name in the configuration file and the display number of the server.

For example, if the log file name in your configuration file is exceed.log, then each copy of the Exceed X server will use exceed $display\#$.log as the log file name, where $display\#$ is the display number of the Exceed X server.

To disable support for multiple X displays:

Do the following:

- Create an `xserver` key under the following key in the registry:
`HKEY_LOCAL_MACHINE\SOFTWARE\Hummingbird\Connectivity\version\Exceed\`
- Create a (DWORD) value named `DisableMultipleXDisplays` and set the value to 1.

Entering Data Using the Mouse and Keyboard

You can use a two- or three-button Windows-compatible mouse with Exceed. To help you input data using your X Window terminal, Exceed also supports international keyboards.

You can perform any of the following changes, which are transparent to the X protocol:

- Type an X Window-supported character or string of characters using user-defined keystrokes by modifying the basic keyboard layout. For more information, see “Modifying a Keyboard File” on page 127.
- Simplify accented key entry by defining compose-key sequences. For more information, see “Creating Compose-Key Sequences” on page 133.
- Customize keyboard and mouse options and preferences. For more information, see “Modifying a Keyboard File” on page 127 and “Customizing Mouse Settings” on page 139.
- Customize or create new keyboard layouts with XKeys, a graphical keyboard utility. For more information, see “About XKeys” on page 125.

Copying and Pasting in Exceed

To print data, you must set up your printer using Print Setup on the Exceed Edit menu. For more information, see "Setting Print Settings" on page 39.

Exceed provides functionality that lets you copy and paste between Windows and X applications. You can copy, paste, and print selected rectangles of information, entire windows, and X selections. For example, you may want to copy and paste data, such as long path specifications, command lines, or sections of script files.

The copying and pasting procedure varies depending on the source and destination of the data, such as:

- between Windows-based applications (for example, Microsoft Word, Notepad, Paintbrush, Telnet, HostExplorer Basic, Xstart)
- between Windows-based applications and X clients displayed on your PC (that is, displaying to your Exceed X server)
- between X clients displayed on your PC

In the X environment, the X selection is a buffer with a specific name that stores the data you select within an X client window. It is the mechanism that you use to copy data from X to Windows or vice versa. If data is not being copied to or pasted from X selections, make sure that the correct X selection type is defined.

For more information, see "Copying and Pasting Between X Clients" on page 39.

The X client determines the X selection that is used. In most cases, the PRIMARY X selection is used, but other selections are available, such as SECONDARY, CLIPBOARD, and CUT_BUFFER0 to CUT_BUFFER7. Some X clients can use more than one X selection.

To define the X selection:

- 1 In Xconfig, click Copy And Paste, And X Selection in Category View.
- 2 On the X Selection page, select the X selection associated with edit operations.
- 3 You can also automate copying and pasting using the Auto Copy X Selection and Auto Paste To X Selection options. For more information, see "Specifying X Selection Type" on page 181.

Edit Menu Commands

For information on automatic copying and pasting, see “Automatic Copy and Paste” on page 181.

The copy and paste commands are available on the Exceed menu by selecting Edit. Most commands are similar to those in other Windows applications, and some commands use an X selection.

The Edit menu includes the following commands:

Copy Rectangle ->To Clipboard | To Printer | To File—Copies a selected rectangle of the active X client window (multiple window mode) or the Exceed X server root window (single window mode) to a destination (such as Clipboard, printer, or file). After clicking **Copy Rectangle**, the cursor changes to a crosshair. To define an area to copy, click anywhere within the window and drag the mouse to define a rectangle. Releasing the mouse button copies the selected rectangle to the specified destination.

Copy All ->To Clipboard | To Printer | To File—Copies all visible portions of the active X client window (multiple window mode) or the server root window (single window mode) to the specified destination (such as Clipboard, printer, or file).

Copy X Selection ->To Clipboard | To Printer | To File—Copies the X selection to the specified destination (such as Clipboard, printer, or file).

Paste To X Selection -> From Clipboard | From File—Pastes the contents of Clipboard or a file to the X selection. Any X client requesting the selection can paste the associated data as long as it supports the data type reported in the selection.

Note: You can paste data from the Windows Clipboard to another Windows application as long as the destination application supports the data or format type.

Copying and Pasting Data

If you are having difficulty cutting and pasting data, check that Windows Clipboard contents appear in Clipboard Viewer.

You can copy data to Windows Clipboard, a file, or to the printer. If you copy and paste using Clipboard, you can use `csv` and `biff` formats.

To copy data:

Copy data to Windows Clipboard using an appropriate Windows application, such as Paint.

To paste text:

- 1 On the Exceed menu, select Edit, select Paste To X Selection, and then click From Clipboard.
- 2 Click the right mouse button in the X client window. It may be necessary to click the right and left mouse buttons simultaneously in the X client window.

To paste data:

On the Exceed menu, select Edit and do any of the following:

- To paste data from Clipboard, click From Clipboard.
- To paste data from a file, click From File.

To clear the X selection buffer:

On the Exceed menu, select Edit and click Clear X Selection.

Copying and Pasting Graphics

Exceed lets you copy images from X to the Windows Clipboard. You can copy an entire window or a partial window by dragging a rectangle over the window.

You can also paste images from the clipboard into an X client. The method of pasting an image to X is based on ICCCM (Inter-Client Communication Conventions Manual). Many X clients support the copying and pasting of graphics to other X clients, but only through ICCCM X selections.

For a technical description of copying and pasting images, refer to `seltest.doc`, located in the Exceed installation directory. For an example of copying and pasting images, refer to `seltest.c`. These files are in the following location:

`C:\Program Files\Hummingbird\Connectivity\version\Exceed\Info`

To build Seltest, you must upload it to a host where an Xlib development environment is available.

To compile Seltest on a UNIX host:

Use the following syntax:

```
cc -o seltest seltest.c -lX11
```

where the library file libX11.a is on your path.

To paste images from Clipboard to Seltest:

- 1 Copy an image to the Windows Clipboard using an appropriate Windows application, such as Paintbrush.
- 2 Run Exceed.
- 3 In Xconfig, click Copy And Paste, And X Selection in Category View. Check that the X selection setting is set to PRIMARY.
- 4 Run Seltest from an Xterm or TELNET window. This ensures that information is output to the standard output stream. Seltest initially displays an empty window.
- 5 Do one of the following:
 - Single window mode—On the Exceed menu, select Edit, select Paste To X Selection, and then click From Clipboard.
 - Multiple window mode—On the Exceed menu, select Edit, select Paste To X Selection.
- 6 Click the right mouse button in the Seltest window.

Seltest requests the current PRIMARY selection information and displays the selection target types that are available in the Xterm or TELNET window. If an image is available, it is displayed in the Seltest window. The amount of time it takes to display the image in the Seltest window varies depending on network load, image size, and color resolution. In most cases, it should not take longer than 30 seconds.

To copy images from Seltest to Clipboard:

- 1 Follow the previous procedure for pasting a clipboard image to the Seltest client.
- 2 Clear the contents of Clipboard by clicking Delete on the Edit menu of Windows Clipboard.
- 3 On the Exceed menu, select Edit and click Clear X Selection. If you are in multiple window mode, this causes the server to give up ownership of the PRIMARY selection.
- 4 Click the left mouse button in the Seltest window. Seltest requests ownership of the PRIMARY selection and associates the image it is displaying in its window with the PRIMARY selection.
- 5 Do one of the following:
 - Single window mode—On the Exceed menu, select Edit, select Copy X Selection and click To Clipboard.
 - Multiple window mode—On the Exceed menu, select Edit and click Copy X Selection. This causes the server to ask the PRIMARY selection owner (Seltest) for the PRIMARY selection image data. The server copies the image to the clipboard.
- 6 Display the Windows Clipboard Viewer to verify the image was transferred from the Seltest client to the clipboard.

Copying and Pasting Between X Selection and File

You can copy the current X selection to a destination file. You can also paste the current X selection from a source file. By default, the X selection is copied/pasted from a file located in the Exceed *User* directory.

To copy the X selection to a destination file:

On the Exceed menu, select Edit, and click Copy X Selection To File. In the dialog box that opens, select the destination file and click Save.

To paste the X selection from a source file:

On the Exceed menu, select Edit, and click Paste File To X Selection. In the dialog box that opens, select the source file and click Open.

Copying and Pasting Between X Clients

If your computer is properly configured, copying and pasting between different locales is supported. You can specify the locales in the Regional Settings in Control Panel.

If two X clients running on your computer support the same X selection, you can copy and paste between these X clients.

To copy and paste between X clients:

- 1 Place the data that you want to copy in the X selection buffer.
- 2 On the Exceed menu, select Edit, select Copy X Selection, and then click To Clipboard. This places a copy of the X selection in Clipboard.

Note: You can define the X selection type used by the destination client. For more information, see "Copying and Pasting in Exceed" on page 34.

- 3 On the Exceed menu, select Edit, select Paste To X Selection, and then click From Clipboard.
- 4 Use the X client-specific method to paste the X selection data.

Setting Print Settings

You can specify print settings for printing the current selection.

To set print specifications:

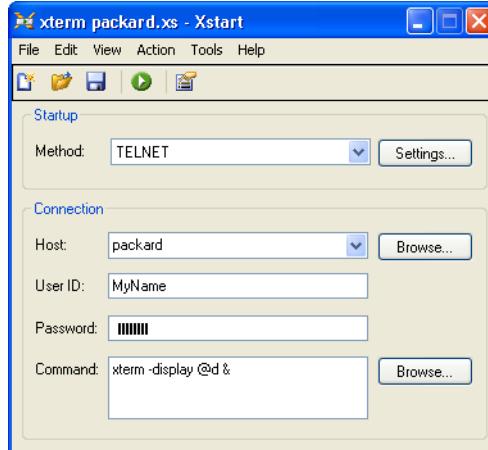
To specify the printer you want to use, click Print Setup on the Exceed menu, which opens a print dialog box.

On the Exceed menu, select Edit, select a copy command, and then click To Printer. The Copy To Printer dialog box lets you specify sizing and scaling options for printing the current selection. To have Exceed automatically size the selection, select the Best Fit or Stretch To Page option.

Accessing Hosts and Starting Applications

About Xstart

Xstart automates the process of accessing hosts and starting applications. Use Xstart to create Xstart (.xs) startup files and create shortcuts to UNIX, Linux, and X applications. Clicking one of these shortcuts automatically establishes a host connection, logs on, and then starts an X application. An X application can be a character-based host application in a terminal emulator window.



X Client Setup

In Xstart, the specified startup method, host, user ID, password, and command are stored in the .xs file. The X client is started using this information, along with various other Xstart settings.

Xstart with Profile Spaces

If your installation of Exceed includes the Profile Space feature, and your Exceed administrator has enabled it, then you can use any Profile Space to save and run Xstart startup files.

Note:

- Using the GlobalExceed.ini file, which is located in the Global User directory, Administrators can enable or disable Profiles Spaces for all users, or allow users to enable it if required.
- Xstart startup files (.xs) referenced by an Xsession file (.ses) must reside in the same Profile Space as the Xsession file.

To open Xstart:

Windows 7 users can pin specific Xstart files to the Xstart jump list. For more information, see "Windows 7 Support" on page 3.

On the Start menu, navigate to the Open Text Exceed program group, point to Exceed Tools, and then click Xstart.

Startup Files

By installing an Xstart shortcut to an .xs file, you can double-click it to start Exceed and run the startup X client. You can also create script files for Web-based applications that require a user name and password.

Note:

- If your installation of Exceed includes the Profile Space feature, and your Exceed administrator has enabled it, then you can use any Profile Space to save and run Xstart startup files.
- Xstart startup files (.xs) referenced by an Xsession file (.ses) must reside in the same Profile Space as the Xsession file.

When you save an Xstart file, it is saved according to the following:

- By default, startup files are saved in the Profile directory for the currently logged in user, but you can specify another location.

The default location for startup files:

Windows 7/Server 2008/2008 R2/Vista—

C:\Users\Username\AppData\Roaming\Hummingbird\Connectivity\version

Windows XP/Server 2003—C:\Documents and Settings\UserName\Application Data\Hummingbird\Connectivity\version

- If your installation of Exceed includes the Profile Space feature, and the Exceed administrator has enabled it, then you can use any available Profile Space. Xstart startup files (.xs) referenced by an Xsession file (.ses) must reside in the same Profile Space as the Xsession file.

Note: Administrators can use the GlobalExceed.ini file to enable or disable profiles spaces for all users, or allow users to enable it if required. GlobalExceed.ini is located in the Global User directory.

Startup Methods

In Xstart, select one of the following startup methods to establish the host connection:

Startup Method	Description
Secure Shell	Encrypts remote X windows communications. This option is available only if you have Open Text Secure Shell installed.
RExec	Requires a password to connect to the host. You can also use REXEC to run local X clients on other PCs on your network if they are running the Xstartd service.
RSH (Remote Shell)	Similar to REXEC except that no password is required. Before using RSH, your computer must be authorized for RSH access on your host.
RLogin (Remote Login)	Requires a password.

Startup Method	Description
TELNET	Requires a password. This startup method includes Kerberos V5 authentication and encryption for added security.
PCX\$SERVER (DECnet)	Requires a password.
hRPS (remote application starter)	Requires that a client be included with Extend to establish the connection. To use this method, the client must be installed and running on the host. No password is required. hRPS is the only startup method supported by all transports.
Local Application	Launches Windows applications (such as HostExplorer FTP, Exceed, MWM, or HWM) on the local host.
Server Host Application	Launches applications that are located on the Exceed Connection Server machine that is hosting the X session. Use the Command box to specify the application you want to launch, as well as any related options. This method is available only for Exceed Freedom sessions.

If you are on a VMS system, see “Using Xstart on VMS Systems” on page 64.

The following table summarizes the startup methods supported by each type of transport:

Startup Methods	TCP/IP	DECnet
RExec	X	
RSH	X	
RLogin	X	
PCX\$SERVER		X
hRPS	X	X
Secure Shell	X	
TELNET	X	
Local Application	X	

Xstart Events

When you run an Xstart file, the following occurs:

- 1 The Xstart Information dialog box opens when you clicking Run if one or more options in the Local Prompt area are set to Ask User on the Startup page of the Xstart Settings dialog box.

After account credentials have been verified, Exceed starts and retries the connection for the length of time specified in the Timeouts area on the Network page of the Xstart Settings dialog box.

- 2 After you have connected, the command specified in the Command box in Xstart is sent to the host specified in the Host box. If the command starts a client, the client session begins. The initial socket closes after the length of time specified in the Close box in the Timeouts area of the Network page.
- 3 If the Show Host Reply option is selected on the Network page, host or client messages are displayed in a window. You can copy text from this window to the clipboard.

To open the Xstart Settings dialog box:

In Xstart, click Settings in the Startup area.

Creating Startup Files

When you create a startup file, you need to select a startup method, define the host, user ID, and password, and specify a command to run on the host. You can also specify local or remote login prompts when Xstart runs.

Command Example

Use the following command to start the Xterm client on a UNIX host with either a DECnet or TCP/IP transport:

```
[path/]xterm -display mypcname:displaynumber &
```

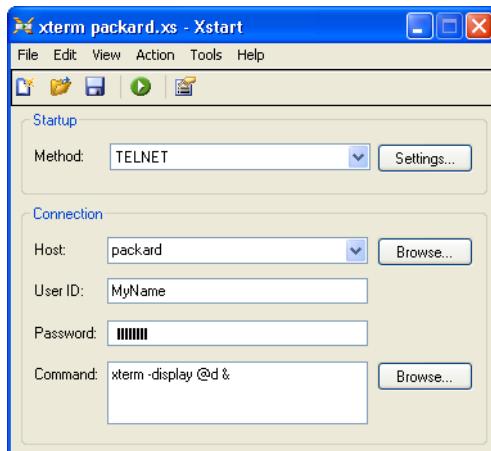
where:

- *path* is the location of Xterm on the host
- *mypcname* corresponds to your network node or address
- *displaynumber* is the display number you entered on the Communication page (accessible by clicking Network And Communication in Category View in Xconfig). The display number is usually zero (0).

To create a startup file and connect to the host:



- 1 Open Xstart. For more information, see “About Xstart” on page 40.
- 2 In the Startup area, select a method from the Method box. The method depends on the transport that you are using and the host to which you want to connect. For more information, see “Startup Methods” on page 42.



Options that do not apply to the selected startup method are dimmed.

- 3 In the Connection area, specify the information required to connect to the host, log in, and execute a command to start an application.
 - a) In the Host box, type the host to which you want to connect, or click Browse to select one from a list of hosts on the network and the X applications available.

Note: To configure a host table, or edit the default hostdb.txt, click Settings in the Startup area. In the Xstart Settings dialog box, click the Other tab, and then click the Configure button next to Hosts in the Browse Methods area.

For more information, see "Using Login Macros" on page 77 and "User ID and Password Macros" on page 77.

For more information, see "Using Login Macros" on page 77 and "Command Macros" on page 78.

- b) Type a valid user ID and password for the host to which you want to connect. If you have defined a user ID and password macro, you can use it to fill in your user ID or password.
 - c) In the Command box, type a command to run on the host. The command that you type depends upon the program type (X Window or Windows application), your host system, and how it is set up.

You can type the @d, @a, @:, and @# command macros as shortcuts in the Command box. The @d macro selects the proper IP address if the machine has more than one address.

You can specify parts of the command using the available command macros by clicking Browse to select an application from a database.

Note: To configure an application database table, or edit the default appdb.txt, click Settings in the Startup area. In the Xstart Settings dialog box, click the Other tab, and then click the Configure button next to Applications in the Browse Methods area.

- 4 In Xstart, click Save.

In Xstart, click Create Shortcut on the File menu to create a shortcut locally or on the network. To connect to the host, select Run on the Action menu (or click the Run button on the toolbar).

To specify local or remote login prompts when Xstart runs:

- 1 In Xstart, click Settings in the Startup area.
- 2 In the Xstart Settings dialog box, do the following:
 - a) To provide a description for the Xstart file, click the Other tab. On the Other page, specify the description (maximum 40 characters) in the Description box.
 - b) To create a command on the Exceed client startup menu, select the Show On Exceed Startup Menu option to display the description. The description also appears in Xsession if the Xstart file is added to the session.
 - c) In the Xstart Settings dialog box, click OK.
- 3 In Xstart, click Save.

Creating Shortcuts

Windows 7 users can pin specific Xstart files to the Xstart jump list. For more information, see “Windows 7 Support” on page 3.

You can create an Xstart or Xsession shortcut on the desktop, or in a local or network folder. You can double-click the Xstart or the Xsession shortcut to start Exceed and run the startup X client.

To create an Xstart or Xsession shortcut:

- 1 Do one of the following:
 - In Xstart, open the .xs file.
 - In Xsession, open the .ses file.
- 2 On the File menu, click Create Shortcut on the File menu.
- 3 In the Browse For Folder dialog box, select a location for the shortcut.

To change the default icon, right-click the shortcut and click Properties to open the Windows Properties dialog box. To modify the shortcut caption, right-click the shortcut and click Rename.

Running an Xstart File

When you use Xstart to start the X server, it is recommended that you set the startup mode to passive.

To set the startup mode to passive:

In Xconfig, click Network And Communications in Category View. On the Communication page, select Passive in the Mode box.

To run an Xstart file:

Do one of the following:

Windows 7 users can also run Xstart files from the Xstart jump list. For more information, see "Windows 7 Support" on page 3.

- In Xstart, click Run on the Action menu to start the X client using the startup information currently displayed in the Xstart window.
- In Xsession, click Run on the Action menu to start Xstart files listed in the Session Contents area.
- In Xsession Console, click Run on the Action menu to start the selected Xstart file in either the left or right pane.
- Use any Windows Run dialog box to run an Xstart file using the Xstart command line syntax.
- If the Profile Space feature is installed and enabled, you can run the startup file from Connection Central.
- Use shortcut commands to run Xstart files from the Exceed menu by selecting Tools, selecting Client Startup or Session Startup, and then clicking a shortcut command.
 - Double-click a shortcut located on the desktop, or in a local or network folder.
 - On the Exceed menu, select Tools, select Client Startup, and then click a shortcut command.
 - On the Exceed menu, select Tools, select Session Startup, and then click a shortcut command (assuming the Xsession includes the proper Xstart file).

Launching Windows Applications

You can launch Windows applications on hosts using Xstart.

Command Line Switches

The following are possible command line switches:

-xpert <X display number>	Runs an Exceed X server that has the Xprint extension enabled by default so that X applications can print using this extension.
-w <multiple single>	Specifies the window mode.
-m <passive query indirect broadcast>	Specifies connection method.
-h <hostname>	Specifies the remote host.
-n	Name for the window title bar. Note: Adding @h adds the host name to the title bar.
-d	Display setting.
-f <filename.xcfg>	Specifies an xconfig file (other than the default).

You can start Exceed using command line switches that effectively override Xconfig settings. For example, you could type in the following in the Command box located in Xstart:

```
"C:\Program Files\Hummingbird\Connectivity\version\Exceed\Exceed.exe" -xpert -w single -m query -h Host1 -n Host1 -d 2
```

In this example, you can run several different X servers (Exceed.exe) on various hosts using different configuration parameters.

To launch Windows applications:

- 1 In Xstart, select Local Application in the Method box.
- 2 In the Command box, specify the application and related options. For more information, see "Creating Startup Files" on page 44.

Typical Xstart Commands

You can type the following host commands in the Command box located in Xstart.

UNIX C Shell Users

If you have defined the necessary environment variables, in the C shell resource file (`.cshrc`), you can type the command to invoke an X client.

For example, type the following command to start Xterm:

```
xterm -ls &
```

UNIX Bourne Shell Users

For more information, see "Command Parameters" on page 67.

Since the Bourne shell startup file (`.profile`) is not called when Xstart logs onto the host, we recommend that you include the PATH and DISPLAY variables on the command line.

The syntax depends on the type of transport:

Transport	DISPLAY Parameter Syntax
DECnet	<code>-display mypcname::0 &</code>
TCP/IP	<code>-display mypcname:0 &</code>

where `mypcname` is the IP address of the Exceed X server, and `&` indicates that the application should start in the background.

For Sun Sparc hosts, since you cannot specify the OPENWINHOME and LD_LIBRARY_PATH variables on a single command line, consider creating a UNIX shell script on the host to perform these functions.

For example, the following script, called `start_xterm`, starts an xterm:

```
#!/bin/sh  
OPENWINHOME=/usr/openwin  
export OPENWINHOME  
LD_LIBRARY_PATH=path  
export LD_LIBRARY_PATH  
path /xterm -ls -display mypcname:0 &
```

where `usr` is the appropriate directory on the host, `path` is the directory where the Xterm is located, and `mypcname` is the network node specification of your computer.

Once you have created the `start_xterm` script, type the following in the Xstart file Command box:

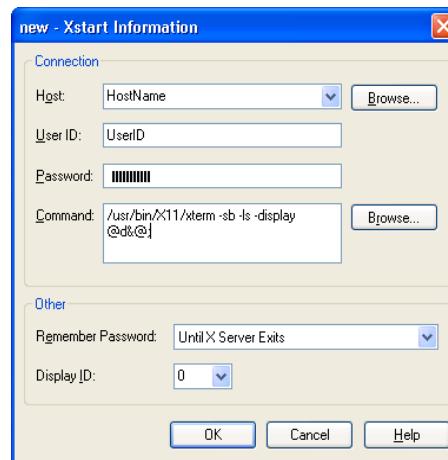
```
sh start_xterm &
```

Responding to an Xstart Timeout

When Xstart times out waiting for a prompt (an answer from the host), the Enter Reply For Prompt dialog box opens, requiring your input to proceed. To respond to the prompt, use the Reply box. You can reply again or send revised login information or commands.

Displaying Xstart Login Information

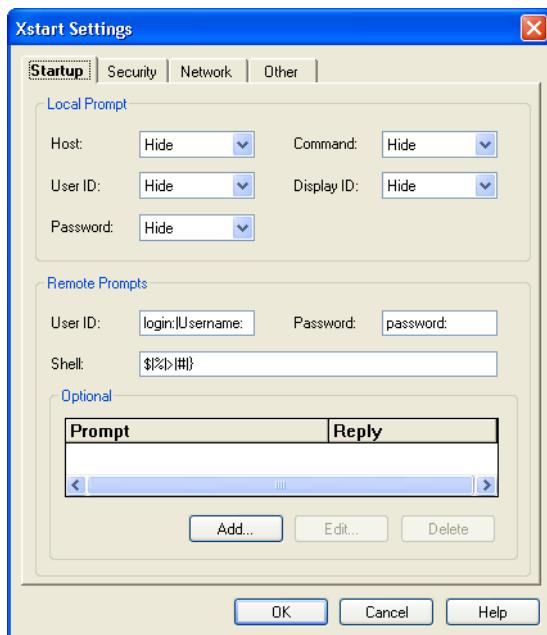
When you run an .xs file, the Xstart Information dialog box may open depending on the local prompt options selected on the Startup page of the Xstart Settings dialog box. When you click OK in the Xstart Information dialog box, Exceed attempts to connect.



To set local prompts:

- 1 In Xstart, click Settings in the Startup area.
- 2 In the Xstart Settings dialog box, specify the local prompts on the Startup page. Select one of the following prompt types for each item in the Local Prompts area:
 - Hide—if all local prompt options are set to Hide, the Xstart Information dialog box does not open when you run a file.
 - Show Only—for the corresponding local prompt, the Xstart Information dialog box displays the information.

- Ask User—For the corresponding local prompt, the Xstart Information dialog box prompts for the information before making the connection. You can specify Ask User for: the host you want to connect to, the user ID, the command sent to the host, the display ID number, and the password.



Displaying the Xstart Host Reply Window

You can display a host reply window when you run Xstart, which is useful for troubleshooting connections and displaying errors. You can copy information from the Host Reply window to the Windows Clipboard.

To set the display of the host reply window:

- In Xstart, click Settings in the Startup area.
- In the Xstart Settings dialog box, click the Network tab.
- On the Network page, select the Show Host Reply option to display a host reply window when you run Xstart.

To hide or close the host reply window:

You can hide the Host Reply window when the connection opens. It re-displays when the X client terminates. When the connection closes, click OK to close this window.

Click Close to terminate the remote execution command socket monitoring the host replies. Click Copy to copy text from the Host Reply window to Windows Clipboard.

Browsing for Hosts and Applications

For more information about advanced features, see "Advanced Xstart Features" on page 77.

To browse for hosts and applications in Xstart, you must specify which methods and options to use in the Browse Hosts and Browse Applications dialog boxes.

To set browsing options:

- 1 In Xstart, click Settings in the Startup area.
- 2 In the Xstart Settings dialog box, click the Other tab.
- 3 On the Other page, click the Configure button next to Hosts to open the Browse Hosts dialog box, or the Configure button next to Applications to open the Browse Applications dialog box. For more information, see:
 - Browse Hosts/Applications dialog box: Method page
 - Browse Hosts dialog box: Options page
 - Browse Applications dialog box: Options page

Browse Hosts/Applications dialog box: Method page

This page lets you specify the file retrieval method for the Browse Hosts and Browse Applications dialog boxes.

Method—Specifies the file retrieval method.

For more information about hostsdb.txt, see “Host Address File” on page 58. For more information about appdb.txt, see “Application Database File” on page 60.

- **File**—Uses the hostdb.txt file as a source for the host browse and appdb.txt as a source for the application browse. You can create and maintain these files. The hostdb.txt file lists IP addresses and their associated hosts.

For example:

```
xxx.xxx.xxx.xxx    sparc  
xxx.xxx.xx.xx    hp  
xxx.xxx.x.xxx    jack    jackster    spratt
```

The appdb.txt file lists hosts or aliases, and application locations or names, similar to the following syntax:

```
#HP HPUX HOST      (a comment)  
HP/XTERM:          /usr/bin/X11/xterm  
HP/Text Editor:    /usr/vue/bin/vuepad  
HP/CDE Calculator: /usr/dt/bin/dtcalc
```

Note: The stdappdb.txt file, which contains applications and their typical locations on various servers, is located in the Exceed *User* directory. For more information, see the Installation Guide.

An application may be listed here, and consequently appears when you browse for applications, but there is no automatic confirmation that the application itself is in the specified directory.

NIS, NIS+, and LDAP file retrieval methods are available only after configuring them in Directory Services Explorer.

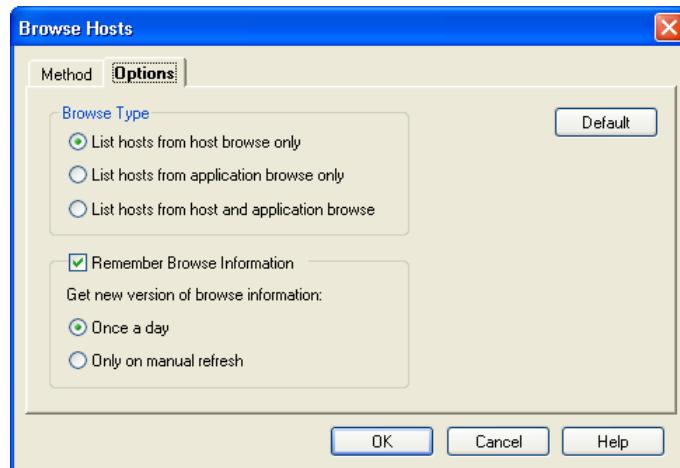
- FTP—Uses files on an FTP server as the source for the host and the application browse. You can only access these files, not edit them. Source files are similar to those described for the File method. To properly configure the Browse Hosts or Browse Applications tabs using FTP, you must provide a server name, user name, password, account (if applicable), and path. In the File box, enter the name and location of the source file on the FTP server.
- NIS—Uses NIS (Network Information Service) maps hosts.byaddr as a source for the host browse and appdb as a source for the application browse. The system administrator on the UNIX side must create these maps.
- NIS+—Uses NIS+ maps hosts (as a source for the host browse) and appdb (as a source for the application browse). The system administrator on the UNIX side must create these maps.
- LDAP—Uses LDAP (the Lightweight Directory Access Protocol). Like NIS+, LDAP secures its objects by requiring client authentication.

Edit—Opens an editing tool, where you can modify the selected file.

Browse—Opens a browse dialog box, where you can select a different file.

Browse Hosts dialog box: Options page

The Options page let you specify the options for the Browse Hosts dialog box.



This page contains the following options:

Browse Type—Specifies which host types are shown in a host browse. You can show hosts from a host browse, an application browse, or both. The default is to show only hosts from a host browse.

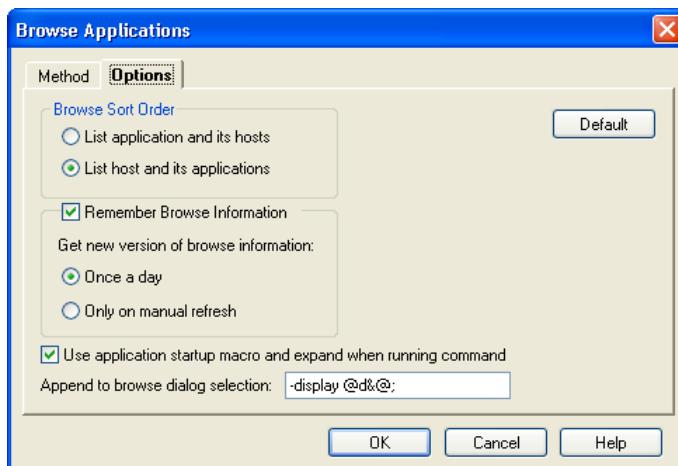
To refresh the Host browse, click Refresh in the Browse For Hosts dialog box, which opens when you click Browse next to the Host box in Xstart.

Remember Browse Information—Controls whether Exceed remembers (caches) browse information. If the check box is cleared, information is not cached and each browse retrieves the applications file. If the check box is selected, information is cached and you can use the cached or locally saved list of applications and only refresh the browse from the source Once A Day (the default) or Only On Manual Refresh. Even if you select Once A Day, you can still use Refresh to update the information.

Click Default to restore original settings.

Browse Applications dialog box: Options page

The Options page let you specify the options for the Browse Applications dialog box.



This page contains the following options:

Browse Sort Order—These options affect how applications (regardless of source) are listed. You can sort the list by application and its hosts (the default), or by host and its applications.

Remember Browse Information—Controls whether Exceed remembers (caches) browse information. If the check box is cleared, information is not cached and each browse retrieves the applications file. If the check box is selected, information is cached and you can use the cached or locally saved list of applications and only refresh the browse from the source Once A Day (the default) or Only On Manual Refresh. Even if you select Once A Day, you can still use Refresh to update the information.

Note: To force a refresh (regardless of the settings), hold down the Shift key before launching Xstart or an Xstart startup file.

Use Application Startup Macro And Expand When Running Command—

Determines whether the selected browse item is inserted in the Xstart Command box as an application macro, or as the full path and application name. If inserted as a macro, it expands when the startup session runs.

Append To Browse Dialog Selection—Appends a string (variables, macros, flags, and so on) to the end of the item selected in the Browse dialog box (click Browse on the Methods page).

Default—Restores original settings.

Xstart Host and Application Files

Host Address File

The hostdb.txt file lists IP addresses and corresponding host names that affect which hosts Xstart browses.

For example:

123.45.67.89 boethius

Host List File

The `rupdb.txt` file lists hosts that are running an `rpcd` daemon that supports the `rstatd` service. This service is capable of running the `rup` command, which returns status information about the host, including the service load. The `rup` command is a Remote Procedure Call (RPC) and the `rpcd` daemon handles all incoming RPCs.

Xstart consults `rupdb.txt` when running Load Optimization by sending a `rup` RPC to each host in `rupdb.txt` to find the least busy one. You can use section names in `rupdb.txt` to associate applications with host names.

The following syntax rules apply:

- Lines beginning with # are comments and are ignored by the system.
- Section names are enclosed in square brackets [].
- If you do not provide a name in the Section Name(s) box on the Options page of the Browse Load Optimization dialog box, then the system inserts the name [Default Section] in the `rupdb.txt` file. For more information, see “Load Optimization” on page 61.
- You can use any combination of alphabetic characters, spaces, capitalization, and numbers in section names. If you want to list more than one application in a section name, separate them with commas.
- When you add the hosts, type only one host on each line. Host names may be in short or full form, for example, `irix` or `irix.domain.com`.

For example:

```
[xclock]
onefish
twofish

[xterm]
redfish
bluefish
```

In this example, the hosts `onefish` and `twofish` support the `xclock` application; the hosts `redfish` and `bluefish` support the `Xterm` application. When you specify an application in the section, Xstart queries only those hosts following each section. This prevents Xstart from contacting a host that does not run the desired application.

Note: The `appdb.txt` file lists hosts that must be running `rstatd`. Therefore, the list of hosts in `appdb.txt` is a subset of the hosts listed in `rupdb.txt`, which is itself a subset of the hosts in `hostdb.txt`.

Application Database File

The `appdb.txt` file lists host names, application nicknames, and full path names for applications on remote hosts. Xstart uses `appdb.txt` to determine which hosts run a particular application.

For example:

```
solaris/mailtool: /usr/bin/mailtool
```

where `solaris` is the host, `mailtool` is the application, and `/usr/bin/mailtool` is the application path.

Listing NIS Maps on the System

The Browse NIS Maps dialog box in Xstart lists the configured NIS maps available to your system. These can be standard maps, such as `hosts.byaddr` which lists available hosts by their IP addresses, or custom maps set up by your system administrator, such as `appdb`, which references all the applications available to your system.

For the NIS maps available for host or application browsing, check with your system administrator.

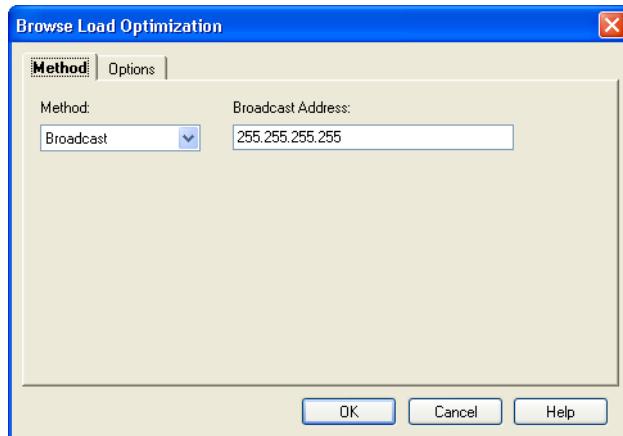
Load Optimization

This feature makes Xstart connections more efficient. The connection is redirected to another host if the original host is already accommodating many connections.

When you run the Xstart file, the system locates the specified host. If that host is busy, the system finds the host best able to accommodate the connection, based on the search format you specified.

Methods

To configure Xstart for load optimization, select a method on the Method page of the Browse Load Optimization dialog box.



The following options are available:

For more information about rupdb.txt, see "Host List File" on page 59.

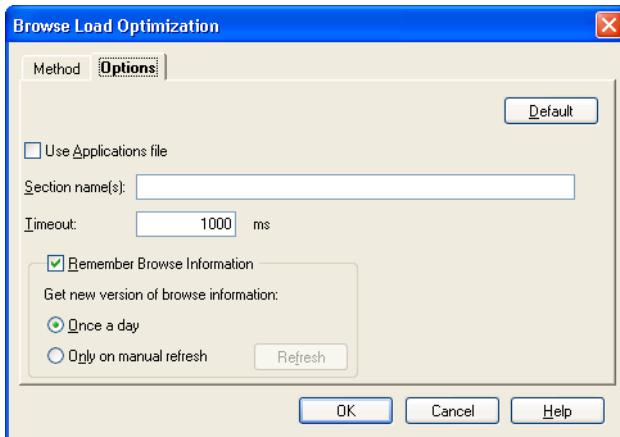
For more information about appdb.txt, see "Application Database File" on page 60.

NIS and NIS+ file retrieval methods are available only after configuring them in Directory Services Explorer.

- File—Xstart scans the `rupdb.txt` file for available hosts and tries to run the application on the least busy host. You can create and maintain this file, and save it in the `User` directory. This method is the easiest to run and is convenient if the desired application resides on every host in `rupdb.txt` (such as Xterm). If the application runs on certain hosts only (not necessarily the least busy ones), then this method could fail.
Alternatively, you can use `rupdb.txt` in conjunction with `appdb.txt` (provided you have previously created `appdb.txt`). In this case, select the Use Applications File option on the Options page. By comparing the two files, Xstart figures out what subset of hosts in `rupdb.txt` have the desired application and selects from those only.
- FTP—Uses a file on an FTP server as the source for available hosts. You can read a file this way but not edit it. To properly configure load optimization by FTP, enter the server name, user name, password, and account (if applicable) in the fields provided. In the File box, enter the name and location of the source file on the FTP server.
- NIS—Uses an NIS (Network Information Service) map `rupdb` as a source for available hosts. Before browsing, you must configure Directory Services. The system administrator on the UNIX side must create the map.
- NIS+—Uses an NIS+ map `rupdb` as the source for available hosts. Before browsing, you must configure Directory Services. The system administrator on the UNIX side must create the map.
- LDAP—Uses the Lightweight Directory Access Protocol (LDAP). Like NIS+, LDAP secures its objects by requiring client authentication. Before browsing, you must configure Directory Services.
- Broadcast—Sends out a broadcast on the network. This option is limited to queries within your subnet, unless you type an address for another subnet. If you selected Use Applications File on the Options page, then Xstart broadcasts the `rup` RPC to the subset of hosts in `appdb.txt` that run the desired application. If Use Applications File is not selected, then Xstart broadcasts to all hosts on the subnet. Using this method, you do not need a `rupdb.txt` file.
- Browse Applications—Uses an application database file (`appdb.txt`) to get a list of hosts to check.

Options

To specify options for load optimization, select a method on the Options page of the Browse Load Optimization dialog box.



The following options are available:

Use Applications File—Specifies that Xstart uses `rupdb.txt` in conjunction with `appdb.txt`.

Section Name(s)—Specifies one or more section names (separated by commas). These are defined in `rupdb.txt`. Each section name field can include one or more section names (separated by commas).

Timeout—Sets a timeout value from 0 to 9999 milliseconds. If Broadcast was selected on the Method page, this time is the total time that Xstart waits for answers from remote hosts. If other methods were selected, this time is the maximum time to wait for an answer from each host.

Remember Browse Information—For more information, see the description in “Browse Hosts dialog box: Options page” on page 56.

Default—Restores original settings.

To optimize loads on hosts:

- 1 Create the Xstart file. For more information, see “Creating Startup Files” on page 44.
- 2 In Xstart, click Settings.
- 3 In the Xstart Settings dialog box click the Other tab.
- 4 In the Browse Methods area, select Load Optimization and then click Configure.
- 5 In the Browse Load Optimization dialog box, do the following:
 - On the Method page, select a method and provide the appropriate information.
 - On the Options page, provide application file information/parameters and browse information parameters.
- 6 Click OK.

When you run the Xstart file, the system locates the host you specified. If that host is busy, the system finds the host best able to accommodate the connection, based on the search formats specified.

Using Xstart on VMS Systems

You can use Xstart on VMS systems by selecting the correct startup method for your transport software and entering all of the required information in the Xstart window.

TCP/IP Transports

You can use Xstart on a VMS system running TCP/IP if your VMS system supports REXEC or RSH. Alternatively, you can use TELNET to connect and start remote applications.

You must create a script on the host containing the DISPLAY environment variable specification and the command to start the X client. You can then use REXEC or RSH to connect to the host and execute the script.

If your VMS system supports REXEC or RSH, and it is running Version 4.0 of the PCX\$SERVER command processor, start an application by choosing the REXEC or RSH startup method and type the following in the command box:

```
@sys$system:pcx$server 4,display-number, screen-number,  
tcpip,node-address, command
```

For example:

```
@sys$system:pcx$server 4,0,0,tcpip,2.10 DECW$TERMINAL
```

DECnet Transports

To use Xstart on a VMS system running DECnet, use the PCX\$SERVER (DECnet) startup method. Depending upon which version of the PCX\$SERVER command processor you are using, type one of the following in the Command box:

For Version 2, type:

```
DECW$TERMINAL
```

For Version 3, type:

```
3,transport,node-address,command
```

For example, to send the command DECW\$TERMINAL to your node address 2.10 on DECnet, type the following:

```
3,DECNET,2.10,DECW$TERMINAL
```

For Version 4, type:

```
4,display-number,screen-number,transport,  
node-address,command
```

For example, to specify display number 0 and screen number 0, and send the command DECW\$TERMINAL to your node address 2.10 via DECnet, you would type the following:

```
4,0,0,DECNET,2.10,DECW$TERMINAL
```

You can also use command field macros when specifying information. For example:

```
4,@#,0,DECNET,@a,DECW$TERMINAL
```

Startup Modes

Selecting an X Client Startup Mode

For more information, see "Communication Settings" on page 149.

In Xconfig, you can select the startup mode for the client. The startup mode determines the sequence of events when you start Exceed, including automatic host connection. The startup mode you use depends on your transport, your host, and your preferences.

To select an X client startup mode:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 On the Communication page, select one of the following startup modes from the Mode box:
 - Passive Mode—Before using HostExplorer, Xstart, Xsession, or a remote process to manually connect to a host and start an X client, select Passive. This startup mode does not connect to a specific host when it starts Exceed. You must know the UNIX commands required to run X clients.
 - XDMCP Query—Connects to, and queries, the host specified in the Connect Host box of the XDMCP Startup Modes dialog box (accessible by selecting XDCMP Query in the Mode box on the Communication page and clicking the Configure button).
 - XDMCP Indirect—Connects to, and queries, the host specified in Connect Host in the XDMCP Startup Modes dialog box. After connecting, a general request is made for X display management (XDM) to start clients on the host and broadcast the request to one or more other hosts.
 - XDMCP Broadcast—Broadcasts an XDM request to hosts included in the Host List file (`xdmcp.txt`) or to the address in the Broadcast Address box of the Transport Settings dialog box.

Passive Startup Mode

Passive startup mode lets you start Exceed without connecting to a specific host. If you plan to use Xstart or Xsession to manually connect to a host and start X clients, or if you are using a remote process such as TELNET or an Xterm to start clients, you must use this startup mode.

Note: If you are not using a local window manager (that is, either HWM, MWM, or native window manager), you must start a remote X window manager.

Before starting Exceed:

- Start the HWM or MWM window manager. You can double-click the appropriate shortcut. You must know how to run X clients. Enter commands in the Command box. Depending on whether your host is UNIX or VMS, the command line varies.
- Determine whether the DISPLAY environment variable is already defined on the host. If not, enter it on the command line. Otherwise, your X client will not run.

For more information about DISPLAY, see “Setting the DISPLAY Environment Variable” on page 89.

Command Parameters

The following is a list of available command parameters:

Parameter	Explanation
<i>path</i>	The directory containing the application you want to run on the host to which you are connected. If you have pre-configured the PATH environment variable on your host, you may not need to enter it on the command line.
<i>application</i>	The executable name of the application.
<i>parameters</i>	Any application parameters that you want to specify.
<i>-display</i>	The command line option that introduces the display specification of Exceed. This specification contains the <i>mypcname</i> , <i>transportindicator</i> , and <i>displaynumber</i> parameters. If you have pre-configured the DISPLAY environment variable on your host, you do not need to enter your display specification on the command line.

Parameter	Explanation
<i>mypcname</i>	The name or network address of the computer running Exceed.
<i>transportindicator</i>	An indicator that corresponds to the type of transport you are using. If you are using TCP/IP, use one colon (:); for DECnet, use two colons (::).
<i>displaynumber</i>	The Exceed display number. You can specify this value on the Communication page (by clicking Network And Communication in Category View in Xconfig). Typically, the display number is zero (0).
&	Indicates that this UNIX application should run in the background.

XDMCP Query Startup Mode

When you start Exceed, XDMCP Query startup mode automatically connects to the host specified in the Connect Host box of the XDMCP Startup Modes dialog box. After you log in, Exceed queries the host that starts the clients specified in the host XDM session (script) file.

Note: XDMCP Query startup mode assumes that the host supports the X Display Manager Control Protocol and contains a session file (script) to start clients.

Before starting Exceed:

- Ensure that the host is running the X Display Manager (XDM).
- Verify the name or network node specification is correct for the host you are connecting to (as specified in the Connect Host box in the XDMCP Startup Modes dialog box). To access this dialog box, refer to the following procedure.
- Ensure an XDM session file exists—Xstart verifies that an XDM session file (client starter script) exists on the host.

To configure Exceed to use XDMCP Query startup mode:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 On the Communication page, select XDMCP Query in the Mode box. Leave the Display Number set to the default value of 0 unless your system administrator tells you otherwise.
- 3 Click Configure.
- 4 In the XDMCP Startup Modes dialog box, type the name of the host to which you want to connect at server startup in the Connect Host box. If you leave the box blank, Exceed prompts for a host name at runtime.
- 5 Modify any additional XDM settings displayed in the XDMCP Startup Modes dialog box.

To start X clients:

Before starting X clients, make sure that Exceed is configured to start in XDMCP Query startup mode using Xconfig.

- 1 Start Exceed and run XDMCP Query. One way to do this is to navigate to the Open Text Exceed program group on the Start menu, point to Exceed Tools, and click Exceed XDMCP Query.
- 2 In the Exceed XDMCP Query dialog box, type a host name or IP address and click OK.
- 3 Log in to the host. Exceed queries the host, starting clients listed in its XDM session (script) file.
- 4 To start additional X clients, you can use another startup application (that is, Xstart, Xsession, or TELNET).

XDMCP Indirect Startup Mode

When you start Exceed, XDMCP Indirect startup mode sends a query to the host specified in the Connect Host box of the XDMCP Startup Modes dialog box. Either the host starts, or it broadcasts a request for one or more other hosts to start clients.

Note: This startup mode assumes that the host supports the X Display Manager Control Protocol and contains a session file (script) to start clients.

Before starting Exceed:

- Ensure that the host is running the X Display Manager (XDM).
- Verify the name or network node specification for the host you are connecting to (as specified in the Connect Host box in the XDMCP Startup Modes dialog box). To access this dialog box, refer to the following procedure.
- Ensure an XDM session file exists—Xstart verifies that an XDM session file (client starter script) exists on the host.

To configure Exceed to use XDMCP Indirect mode:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 On the Communication page, select XDMCP Query in the Mode box. Leave the Display Number set to the default value of 0 unless your system administrator tells you otherwise.
- 3 Click Configure.
- 4 In the XDMCP Startup Modes dialog box, specify the hosts that you want to receive the broadcast.
- 5 Specify additional XDM settings as necessary, and click OK.

If the Select First Display Manager option is selected in the XDMCP Startup Modes dialog box, Exceed connects to the first display manager that responds to the broadcast and the Login Information dialog box prompts you to log in to the host.

If the Select First Display Manager option is cleared, Exceed opens the Display Manager Chooser dialog box, prompting you to select a host to manage the display. After you make a selection, the Login Information dialog box prompts you to log in. Once successfully logged in to the host, clients specified in the XDM session file (script) are run.

To start X clients:

Before starting X clients, make sure that Exceed is configured to start in XDMCP Query startup mode using Xconfig.

- 1 Start Exceed and run XDMCP Query. Navigate to the Open Text Exceed program group on the Start menu, point to Exceed Tools, and click Exceed XDMCP Query.
- 2 Log in to the host specified in the Connect Host box. After a connection is established, the host either starts clients or broadcasts a request for one or more other hosts to start clients, depending on information in the XDM session file (script).
- 3 The host that becomes the display manager depends on the Select First Display Manager setting in the XDMCP Startup Modes dialog box.

If this setting is checked, the first responding host becomes the display manager, and the Login Information dialog box appears for you to log in to that host.

If this setting is not checked, the Display Manager Chooser dialog box opens. You must select a host to be the display manager. After you choose, the Login Information dialog box opens for you to log in to the host.

- 4 To start additional X clients, you can use another startup application (that is, Xstart, Xsession, or Xsession Console).

XDMCP Broadcast Startup Mode

When you start Exceed, XDMCP Broadcast startup mode broadcasts an X connection request to the network hosts. You can broadcast to hosts in the host list file (`xmcp.txt`) and/or those referenced by the broadcast address. Multicast addressing limits the sending of packets to a specific group of hosts. This avoids a broadcast to every host on the network. You can specify an address in the XDMCP area of the XDMCP Startup Modes dialog box.

Note: This startup mode assumes that the host supports the X Display Manager Control Protocol and contains a session file (script) to start clients.

Before starting Exceed:

- Ensure that the host is running the X Display Manager (XDM).
- Verify the name or network node specification is correct for the host you are connecting to (as specified in the Connect Host box in the XDMCP Startup Modes dialog box). To access this dialog box, refer to the following procedure.
- Ensure an XDM session file exists—Xstart verifies that an XDM session file (client starter script) exists on the host.

To configure Exceed to use XDMCP Broadcast mode:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 On the Communication page, select XDMCP Broadcast in the Mode box. Leave the Display Number set to the default value of 0 unless your system administrator tells you otherwise.
- 3 Click Configure.
- 4 In the XDMCP Startup Modes dialog box, specify the hosts that you want to receive the broadcast.

You can add the broadcast host names to the Host List file (by default, `xdmcp.txt`). If you select Broadcast/Multicast, Exceed broadcasts to the address specified in the Address box.

- 5 Specify additional XDM settings as necessary.

If Select First Display Manager is selected in the XDMCP Startup Modes dialog box, Exceed connects to the first display manager that responds to the broadcast and the Login Information dialog box prompts you to log in to the host.

If Select First Display Manager is cleared, Exceed opens the XDMCP Display Manager Chooser dialog box which prompts you to select a host to manage the display. After making a selection, the Login Information dialog box prompts you to log in. Once successfully logged in to the host, clients specified in the XDM session file (script) are run.

To start an X client:

Before starting X clients, make sure that Exceed is configured to start in XDMCP Broadcast startup mode using Xconfig.

- 1 Navigate to the Open Text Exceed program group on the Start menu, point to Exceed Tools, and click Exceed XDMCP Broadcast.
- 2 Exceed starts and broadcasts a request to hosts listed in the Host Access Control file to start clients specified in their scripts.

The host that becomes the display manager depends on whether Select First Display Manager is selected in the XDMCP Startup Modes dialog box. If selected, the host connects to the first display manager.

Note: To specify a host that is not listed in the Host List file, type the address in the Host box, and click Add.

- 3 If you want to run additional X clients, you can use a separate startup application (that is, Xstart, Xsession, or TELNET).

XDMCP Timeouts

The XDMCP Idle dialog box indicates that the host has not responded to your XDMCP request and Exceed has timed out. The timeout is set to 126 seconds.

- To force the server to reset after timing out, click Retry.
- To force Exceed into Passive mode until the server resets, click Passive.
- To exit Exceed, click Exit.

Chapter 3

Advanced Connection Methods

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Advanced Xstart Features

Using Login Macros

You can use macros as shortcuts in the User ID, Password, and Command boxes of Xstart.

User ID and Password Macros

For more information, see “Creating a Global Login” on page 79.

You can use the following macros to specify your user ID and password in Xstart.

Macro	Description
@u or @U	Inserts the user ID, depending on the startup mode.
@p or @P	Inserts the password, depending on the startup mode.
@h or @H	Inserts the host name, depending on the startup mode.
@w or @W	Inserts the Windows user name.
%w	Inserts your Windows user ID.

For more information, see “Defining User ID and Password Macros” on page 82.

You can also use @u or @U and @p or @P to specify default login information in Xstart.

Command Macros

In Xstart, the Command box lets you send a UNIX command to the host. The command you type depends on your host system and how it is configured. You can use the following macros when specifying a command. These macros are automatically defined by Xstart; you do not need to perform additional steps to define them.

Macro	Description
@d or @D	<p>Inserts the display environment specification. Do not use with VMS systems.</p> <p>For example, type the following command to start xterm:</p> <pre>xterm -display @d &</pre>
@a or @A	<p>Inserts the network address. This macro is not supported by the hRPS start method.</p> <p>For example, type the following command to start xterm:</p> <pre>xterm -display @a:0 &</pre>
@m	<p>Inserts security information as part of the MIT-MAGIC-COOKIE-1 (Xauthority) security feature. At run time, Xstart replaces @m with the required security information and key and sends this information to the host. Xstart also adds the key to the local database, and Exceed then uses this key to authenticate X applications. If you select the Enable User Access Control List option on the Security page in Xconfig, only X connections started by Xstart with the @m macro in the command line are accepted.</p> <p>For example, type the following command to start xterm using Xauthority security:</p> <pre>@m/usr/openwin/bin/xterm -sb -ls -display @d&@;</pre>
@:	<p>Inserts the correct display transport identifier (that is, ":" for TCP/IP and "::" for DECnet). This macro is not supported by the hRPS start method.</p> <p>For example, type the following command to start xterm:</p> <pre>xterm -display @a@:0 &</pre>

Macro	Description
@#	Inserts the Display Number as configured on the Communication page in Xconfig. This macro is not supported by the hRPS start method. For example, type the following command to start xterm: <code>xterm -display @a@:@# &</code>
@@	Inserts the @ character.
@#	(Local Application method only) Inserts the Display Number.
@ !	(Local Application method only) Starts Exceed if it is not already running.

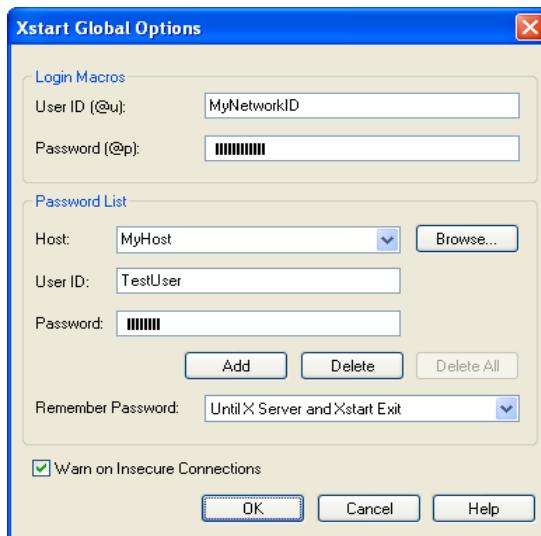
Creating a Global Login

This feature lets you cache your password, so that during an Xstart session, you log in just once. The system caches the password until you either exit Exceed or manually empty the cache. For example, you may need to manually empty the cache if you are leaving your computer unattended for a long period of time.

To create a universal login:

For more information, see "Creating Startup Files" on page 44.

- 1 Create an Xstart file using Xstart.
- 2 In Xstart, click Options on the Tools menu. The Xstart Global Options dialog box opens.



- 3 In the Login Macros area, do the following:

For more information, see "User ID and Password Macros" on page 77.

- User ID (@u)—Type a global user name. @u or @U automatically inserts this default user ID in the Xstart Information dialog box for each connection you make.
- Password (@p)—Type a global password. An asterisk displays for each character. @p or @P automatically inserts this default password in the Xstart Information dialog box for each connection you make.

- 4 In the Password List area, create a password list by providing one or more host names and a corresponding user ID and password for each host.

- 5 Select an option from the Remember Password drop-down list:
 - No—The password is not remembered and must be typed for each connection.
 - Until X Session Loaded Or X Server Exits—if the host recognizes the user ID and password, further connections to that host by the user ID do not require a password unless either the Xsession finishes loading or the Exceed X server exits.
 - Until X Server Exits—if the host recognizes the user ID and password, further connections to that host by the user ID do not require a password unless the Exceed X server exits.
 - Until X Server And Xstart Exit—if the host recognizes the user ID and password, further connections to that host by the user ID do not require a password unless both the Exceed X server and Xstart exit.
- 6 Ensure that the Warn On Insecure Connections check box is selected if you want a warning message to appear each time a user attempts to establish an unsecured connection using Exceed. If you do not select this option, this warning message does not appear.

To secure your connection sessions, Exceed offers Secure Shell encryption and authentication, which is available only if you purchase and install Open Text Secure Shell.

- 7 Click OK to close the Xstart Global Options dialog box.
- 8 In Xstart, click Save on the File menu.

To manually empty the password cache:

- 1 In Xstart, open an Xstart file by clicking Open on the File menu.
- 2 Click Options on the Tools menu. The Xstart Global Options dialog box opens.
- 3 In the Password List area, click Delete All. This empties the cache, so that the next time you run or create an Xstart connection, the system prompts for a password.

Defining User ID and Password Macros

You can use a user ID and password macro to automatically provide your user ID or password.

To define user ID and password macros:

- 1 In Xstart, click Options on the Tools menu.
- 2 In the Xstart Global Options dialog box, type a user name and password in the Login Macros area. Macro @u (or @U) inserts the user name and macro @p (or @P) inserts the password automatically in the Xstart Information dialog box.
- 3 Continue to configure and save your Xstart file as appropriate.

Remembering Host Passwords

Use the Xstart Global Options dialog box to specify the Remember Password state for a specific host, as well as user ID and password. To access this dialog box, click Options on the Tools menu in Xstart. After Xstart recognizes the login combination, it uses the appropriate Remember Password rule.

Note: If you cannot browse, you may need to configure Host browsing in the Browse Hosts dialog box. In Xstart, click Settings in the Startup area. In the Xstart Settings dialog box, click the Other tab. On the Other page, click Configure for Hosts in the Browse Methods area.

Managing the Password List in Xstart

You can add or modify password entries for Xstart files.

To add or update password entries:

- 1 In Xstart, open an Xstart file by clicking Open on the File menu.
- 2 Click Options on the Tools menu. The Xstart Global Options dialog box opens.

- 3 Specify values for the Host, User ID, and Password boxes. Next, select a rule from the Remember Password drop-down list box, and then click Add. If an entry already exists for the host and user ID you specified, you have the option of updating the entry when you click Add.
- 4 Click Yes in the confirmation dialog box that opens to apply your changes.

To delete password entries:

- 1 In Xstart, open an Xstart file by clicking Open on the Tools menu.
- 2 Click Options on the Tools menu. The Xstart Global Options dialog box opens.
- 3 Do one of the following in the dialog box:
 - To delete all password list entries, leave all boxes blank and click Delete All.
 - To delete all password list entries for a specific user ID, specify the value in the User ID box and click Delete All.
 - To delete all password list entries for a specific host, specify the value in the Host box and click Delete All.
 - To delete all password list entries for a specific user ID on a specific host, specify the host in the Host box and the user ID in the User ID box and click Delete.

Password Expiry Prompts

Xstart detects UNIX password expiry prompts that require the user to change the password. This applies to Rlogin, TELNET, and Secure Shell start methods.

Changing Hosts, IDs, and Passwords Across Multiple Files

You can change your host, user ID, and password across multiple Xstart files at the same time.

To change information across multiple files:

- 1 In Xstart, click Find And Replace in the Tools menu. The Find And Replace dialog box opens.
- 2 In the Location area, browse to the directory in which you want to perform your search. The *User* directory is selected by default.
- 3 In the Find area, specify the item(s) you want to change using the Host, User ID, and/or Password boxes.
- 4 In the Replace area, specify your new information. If you are changing the password, you must type the new password in the Password box and then re-type it in the Confirm Password box.
- 5 Click one of the following buttons:
 - Replace All—Lets you apply changes to all Xstart files meeting the defined criteria.
 - Replace—Lets you apply changes to individual files.
- 6 In the Confirm Change dialog box that opens, review your proposed change(s) and use the Change, Next, or Change All buttons to apply the appropriate action to the specified Xstart file.
- 7 Repeat steps 2 – 6 as many times as necessary, then click Close in the Find And Replace dialog box.

For detailed user interface information, see Exceed Help.

To access the Common Settings page, click Display And Video in Category View for Xconfig.

Running Multiple Exceed Sessions

You can run multiple instances of the Exceed X server. If you open Exceed while another instance of Exceed is running, the Exceed Multiple Sessions dialog box opens. It prompts you to decide whether to run multiple sessions or to run just one session.

If Do Not Prompt For Multiple Sessions is selected on the Common Settings page, or if the option was selected in a previous Exceed Multiple Sessions dialog box, then the Exceed Multiple Sessions dialog box does not open when subsequent Exceed sessions are run. To re-enable the appearance of this dialog box, clear the Do Not Prompt For Multiple Sessions check box on the Common Settings page.

To run another instance of Exceed, select Run Multiple Sessions on the Common Settings page. If this option is not selected (and Do Not Prompt For Multiple Sessions is selected), then neither the prompt dialog box nor another Exceed session opens.

Starting Multiple X Clients or Windows Programs

Xstart is designed specifically for starting X clients. Local Application startup method lets you start any Windows application, including an FTP or TELNET session. If you use additional command line parameters supported by FTP and TELNET, you can create an Xstart file (and shortcut) that automatically connects to the host.

Using Xstart Commands

When creating an Xstart file, you can put multiple commands in the Command box in Xstart. This feature is useful for simultaneously starting X applications that you commonly use, such as expense reports, calendar, and e-mail applications. To use this feature, all of the X applications must reside on the same host.

Note: You may need to edit the command line to accommodate a particular host. For example, each command is separated by a semi-colon. However, some UNIX hosts do not accept semi-colons.

Using Xsession

Xsession sequentially executes a series of program/client startup files. It lets you create icons to run:

- Exceed using different initial window and startup modes
- multiple Xstart files

Running Xstart from a Command Line

You can run Xstart from a command line to start an X client, or a character-based application in a VT terminal emulator window, directly from a Windows shell. Use the following command line syntax in the Windows Run dialog box:

```
home/xstart [-m Method] [-h Host] [-u UserID] [-p Password]  
[-c Command] [-l|-L] [-t CloseTimeout] [-a Type]
```

or

```
home/xstart Settings.xs [-m Method] [-h Host] [-u UserID]  
[-p Password] [-c Command] [-l|-L] [-t CloseTimeout]  
[-a Type]
```

where:

- *home* is your *User* directory.
- *Settings.xs* is the name of an Xstart settings file. If the Xstart file name is preceded by a path, Xstart searches that directory. Otherwise, it searches the *User* directory.

Note: Options specified after the *Settings.xs* parameter override settings in the *.xs* file provided that the options are placed to the right of the file specification. If an *.xs* file is specified without command line options, Xstart uses information in the file to start the X client.

- items enclosed in [] are available options.

Spaces within a command must be enclosed in double quotation marks:
" ".

Command Line Options

The following table describes command line parameters:

Parameter	Description
<code>-m Method</code>	<code>Method</code> can be REXEC, RSH, PCX, TELNET, RLOGIN, hRPS, SSH, or local, each representing the supported startup method.
<code>-h Host</code>	<code>Host</code> is the host to which you want to connect. Type either the host name or its network address.
<code>-u UserID</code>	<code>UserID</code> is the login name used to log in to the host.
<code>-p Password</code>	<code>Password</code> is the host password for the startup method.
<code>-c Command</code>	<code>Command</code> is the action executed by the host. If the command contains spaces, it must be enclosed in double quotes (for example, “ <i>my command</i> ”).
<code>-l -L</code>	Login Information prompt. Type either: <ul style="list-style-type: none"> (Minus sign, lowercase L) The Xstart Login Information dialog box opens at run time and prompts for a host, user ID, password, and command. (Minus sign, lowercase L, minus sign) Xstart does not prompt for login information.
<code>-t CloseTimeout</code>	<code>CloseTimeout</code> is the number of seconds the remote execution facility socket remains open after the host has acknowledged receipt of the command.
<code>-a Type</code>	Specifies the program <code>Type</code> and can be one of the following: <ul style="list-style-type: none"> <code>xwin</code> (for an X Window client) <code>term</code> (for an application that does not require X and can be run using a VT terminal emulator)

Note: You can run multiple Xstart files simultaneously with Xsession. You can create an Xsession file (.ses) that includes multiple client or application startup files (.xs). You can also create a shortcut that lets you start the files included in the Xsession.

To start an xterm on a host called Sparcy, using REXEC:

```
home\xstart -m rexec -h sparcy -u user -p abcdabcd -c "xterm -ls -display pc:0&"
```

To start an xterm on a host called Sparcy, using RSH:

```
home\xstart -m rsh -h sparcy -u user -c "xterm -ls -display pc:0&"
```

To use the file `xterm.xs` located in the `User` directory to start an X client:

```
home\exceed\xstart xterm.xs
```

Environment Variables

DISPLAY and PATH variables are often defined for the host session. For example, X clients use DISPLAY to determine which X server to use. You can specify these variables:

- on the command line
- for the current X window session

You can save the DISPLAY variable in the startup file (UNIX hosts: `.cshrc` for the C shell, or `.profile` for the Bourne shell). The startup file automatically sets any variables needed when a user logs in. To include your DISPLAY variable in the startup file, add the commands described in the next topic.

Note: You may want to verify that the DISPLAY environment variable does not already exist in the host startup file. If DISPLAY has been set, it appears in the list of environment variables for your computer on the host.

To view this list, enter the command corresponding to your host:

- UNIX: "env" or "printenv" ("echo \$DISPLAY" gives the current value)
- VMS: "SHOW DISPLAY"

Setting the DISPLAY Environment Variable

You can specify the DISPLAY on the Xstart command line that starts the X client. The syntax depends on the type of transport:

Transport	Display Parameter Syntax
DECnet	<code>-display mypcname::0 &</code>
TCP/IP	<code>-display mypcname:0 &</code>

where *mypcname* is the IP address of the Exceed X server, and & indicates that the application should start in the background.

For the Current X Window Session

If you set the DISPLAY variable on the host, you have to specify it when you start a client. The command to set your DISPLAY variable depends on your transport and the shell.

C shells normally display a % prompt.

Transport	Command
DECnet	<code>setenv DISPLAY mypcname::0</code>
TCP/IP	<code>setenv DISPLAY mypcname:0</code>

Bourne shells normally display a \$ prompt.

Transport	Command
DECnet	DISPLAY= <i>mypcname</i> ::0 export DISPLAY
TCP/IP	DISPLAY= <i>mypcname</i> :0 export DISPLAY

Note: If you are running Open Windows on a Sun Sparcstation, set the following environment variables after setting the display:

OPENWINHOME=/usr/openwin

LD_LIBRARY_PATH=/usr/openwin/lib

For both variables, replace *usr* with the directory on the host where the X Window system files are located.

Command Line Syntax for Starting X Clients

UNIX Hosts

If DISPLAY is not defined, you can start X clients using the following command line syntax for your transport:

Transport	Command Line
DECnet	[path/]application [parameters] -display <i>mypcname</i> :: <i>displaynumber</i> &
TCP/IP	[path/]application [parameters] -display <i>mypcname</i> : <i>displaynumber</i> &

If DISPLAY is defined, you can start X clients using this command line syntax:

[path/]application [parameters] &

VMS Hosts

You can specify DISPLAY on the client startup command only if you are using Xstart with certain command line syntax shown missing. Otherwise, you must define DISPLAY on the host.

If DISPLAY is defined, you can start X clients using this command line syntax for your transport:

Transport	Command Line	Example
DECnet	RUN SYS\$SYSTEM:DECW\$application	RUN SYS\$SYSTEM:DECW\$CLOCK
TCP/IP	RUN SYS\$SYSTEM:DECW\$application	RUN SYS\$SYSTEM:DECW\$CLOCK

Note: There is no space after the colon (:) in the specified command lines.

Using Exceed on a Remote PC

Xweb Wizard

Xweb Wizard lets you deploy and manage access to X applications by publishing Xstart profiles to a Web server either locally, on the network, or on a remote host.

To create a Web page:

- 1 Open Xweb Wizard by doing one of the following:
 - On the Start menu, navigate to the Open Text Exceed program group, point to Exceed Tools, and click Xweb Wizard.
 - Selecting multiple Xstart files using Exceed Connection Manager and selecting the option to create an Xweb package.

- 2 On the Welcome page, click Next.



- 3 Select one of the Web page options and specify an Xstart file. If your installation of Exceed includes the Profile Space feature, and the Exceed administrator has enabled it or granted users the enable privilege, you can select Use Profile Space to specify or browse for an Xstart profile that resides in any available Profile Space. This option is enabled by default if Profile Space is enabled in Exceed Connection Manager.
- 4 Specify a Web page file name, and click Next.
- 5 Specify Web page components. If the X client is embedded in the Web page, specify the pixel dimensions of the Xweb object and select whether or not to maintain the connection when users navigate between Web pages.

Type the text or HTML that appears at the bottom of the Web page or below the Xweb object. Click Next.

- 6 Do one of the following:
 - Specify a folder or click Browse to locate one.
 - Select Transfer Using HostExplorer FTP. Specify a host name, valid user login credentials, and a directory on the remote host.
- 7 Click Save.

Xweb Plug-in

If Xweb is installed with Exceed, the file `nphc1x.dll` is placed in the `PLUGINS` folder of the default Web browser. If necessary, you can copy it into another Web browser plug-in directory.

Note: This plugin is not interchangeable between Exceed version numbers.

About Xsession

See page 96 for a sample Xsession Window.

Xsession lets you start multiple X clients or Windows programs (including TELNET, TN3270, and FTP settings files) simultaneously. Each Xsession file (`.ses`) references multiple Xstart startup files (`.xs`), each of which is configured to automate the process of accessing hosts and starting applications. Therefore, before starting an Exceed session using Xsession, you must create an Xstart file for each X client and Windows application that you want Xsession to start. The information required by individual programs resides in the Xstart files associated with the Xsession file.

Windows 7 users can pin specific Xsession files to the Xsession jump list. For more information, see “Windows 7 Support” on page 3.

When you run an Xsession file, the `.xs` files run in the order specified. You can indicate whether you want to start the Exceed X server when you run the Xsession file. If so, you can also specify the initial window and startup modes. You can install a shortcut that lets you run the files included in the X session.

Using Xsession with Profile Spaces

If your installation of Exceed includes the Profile Space feature, and the Exceed administrator has made the feature available, then you can use any available Profile Space to save and run Xsession files.

Note:

- Using the `GlobalExceed.ini` file, which is located in the `Global User` directory, administrators can enable or disable profiles spaces for all users, or allow users to enable it if required.
- Xstart startup files (`.xs`) referenced by an Xsession file (`.ses`) must reside in the same Profile Space as the Xsession file.

Running Multiple Xstart Profiles



To run multiple connections, create an Xsession file. Xsession lets you combine `.xs` files into a single `.ses` file that starts multiple X clients or Windows programs (including HostExplorer, TN3270, and FTP settings files) simultaneously.

In Xsession, click Options on the Tools menu. In the Xsession Options dialog box, you can specify the following:

- Whether the Exceed X server lists the file in its Session Startup submenu (accessible by clicking Tools on the Exceed menu) and the Exceed toolbar Session Startup button.
- Whether Exceed automatically starts before running the clients or programs.
- If you want Xsession to start the Exceed X server automatically, you can also specify the initial window and startup modes.

You can create different Xsessions to run different window managers simultaneously.

Xsession provides other useful options such as specifying a configuration file with custom settings, window modes, and startup modes. If you select these settings within Xsession, they override Xconfig settings. For more information about Xconfig settings, see “Chapter 4: Xconfig—Part I” on page 109 and “Chapter 5: Xconfig—Part 2” on page 157.

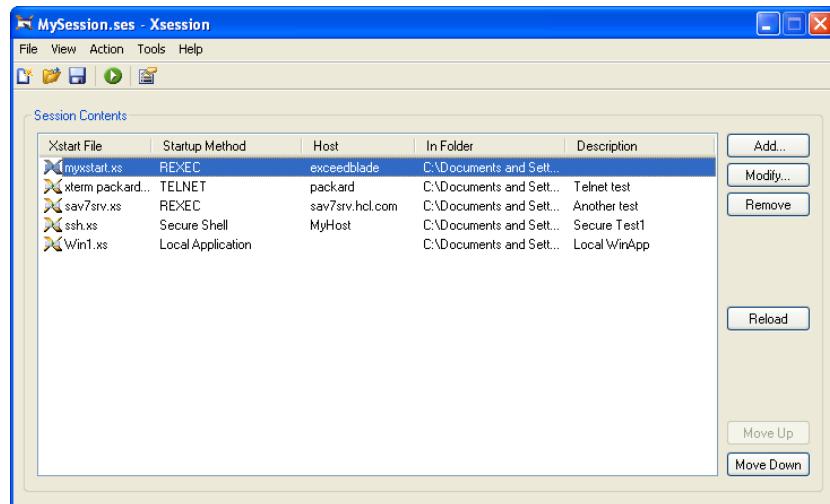
Note:

- By default, all Xsession files are saved in the Profile directory for the currently logged in user, but you can specify another location. The .ses file extension is appended automatically.
- If your installation of Exceed includes the Profile Space feature, then you can use any available Profile Space to save and run Xsession files. Xstart startup files (.xs) referenced by an Xsession file (.ses) must reside in the same Profile Space as the Xsession file.

Entering Startup Information

You may find it useful to create Xsession files that just start the X server with a specific startup mode and window mode. This lets you install custom icons to start the X server in different ways and to selectively override the default settings in Xconfig.

The Xsession displays information about Xstart files in the current session.



For information on creating an Xstart file, see “Creating Startup Files” on page 44.

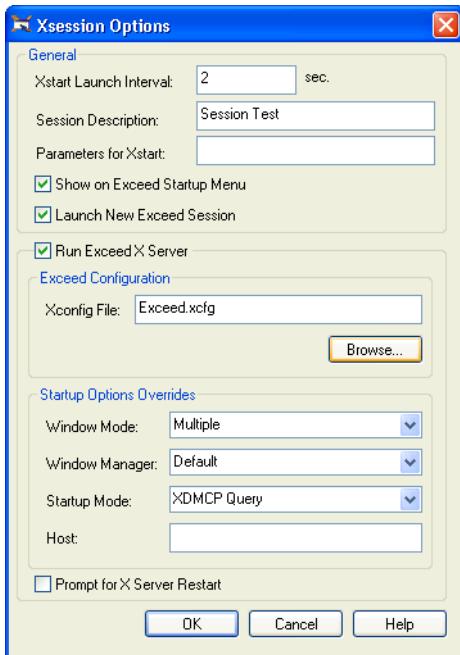
For more details about Xsession menus, see Exceed Help.

Use Move Up, Move Down, Add, Remove to manage the Xstart files. Modify opens the selected file in Xstart where you can edit the profile. Reload updates and redraws the list of available Xstart files. This is useful if you are adding or deleting Xstart files while running Xsession.

File menu commands let you create new Xsessions, open existing Xsessions, save Xsessions, and create shortcuts. View menu commands let you toggle the toolbar (on or off), set button size, or reload (update and redraw) the list of available Xstart files. This is useful if you are adding or deleting Xstart files while running Xsession.

Action menu commands let you run the current Xsession file, manage Xstart files listed in Session Contents, and open the selected file in Xstart for modification.

On the Tools menu, Repair lets you find and select a file which the application cannot locate (for example, if it was moved, deleted, or renamed since it was first added to the Xsession). The missing file is replaced by the selected file. Options opens the Xsession Options dialog box.



Xstart Launch Interval applies to Xstart programs only. Local applications are started immediately.

Use the General area to specify the interval between the startup of each Xstart file.

You can type a Session Description (up to 40 characters) which becomes the caption for the Session Startup menu command (and the menu that displays when you click Client Startup on the Exceed toolbar). To create this command, select Show On Exceed Startup Menu. If you did not specify a Session Description, Xsession uses the file name (without the extension) for the (menu command) caption.

Xsession settings override the defaults in Xconfig.

The Run X Server option starts Exceed automatically when the Xsession file is run. To restart the server with the server options specified in the Xsession file before running any programs, select Prompt For Server Restart. You can specify an Exceed X server configuration file.

You can specify further overrides under Startup Option Overrides. Select Single, Multiple, or Default (whatever is specified on the Xconfig Screen page) window mode. If the window mode is Multiple, select a window manager. Select a startup mode (Default is the mode specified on the Xconfig Communication page). If XDMCP Query or XDMCP Indirect is selected, specify the network address of the connect host.

Warning! To apply the new Xsession settings, you must restart the server.

Working with Xsession

To create or modify an Xsession file:

- 1 In Xsession, do one of the following:
 - To create an Xsession file—Click Add in the Session Contents area to locate and select a .xs file. Repeat as necessary.
 - To modify an Xsession file—Click Open on the File menu to locate and select a .ses file.
- 2 Use the buttons in the Session Contents area to add, manage, modify, or rearrange your .xs file(s).
- 3 On the File menu, click Save. Xsession files are automatically saved with an .ses extension in one of the following locations:
 - By default, all Xsession files are saved in the Profile directory.
 - If your installation of Exceed includes the Profile Space feature and the Exceed administrator has made it available, then you can use any available Profile Space to save and run Xsession files. Xstart startup files (.xs) referenced by an Xsession file (.ses) must reside in the same Profile Space as the Xsession file.

To specify options for the current Xsession file:

- 1 In Xsession, click Options on the Tools menu. The Xsession Options dialog box opens.
- 2 In the General area, do the following as necessary:
 - To change the time between startup of .xs files, modify the Xstart Launch Interval setting. The default value is 2 seconds.
 - To provide a brief description of the current Xsession file, use the Session Description box. This description becomes the caption for the file when it appears on the Session Startup menu (accessible by clicking Tools on the Exceed menu). If you do not provide a description, Xsession uses the current Xsession file name as the caption.
 - Use the Parameters For Xstart box to add command line parameters to the selected Xstart file. For more information, see “Running Xstart from a Command Line” on page 86.
 - To list the current Xsession file on the Session Startup menu for Exceed, select Show On Exceed Startup Menu. If you select this option, the file also appears in the list that appears when you click Session Startup on the Exceed toolbar.

The file is displayed with the caption as specified by the Session Description box mentioned above. For information on how to access the Session Startup menu, see the previous bulleted item.

- 3 If you want to automatically start the Exceed X server with your Xsession file, do the following:
 - a) Select Run Exceed X Server.
 - b) In the Exceed Configuration area, specify the Xconfig file that you want your Xsession file to run.
- 4 In the Startup Options Overrides area, select the appropriate startup options for your Exceed sessions. These options override the defaults in Xconfig.

- 5 If you want Xsession to prompt for confirmation *before* restarting the server (each time the file is run), select Prompt For X Server Restart.
- 6 Click OK to apply your changes and close the Xsession Options dialog box.
- 7 In Xsession, click Save on the File menu. Xsession files are automatically saved with an .ses extension in one of the following locations:
 - By default, all Xsession files are saved in the Profile directory.
 - If your installation of Exceed includes the Profile Space feature and the Exceed administrator has made it available, then you can use any available Profile Space to save and run Xsession files. Xstart startup files (.xs) referenced by an Xsession file (.ses) must reside in the same Profile Space as the Xsession file.

Xsession File Sequence

To troubleshoot a connection, see "Exceed Diagnostics" on page 299 and "Chapter 2:

Connecting to Hosts and Running X Clients" on page 19.

The following describes the sequence of events when you run an Xsession session. You can use this information to help you troubleshoot connection issues.

- 1 If Run Exceed X Server is selected in the Xsession Options dialog box (accessible by clicking Options on the Tools menu in Xsession), and the X server was not previously started, the X server starts.
If the X server is already running and you selected Prompt For X Server Restart, Xsession prompts you to restart the server.
- 2 The pause between the start of profiles corresponds to the Xstart Launch Interval specified in the General area of the Xsession Options dialog box. Profiles start according to the order listed in the Session Contents area of the Xsession file (.ses).

Starting Multiple Exceed X Servers

The easiest way to startup multiple, simultaneous instances of the Exceed X server is to use Xsession.

To start multiple Exceed X servers:

- 1 In Xsession, click Options on the Tools menu. The Xsession Options dialog box opens.
- 2 In the Session Description box, provide a description for the current Xsession file. For more information on how this description is used, see “Working with Xsession” on page 98.
- 3 Select Run Exceed X Server.
- 4 Click OK to save the session and close the Xsession Options dialog box.
- 5 In Xstart, create and save a profile (specifying Local Application as the startup method) for each instance of the Exceed X server. For each profile, ensure that:
 - the command line is fully specified or that settings in `Exceed.xcfg` are suitable
 - a unique display number is used for each instance

Note:

- Multiple X display support has certain restrictions. For more information, see Multiple X Display Support.
- If your installation of Exceed includes the Profile Space feature and the Exceed administrator has made it available, then you can use any available Profile Space to save and run Xsession files. Xstart startup files (`.xs`) referenced by an Xsession file (`.ses`) must reside in the same Profile Space as the Xsession file.

- 6 In Xsession, add the Xstart profiles to your Xsession file by clicking Add on the Action menu.
- 7 Save your Xsession file by clicking Save or Save As on the File menu. Optionally, create a shortcut to enable a double-click startup of the session by clicking Create Shortcut on the File menu.

Exceed Display Controller Console

For more details about the Exceed Display Controller Console, see Exceed Help.

Display numbers are used for differentiating between multiple instances of Exceed and are required to correctly map X server input and output. The Exceed Display Controller Console (a Microsoft Management Console plug-in) provides an interface for setting parameters that control display numbers in the `Display Manager.ini` file. The left pane displays a tree of the types of display number settings, which can be expanded to view various options. Select an option to view settings in the right pane.

For more information about Microsoft Management Console, consult the Microsoft Windows documentation.

Note: Exceed Display Controller Console is available only for terminal servers/remote desktop servers that are running Windows Server 2003, Server 2008 (32 and 64 bit), and Server 2008 R2 (64 bit).

Common Desktop Environment (CDE)

A handshake is an activity that keeps two computers or programs synchronized (such as the CDE display manager and the X protocol). It usually involves the exchange of messages or packets of data between two systems.

When you log in to the UNIX host via the CDE display manager using XDMCP, a handshake implemented by the X protocol is employed. CDE does not begin unless it detects a supported X server (that is, Exceed).

To start CDE:

- 1 Ensure CDE is configured properly on a UNIX host.
- 2 In Xconfig, click Display and Video in Category View. On the Screen page that opens, select either the Multiple or Single window mode.

Note: If you select multiple window mode and you are using the Windows (native) window manager, verify that the Cascade Windows option is not selected.

- 3 In Xconfig, click Network And Communication in Category View. On the Communication page that opens, select XDMCP Broadcast from the Mode drop-down list.

- 4 On the Actions menu in Xconfig, click Validate And Apply Changes to save your changes.
- 5 Start Exceed.
- 6 From the XDMCP Display Manager Chooser, select a UNIX host, and click OK. The greeter opens.
- 7 Log in to the UNIX host.

The CDE session manager starts and the interface displays on your computer.

Using Desktop Environments for Linux

There are two main types of X Graphical Desktop Environments in Linux. Depending on which one you chose when you installed Linux, either KDE or GNOME is set as the default desktop.

- KDE—K Desktop Environment uses KWin as its window manager.
- GNOME—GNU Network Object Model Environment works with window managers such as Enlightenment, Sawmill, and Window Maker.

KDE and GNOME run on a Linux host and are displayed on the remote computer using standard X protocol.

Note: For GNOME sessions using Esound, you need to grant access to port 16001 in the Windows Firewall Settings. For Windows Vista and later, you must disable Esound on the host or install an Esound server from a third party provider. For detailed information on this issue, refer to the Release Notes.

Running Multiple CDE Sessions

Running multiple CDE sessions requires passing command line parameters to `Exceed.exe`.

To create multiple Xstart sessions (each with specific command line parameters):

- 1 In Xstart, create an Xstart file by selecting Local Application as the startup mode, and click Settings. The Xstart Settings dialog box opens.
- 2 In the General area of the Other page, provide an explanation or label (such as CDEHostA) in the Description box, and click OK to close the Xstart Settings dialog box.
- 3 In Xstart, specify the `exceed.exe` command and its appropriate parameters in the Command box.

For example:

```
exceed.exe -d 1 -m query -h host -w single -n session
```

where:

`-d 1` specifies the display number

`-m query` specifies the startup mode

`-h host` specifies the connect host

`-w single` specifies the window mode

`-n session` specifies the session name that appears in the title bar (single window mode)

- 4 Click Run on the Action menu to test the startup file. If the session runs successfully, close the Exceed window, and then save the startup file by clicking Save or Save As on the File menu.
- 5 On the File menu, click New. Repeat steps 3 and 4 for each startup file. Be sure to type a unique description (such as CDEHostB, CDEHostC, and so on) for each session.

You can also add files by dragging and dropping .xs files into the Session Contents list.

To run Common Desktop Environment (CDE) sessions with Xsession:

- 1 In Xsession, click Add on the Tools menu to add Xstart files (.xs) to your Xsession. Xsession lists the files in Session Contents.
- 2 If necessary, use the Xsession Options dialog box (accessible by clicking Options on the Tools menu in Xsession) to make additional changes to your Xsession file. You can also modify or reorder your Xstart sessions within Xsession by using the Modify, Move Up, or Move Down buttons. For more information, see “Working with Xsession” on page 98.
- 3 Click Run on the Tools menu to test the CDE sessions.
- 4 If the Xstart sessions run successfully and you are satisfied with how the overall Xsession runs, click Save on the File menu. Optionally, create a shortcut to enable a double-click startup of the session by clicking Create Shortcut on the File menu.

Securing Connections

Open Text Secure Shell

To secure your connection sessions, Exceed offers Secure Shell encryption and authentication, which is available only if you purchase and install Open Text Secure Shell. Open Text Secure Shell is a client implementation of the Secure Shell protocol (SSH-2).

To make an Exceed X Window session secure, specify Secure Shell as the startup method in Xstart. The connection parameters specified in Xstart are used to establish a Secure Shell tunnel to the target host:

- Host
- User ID
- Authentication Method

For more information, consult the Open Text Secure Shell documentation.

Kerberos

This option is available only for the TELNET startup method. Select this option to enable use of Kerberos V5, and to select and configure options.

Kerberos is an authentication service developed at MIT for open network computing environments. Kerberos works by assigning a key, called a ticket, to each user that logs on to the network. The ticket is then embedded in messages to identify the sender of the message.

For more information, refer to Open Text Kerberos Help.

Smart Card

Hosts and passwords can be securely stored on a smart card. Using this security mechanism means that what is displayed in the Password box in Xstart is the PIN of the smart card, not the host password. Xstart uses the PIN to log in to the smart card and retrieve the host/password list. Use Smart Card Manager to maintain this list. (This feature is not available with 64-bit versions of the product.)

Note: The technology used by Smart Card Manager is derived from the RSA Security Inc. PKCS #11 Cryptographic Token Interface (Cryptoki).

VPN and NAT Support

Virtual private network (VPN) is used widely by organizations to extend network access in a secure manner. VPN creates a virtual network on the public telecommunication infrastructure by creating a secure tunnel. The VPN server issues a virtual IP address to the VPN client. This virtual IP address can cause problems when the user is attempting to establish an X connection since an X server, such as Exceed, may not be aware of the existence of the virtual IP address.

Use Exceed IP Discovery to dynamically discover the IP addresses adopted by the VPN client or masked by a network address translation (NAT) configuration. This feature is especially useful if the last remote translated IP address for the client computer is not the same as the unique IP address assigned to that computer.

IPDisCov is a platform-independent TCP/IP service, installed on a (UNIX) machine close to the host. Communicating on a user-defined port, it returns the true IP addresses of the incoming requests from Exceed, so that Exceed can successfully establish an X connection using that information.

X11 Authentication

For certain environments, user-level security is controlled by a binary file, `.Xauthority`. It contains cookies that associate an IP address with a binary value. When an X11 application runs, the file is accessed and then the appropriate cookie is extracted and sent to the X server (typically located on another computer). If the X server accepts the cookie, then the connection succeeds.

For more information, see “Open Text Secure Shell” on page 105.

For a higher level of security, consider using Open Text Secure Shell (a client implementation of the SSH-2 Secure Shell protocol) for X11 tunnelling and port forwarding. This product is a TCP-based client/server protocol that provides authentication, encryption, and data integrity.

X11 authentication options in Secure Shell interact with Exceed. When an unknown X client tries to connect, Exceed prompts for a decision to allow or refuse the connection. Allowing the connection depends on whether the X client is trusted or untrusted.

Password Aging

Password aging is a common tool used to ensure a modest level of security. Changing the password periodically reduces the potential damage caused by intruders who gain access to the network by using stolen user credentials. However, frequent password change also inconveniences end-users and reduces productivity because, in some cases, the passwords are stored in many application profiles. Users must manually replace the aged password with the new password.

For more information, see “Password Expiry Prompts” on page 83.

Exceed can handle password aging events and automatically propagate the changes to Xstart profiles. Users do not have to manually update Xstart profiles with the new password. Xstart detects UNIX password expiry prompts that require the user to change password. This applies to Rlogin, TELNET, and Secure Shell start methods.

Chapter 4

Xconfig—Part I

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About Xconfig



Xconfig includes pages for configuring Exceed input, communication, video, protocol, security, window mode, performance, X selection, font, troubleshooting, and transport settings. In most cases, the default settings are sufficient. If Exceed is running while you make changes to the configuration, the changes may take effect immediately or may require a server reset, depending on the settings changed. If the change requires a server reset, a confirmation message appears. A server reset terminates all X clients.

For more information about user files and their location, see the Installation Guide.

The default configuration file used by Exceed is `Exceed.xcfg`. Per-user files, such as this one, affect only the user who is making the change (that is, the user who is currently logged in). For example, if you configure `Exceed.xcfg` to use a certain display, then other users of the machine are not affected.

The default location for per-user files is:

Windows 7/Server 2008/2008 R2/Vista—

`C:\Users\Username\AppData\Roaming\Hummingbird\Connectivity\version\Exceed`

Windows XP/Server 2003—`C:\Documents and Settings\UserName\Application Data\Hummingbird\Connectivity\version\Exceed`

where `Username` is the name of the user and `Version` is the version number of your Open Text product.

Note: Each user of the product on the machine receives a personal `User` directory located in the product subfolder.

Windows 7 users can pin specific Xconfig files to the Xconfig jump list. For more information, see “Windows 7 Support” on page 3.

You can use Xconfig to make changes to `Exceed.xcfg` and create other configuration files (using Save As on the File menu). To use a configuration file other than `Exceed.xcfg`, you can either:

- Specify a configuration file in the Xsession Options dialog box and enable the Prompt For Server Restart option.
- Specify `/f` and the full path to the configuration file on the Exceed X server command line.

Using Xconfig

For more information about Xconfig menus, see Exceed Help.

Use Xconfig to configure Exceed settings. To change settings, click the appropriate category in the Xconfig main window, or on the Settings menu. The status bar at the bottom of the window indicates the various settings that you can configure with each application.



The Xconfig window consists of left and right panes. The left pane has the following menu boxes that contain links for right pane views and for performing various actions. The window can be resized. If you exit Xconfig and start it again, the size of your previous window is restored.

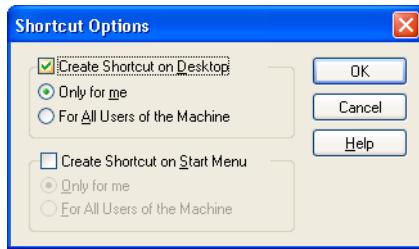
Note: You can resize (by minimizing) the Xconfig window to the extent that only the right pane is visible.

Menu Boxes

Xconfig This menu box is available for Category View and Classic View.

Click links that:

- toggle the right pane view of icons for configuration pages or configuration categories
- launch a new instance of Exceed using the current settings
- create shortcuts on the desktop and the Start menu



- launch Exceed Help and display the Xconfig topic

Quick Links This menu box is available for Classic View or Category View. Click hypertext links that:

- open a dialog for changing the Xconfig password
- display the Troubleshooting page

Common Actions This menu box is available when viewing configuration pages for categories and tasks. Click links that:

- validate and apply changes to settings for the displayed category or configuration page
- discard configuration changes and exit the application
- restore default settings (the settings in Exceed.xcfg)
- launch Exceed Help and display the configuration topic

Switch Screens This menu box is available for the Display And Video category as well as Screen Definition and Video pages. Click hypertext links to display a settings page for each screen. To select and configure multiple screens, press and hold Ctrl while clicking each screen link. The right pane tab displays a combination screen page according to your selection.

Add Or Remove Screens This menu box is available for the Display And Video category as well as Screen Definition and Video pages. Click hypertext links that:

- add screens (up to 8, the initial screen being screen 0)
- remove the highest numbered screen (except for screen 0)

Applying or Discarding Changes and Restoring Defaults

In the Common Actions menu box in Xconfig, click Validate And Apply Changes to apply your selections. Click Restore To Default Settings to restore the original settings for the Xconfig configuration file (`Exceed.xcfg` by default). Click Discard Changes to discard configuration changes and return to Category View or Classic View.

Saving Changes and Creating Configuration Files

All validated and applied changes are saved to the current configuration file. To save the configuration under a new file name, click Save As. To open another configuration file, click Open on the File menu.

Xconfig Password

The Xconfig password protects access to the entire Xconfig application. Depending on how Exceed was installed on your computer, an Xconfig password may have been specified during setup. Access to Xconfig depends on the following installation scenarios:

- You installed Exceed, but there is an Xconfig password—You can open the Xconfig window only after you type the correct password. The Xconfig password protects access to the entire Xconfig application.

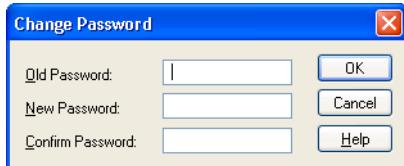
Note: The password cannot be edited on the Security page in Xconfig. To edit the Xconfig password, open Xconfig, and click Change My Password in the Quick Links menu box. The Change Password dialog box opens.

- A system administrator installed Exceed, or modified the setup of Exceed with Sconfig—A system administrator may have pre-configured Xconfig for optimal performance and password-protected specific Xconfig settings against accidental changes. If so, you cannot access the System Administration page. Only the system administrator can access settings protected by the System Administration password.

To change the Extend password, see “Modifying Extend Settings” on page 162.

To change your Xconfig password:

- 1 In the Xconfig Quick Links menu box, click Change My Password. The Change Password dialog box opens.



- 2 Type the current (old) password, type a new password, and then confirm the new password by retyping it.
- 3 Click OK.

Configuration Files

The default configuration file is Exceed.xcfg. This configuration file is loaded each time you start Xconfig; however, you can create multiple configuration files so that you do not have to continually change specific settings that you use regularly. The File menu options in Xconfig let you save and open configuration files.

External Access

There are many ways to propagate configuration changes, either through the distribution of the configuration file, or by programmatically changing the configuration by using a script. A disadvantage of distributing the configuration file is that it is effective only if recipients require the same configuration. If the configuration file is created or changed dynamically based on special requirements or characteristics of the receiver, the programmatic approach is the better solution.

Since Xconfig files (*.xcfg) are stored in XML format, administrators and users can modify their settings by using any XML editor. Administrators can programmatically propagate changes to multiple .xcfg files by means of scripts or programs instead of accessing each configuration with Xconfig.

Changing Xconfig Settings

You can change Xconfig settings to customize Exceed in a number of ways. You can customize settings to:

- optimize the X application on your video display
- match its color specifications to your computer settings
- set a preferred X client starting method
- display frequently used fonts
- use a computer key to transmit any X Window keystroke or string of characters

After modifying the settings in the configuration pages, click Validate And Apply Changes in the Common Actions menu box.

Updating and Reloading a Database

To reload a database used by Exceed:

- 1 Update the database file (RGB, font, keyboard, access control lists) in Xconfig.
- 2 Start Exceed.
- 3 On the Exceed menu, select Tools, select Reload Database, and then click the database you want to reload.

Depending on how you have configured the toolbar, you may also be able to use the following buttons to reload the databases:

- Reload RGB Database
- Reload Font Database
- Reload Keyboard File
- Reload Access Control Lists

These actions reload the specified database file and implement any changes immediately. If for any reason Exceed cannot reload the database, the system beeps, and the old copy of the database is preserved.

Command Line Override

Using the command line flag `-c`, you can override Xconfig options. Flags are Boolean, strings, or integers. To determine the value for an option, specify the settings you want in Xconfig and then view `Exceed.xcfg` using a text editor.

For example, to disable the warning that is displayed when Exceed closes, use the following:

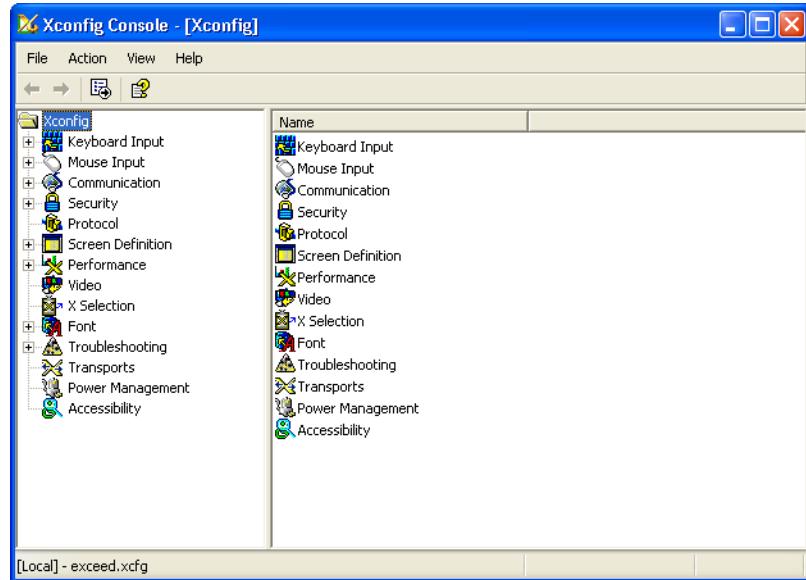
```
exceed -c CommonSettings.CloseWarn=0
```

To force TrueColor and use `custom.txt` for your color lookup table, use the following:

```
exceed -c Video.szRgbFile=custom.txt  
-c Screens.Screen0.ServerVisual=4
```

Xconfig Console

Xconfig Console is a Microsoft Management Console snap-in for Windows 2000/XP. It has the same functionality as Xconfig, but with more administrative options.



Remote Configuration

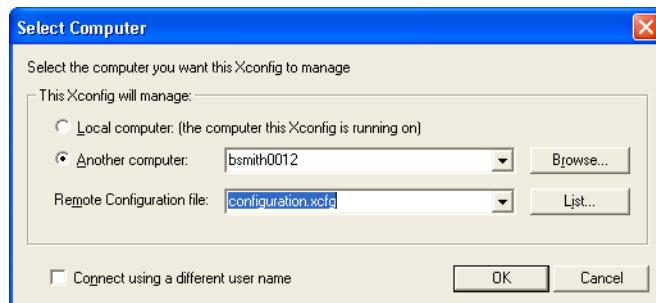
Use Xconfig Console to remotely configure computers that have the Xconfig Console component installed. If you are using Microsoft Vista or later, it is recommended that you use a domain environment. Vista and later machines must be members of a domain to connect to remote machines using Microsoft Management Console.

Note: If you have Windows Firewall enabled on Windows Vista and later systems, you should enable the File and Printer Sharing firewall exception. If you are using Windows XP or 2003, you must grant access to Xconfig Console for remote configuration on the target system. To do this, you must manually add exceptions for TCP port 135 in your Windows Firewall Settings. For more information, refer to Microsoft documentation.

To connect to the remote computer:

- 1 On the Start menu, navigate to the Open Text Exceed program group, point to Exceed Tools, and then click Xconfig Console.
- 2 In the left pane of Xconfig Console, right-click Xconfig and select Connect To Another Computer.

- 3 In the Select Computer dialog box, specify connection information.



Log in to the remote computer using your current account and password, or select Connect Using A Different User Name and specify a user name, password, and domain.

Note: In Windows XP and Vista, if the network access policy "Sharing and security model for local accounts" is set to "Guest only" (the default), then the local account login is authenticated to the guest account on the remote computer, and the Xconfig Console remote setting is denied in most cases.

Xconfig Console remote settings should function properly if Windows XP was upgraded from Windows NT, or if you set the network access policy to "Classic". There is no restriction for remote Windows XP systems on a domain.

Remote Xfonts Configuration

For more information about Xfonts, see "Font Management" on page 183.

Using remote configuration, users can configure Xfonts on another computer that is running Xconfig Console. With Xconfig Console in remote mode on the remote computer, launch Xfonts in the same way as you would locally, and then configure the remote font database file.

Note: Remote configuration of Xfonts is limited. Some functions, such as adding and viewing fonts, are not available.

Comparing Configuration Settings

Users can compare current configuration settings with a local configuration file. The Compare command on the Xconfig Console Action menu lets you locate and select another configuration file to compare with the current file.

For example, the current file might contain the original default settings. This is useful for tracing modifications made in the current session and for troubleshooting the settings in local or remote configuration files.

Gnome Compliance of Native Window Manager

Using native window manager with GNOME desktops over a slow network shortens the response times.

The native window manager is integrated with the GNOME desktop. The workspaces on the Exceed Tools menu and toolbar are associated with the icons on the Desk Guide and GNOME page.

To use the native window manager, open Xconfig or Xconfig Console, set the window mode to Multiple, and then select Native as the Window manager.

Note: For GNOME sessions using EsounD, you need to grant access to port 16001 in the Windows Firewall Settings. For Windows Vista and later, you must disable EsounD on the host or install an EsounD server from a third party provider. For detailed information on this issue, refer to the Release Notes.



Mouse, Keyboard and Other Input Devices

Use this Xconfig category to configure mouse and keyboard settings. If you are running a Chinese, Japanese, and Korean (CJK) Windows operating system (earlier than Vista) or Windows XP (provided 1 Microsoft IME is installed and enabled), then this category includes a settings page for CJK input. This category is always included with Vista and later systems.

Keyboard Input Settings

Use the Keyboard Input page to control Exceed settings for your keyboard. Keyboard files are provided; they contain keyboard layout and symbol mappings. You can create an entire custom keyboard manually, but it is easier to customize an existing file to suit your needs. You can also configure the keyboard file for the primary and alternate Exceed keyboards.

For detailed information about the user interface and how to access it, see Exceed Help.

You can use the Keyboard Input page to:

- customize the current keyboard file
- select an alternate keyboard file
- map Shift and Alt keys for Exceed

Selecting a Keyboard File

To select a primary keyboard file:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 Select a keyboard file in the Primary list or click Browse to select a file from another directory.
- 3 Click OK.

Xconfig also lets you choose an alternate keyboard to your primary keyboard. Select and set it (as above). To switch to the alternate keyboard, select Switch To Alternate Keyboard on the Exceed Tools menu. You can also add a keyboard-switching icon to the Exceed toolbar. For more information on customizing the Exceed toolbar, see Exceed Help.

By customizing your keyboard file, you can associate keys with X keysyms and compose key sequences, and you can redefine keys.

To customize the keyboard:

- 1 Save a copy of the original keyboard file. This is a precaution in case you change a setting and it does not work or you do not want the new settings.

Note: By default, keyboard files are stored in the *User* directory and have a *.kbf* extension.

- 2 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.



- 3 Select the keyboard file you want to use. For both types of keyboards (Primary and Alternate), you can select a file from the corresponding list.
 - Primary displays the name of the current primary keyboard file. The keyboard file contains the appropriate keyboard layout and alphabet for the language selected.
 - Alternate displays the name of the current alternate keyboard file.

4 Do one of the following:

- To change the individual settings of either the Primary or Alternate keyboards, click Edit.

Note: If you are not using one of the supported keyboards or if you are using a keyboard without a separate cursor keypad and 12 function keys, you can create a custom keyboard file to interact with Exceed.

- To change the individual settings of a keyboard file not listed in the lists, Browse to the file, and then click Edit.
- 5 To allow users to modify keyboard files from their computers, select Allow Client To Modify Keyboard Mapping.
- 6 For keyboards containing two Alt keys, you can select options to assign the left and right keys. For keyboards containing two Windows keys, you can select options to assign the left and right keys.

To direct Alt key sequences toward Microsoft Windows or X Windows clients, select an option from the Alt Key drop-down list.

To direct Windows key sequences to X Windows clients, select an option from the Windows Key drop-down list. You can have each Windows key control a different function.

Note: The Windows key does not exist in the default keyboard file. To map a Windows key, you must add it manually. For more information, see Exceed Help.

- 7 To define how the Shift keys on the keyboard are interpreted by Exceed, select an option from the Shift Key drop-down list.

Map Both Left And Right causes the left and right Shift keys to be treated and interpreted separately. When you select Map Left As Right, any time you press a Shift key on your keyboard, it is treated as a right Shift. If you select Map Right As Left, any time you press a Shift key on your keyboard, it is treated as a left Shift.

About XKeys

XKeys simplifies the process of mapping keyboard files. It is similar to other key-mapping utilities found in Exceed, but it is specifically designed to communicate with an X protocol host. Exceed supplies a number of customizable keyboard files.

To open XKeys, click Mouse, Keyboard And Other Input Devices in Xconfig, select a .kbf file in the Keyboard Mapping area, and then click Edit (adjacent to either the Primary or Alternate box).



To load a different keyboard file, click Open on the XKeys File menu to locate and select the file. Before modifying a file in XKeys, consider what it is that you want to modify.

Note: Make a backup of the original keyboard file before customizing it. After loading the file into XKeys, click Save As from the File menu and specify another file name. This ensures that the original file is intact if you need to revert to it.

The XKeys View menu lets you toggle between the following:

Mapping Mode—Lets you customize a keyboard file and associate X Keysyms to keys. You can also create compose key sequences and build macros. The image on the previous page shows XKeys in Mapping Mode.

Layout Mode—Lets you customize a keyboard file by adding or repositioning physical keys. You can create a new layout, or you can modify an existing one.

After selecting the appropriate display mode, you can begin to modify the keyboard file to suit your requirements. You can accommodate non-standard keyboards by manually editing the keyboard text file or by using XKeys.

The following changes are transparent to the X protocol:

- modifying any basic keyboard layouts to send an X Window-supported character or string of characters using user-defined keystrokes
- defining Compose Key sequences to simplify entering accented keys
- customizing keyboard and mouse options and preferences in the Xconfig Input Settings dialog box
- customizing or creating new keyboard layouts using XKeys by clicking Edit in the Input Settings dialog box

PrintScrn Key Support

To map the PrintScrn key, edit the keyboard with Xconfig to add this key to the layout. After the key has been added, you can switch into Mapping Mode and map the key to an X Keysym.

Note:

- Before customizing a keyboard file, backup the original. To do this, load the keyboard file into XKeys and click Save As from the File menu and type a new name. This preserves the original file in case you need to revert to it later.
- Every key you want to use must be defined in your keyboard file. To define a key, describe the symbol(s) it can generate in the No Shift, Shift, Mode Switch, and Shift Mode Switch states. The key definition is represented by a keysym (key symbol) hexadecimal value corresponding to the symbol generated in a specific state. An undefined key symbol does not function in any X application.

Modifying a Keyboard File

In most cases, you can customize your keyboard by modifying an existing file. Although you can create a totally new keyboard file, it is recommended that you modify an existing keyboard file whenever possible.

Note: Make a backup of the original keyboard file before you customize it. After you load the file into XKeys, click Save As from the File menu and specify another file name. This ensures that the original file is intact if you need to revert to it.

The following list describes various scenarios for modifying a keyboard file:

See "Mapping a New Keysym to an Existing Key" on page 129.

See "Mapping a Macro to an Existing Key" on page 132.

See "Creating Compose-Key Sequences" on page 133.

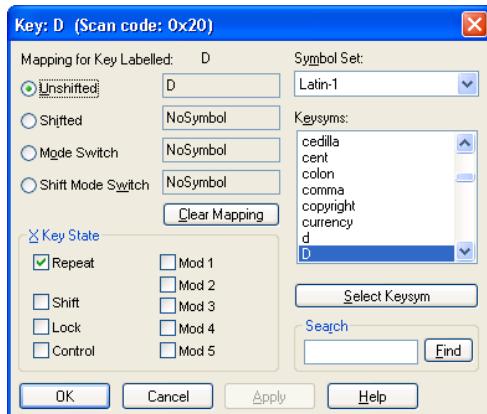
See "Managing Keysyms and Keysym Sets" on page 135.

See "Adding a Physical Key" on page 136.

- You want to make a key on your keyboard generate a particular X Keysym—To generate an X Keysym, map the Keysym to a key on your keyboard.
- You want a single key on your computer to send multiple Keysyms to the remote host—To forward multiple Keysyms, create a macro or a string of symbols, and map it to a key.
- You need to generate a special Keysym that consists of an unknown accented character—To generate a special Keysym, you need to define a compose-key sequence to forward that special Keysym to the remote host.
- Your keyboard does not have a separate cursor keypad—To resolve this, map existing keys to generate the symbols on a cursor keypad.
- You want to create a keyboard file for mathematical symbols or for other Keysyms that are not available—The Keysym File Editor is a powerful tool for managing Keysyms and Keysym Sets. This editor will guide you as you add custom Keysyms and create new Keysym Sets.
- You want to create a keyboard file for mathematical symbols or for an alphabet (such as Arabic, Cyrillic, Greek, and Hebrew)—Create a new keyboard file using the New command on the XKeys File menu and map the symbol to each key.
- You want to make use of extra keys on your non-standard physical keyboard to send Keysyms to a remote host—To add a physical key to a keyboard file, you must change the layout of the keys.

Mapping a New Keysym to an Existing Key

You can change the mapping key on your keyboard to generate a different Keysym. Click Mapping on the XKeys Edit menu (in Mapping Mode only) to display a mapping dialog box.



Note: You cannot map a Keysym to a non-standard key unless you have included it by changing the layout of the keyboard file. For more information, see “Adding a Physical Key” on page 136.

For example, you can change the current Keysym mapping of the Backspace key to any of the following:

- the delete Keysym
- a special character (such as æ or þ) defined in a compose-key sequence

Note: You can map a compose-key sequence in the X Compose Mapping dialog box. It follows the Build Compose Sequence dialog box when you click Next. The X Compose Mapping dialog box has the same functionality as the XKeys mapping dialog box.

To map a new Keysym:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 Select a primary or alternate keyboard file, and click Edit.
- 3 Select the key that you want to map by clicking the key in the XKeys window (Mapping Mode) or by pressing the corresponding key on your keyboard. You can view the current mappings in the Mapping For Key Labelled: *Keysym* group box.
- 4 Select Mapping on the Edit menu. An XKeys mapping dialog box opens. You can view the current mappings for the key you specified in the Mapping For Key Labelled: *Keysym* group box.
- 5 Click any of the following states: Unshifted, Shifted, Mode Switch, Shift Mode Switch. To delete the current mapping for this state, click Clear Mapping.
- 6 Select a Keysym Set from the Symbol Set list. Each Keysym Set contains a different list of Keysyms, which are displayed in the Keysyms list.

Note: If you do not know which Keysym Set a Keysym belongs to, you can search for it by entering the Keysym in the Search box and clicking Find. XKeys selects the appropriate Keysym Set in the Symbol Set list, and then highlights the closest match in the Keysyms list. If the first Keysym matched is not correct, click Find until you find the symbol.

You can also drag and drop a key from the Keysyms list to the corresponding state boxes.

- 7 Select the Keysym that you want to map to this key in the Keysyms list and click Select Keysym. The mapping is changed for the state you selected in step 5.
- 8 Select a modifier state in the X Key States area. You can assign any combination of modifiers. If you would like the key to auto-repeat when held down, enable the Repeat check box.

Note: Select only one Mod key.

- 9 To map different Keysyms to the remaining states, repeat steps 5 – 8.
- 10 Click OK. The Current X Mapping panel in the XKeys window now displays the new mappings.

Note: To change the keycap text on a key, select Layout Mode from the View menu. Once in Layout mode, press the key on your physical keyboard to select it and type the keycap text in the abbreviation box.

Deleting a Keysym Mapped to a Key

To delete a Keysym mapped to a key:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 Select a primary or alternate keyboard file, and click Edit.
- 3 Select the key that you want to map by clicking the key in the XKeys window (Mapping Mode) or pressing the corresponding key on your keyboard. You can view the current mappings in the Mapping For Key Labelled: *Keysym* area.
- 4 Click Mapping on the Edit menu to open a mapping dialog box. You can view the current mappings for the key you specified in the Mapping For Key Labelled: *Keysym* group box.
- 5 Click any of the following states: Unshifted, Shifted, Mode Switch, Shift Mode Switch. To delete the current mapping for this state, click Clear Mapping.
- 6 To delete the mapping for another state, repeat the previous step.

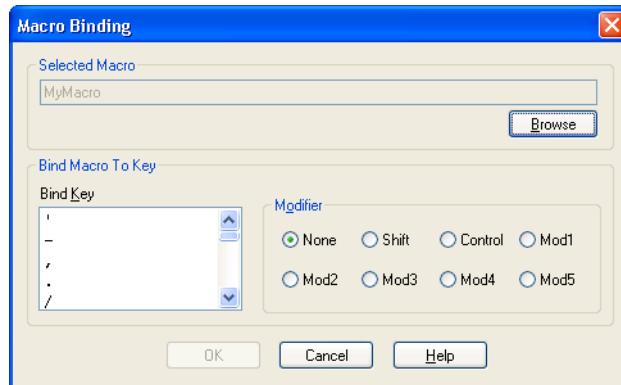
Mapping a Macro to an Existing Key

Use the Macros dialog box to add, edit, and delete a macro. You can display the Macros dialog box by selecting Macro on the XKeys Edit menu.

Note: You cannot map a Keysym to a non-standard key unless you have included the key by changing the layout of the keyboard file. For more information, see “Adding a Physical Key” on page 136.

To map a macro:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 Select a primary or alternate keyboard file, and click Edit.
- 3 On the XKeys Edit menu, click Macros.
- 4 In the Macros dialog box, click Add. The Macro Binding dialog box opens.



- 5 Click Browse. The Macro Selector dialog box opens.
- 6 Click Add. The New Macro Properties dialog box opens.
- 7 Specify a macro Name and Description.
- 8 Click Start Record and type the keys and key combinations that you want to be a part of this macro.

- 9 Click Stop Record to end recording. Click OK.
- 10 In the Macro Selector dialog box, click OK.
- 11 In the Macro Binding dialog box, select a key from the Bind Key list to attach the macro to, including any modifiers from the Modifier area.
- 12 Click OK. The macro is added to the list in the Macros dialog box.

Macro Events

A macro recorded in the New Macro Properties dialog box displays an event list representing actual keystrokes: the name of the key pressed and the physical action of either pressing or releasing the key.

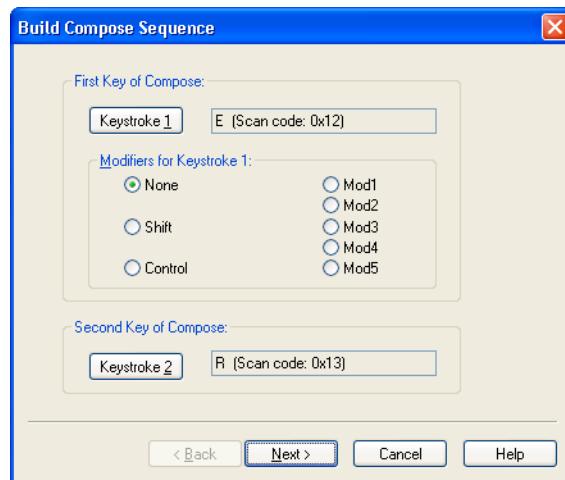
Creating Compose-Key Sequences

Create compose-key sequences to access additional symbols by typing two keystrokes. For example, Keystroke 1 + Keystroke 2 or Composing Key + Keystroke 2.

To define the compose-key sequence:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 Select a primary or alternate keyboard file, and click Edit.
- 3 On the XKeys Edit menu, select Compose Sequences. The Compose Sequence dialog box opens.

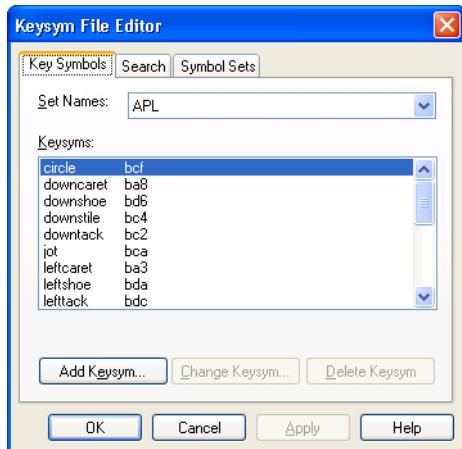
- 4 Click Add to define a new compose-key sequence. The Build Compose Sequence dialog box opens.



- 5 Click Keystroke 1, and then press a key on your keyboard to use as the composing key.
- 6 Choose a modifier from the Modifiers For Keystroke 1 group box.
- 7 Click Keystroke 2, and then press a key on your keyboard.
- 8 If you want to map this compose sequence, click Next. The X Compose Mapping dialog box opens. It is a similar to the mapping dialog box that appears when you click Mapping on the Edit menu.
- 9 Click Finish.

Managing Keysyms and Keysym Sets

The Keysym File Editor is a powerful tool for managing custom Keysyms and Keysym Sets. To open the Keysym File Editor dialog box, click Keysym on the XKeys Edit menu.

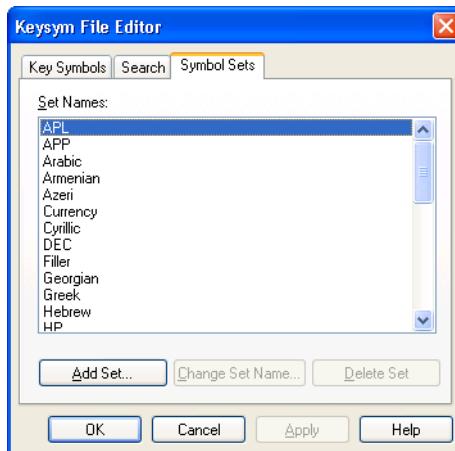


To add custom Keysyms to an existing Keysym Set:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 Select a primary or alternate keyboard file, and click Edit.
- 3 On the XKeys Edit menu, click Keysyms. The Keysym File Editor dialog box opens.
- 4 On the Key Symbols page, select the Set Name of the Keysym Set into which you want to place the custom symbol.
- 5 Click Add Keysym. The Add KeySym dialog box opens.
- 6 Type a KeySym name and a hexadecimal value.
- 7 Click OK.

To add or create a new Keysym set:

- 1 In the Keysym File Editor dialog box, click the Symbol Sets tab.



- 2 On the Symbol Sets page, click Add Set. The Add Set Name dialog box opens.
- 3 Type a name in the New Set Name box.
- 4 Click OK. The name appears in the list on the Key Symbols page; the remaining boxes appear empty, indicating that this is a new Keysym set.
- 5 Add a custom Keysym by following the previous procedure.

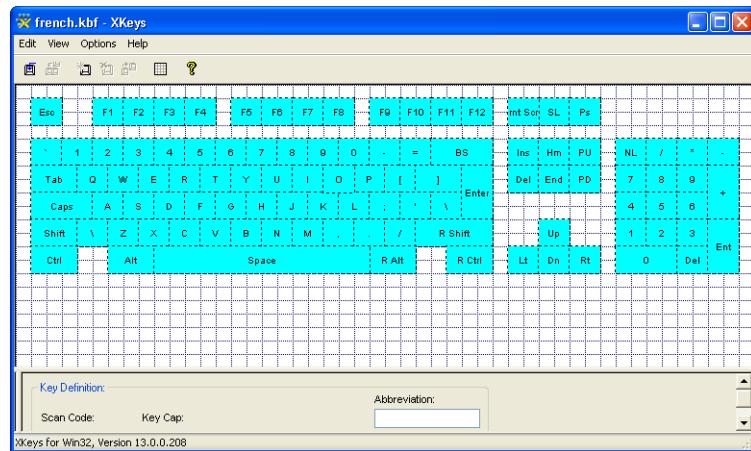
Adding a Physical Key

Standard 101-key and 102-key layouts are found in the *Exceed User* directory. If you are using a non-standard keyboard, you need to add keys. You can perform this task in two ways:

- Start with a default keyboard and add the extra keys.
- Start from scratch and build a completely new layout.

To add a new physical key to an existing keyboard file:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 Select a primary or alternate keyboard file, and click Edit.
- 3 On the XKeys View menu, click Layout Mode.



- 4 Press a key on your keyboard that is currently not defined in your keyboard file. Once the key is placed in the XKeys window, move and reshape it to match your physical keyboard layout.
- 5 In the Abbreviation box, type the key cap you wish XKeys to display on the key. The key is added to the keyboard layout. You can map X symbols to the new key.

To create a new keyboard layout:

Note: Create a completely new keyboard layout only if your keyboard is substantially different than the supplied layouts.

- 1 In Mapping Mode, click New on the XKeys File menu. Do not use an existing keyboard layout when prompted. A blank XKeys screen displays.
- 2 On the XKeys View menu, select Layout Mode.
- 3 One at a time, press each key on your keyboard. XKeys places each key on the supplied grid below the mouse cursor. As keys are added, move and reshape the key to match the physical layout of your keyboard. Keys may be moved using standard drag and drop methods.
- 4 To modify the text displayed on a key cap, replace the text in the Abbreviation box. This is useful when Windows supplies a long key description.
- 5 You can now map X Keysym values to each physical key.

Deleting a Physical Key

You can delete keys in Layout mode. Highlight a key and select Delete from the XKeys Edit menu. A message box appears to confirm the deletion.

Note: You can also delete keys in Layout mode by moving the mouse pointer over the key and then clicking the right mouse button.

Mouse Input Settings

For detailed information about the user interface and how to access it, see Exceed Help.

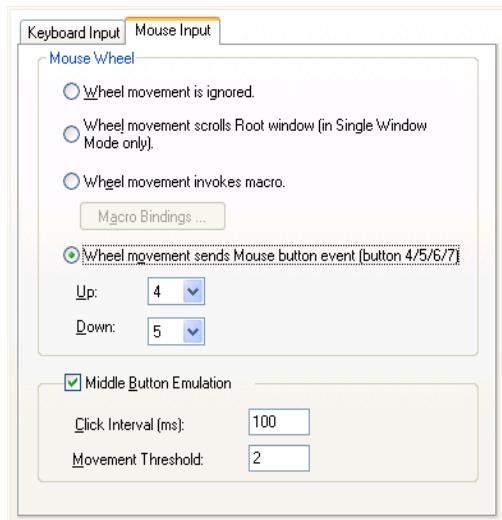
Use the Mouse Input page to define mouse settings. You can do the following:

- configure a middle button
- configure mouse wheel movement
- manage macros and map them to the mouse wheel

Customizing Mouse Settings

To customize mouse settings:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 On the Mouse Input tab, select an option for mouse wheel action:
 - Wheel Movement Is Ignored—Select this option to invalidate all mouse wheel input.
 - Wheel Movement Scrolls Root Windows (In Single Window Mode Only)—Select this option to enable scrolling in the main root window only.
 - Wheel Movement Invokes Macro—Select this option to map the wheel movement to a macro. This is the only option that lets you scroll in multiple window mode. For instructions on how to map to a macro, see “Mapping a Macro to the Mouse Wheel” on page 140.
 - Wheel Movement Sends Mouse Button Event (Button 4/5/6/7)—Use button 4/5/6/7 events to scroll the windows of existing X applications. ButtonPress and ButtonRelease events are sent according to the mouse wheel motion (up/down).



- 3 Make your two-button mouse into a three-button mouse for X client windows using the following options:

You can paste data (for PRIMARY X selection) into an X client window by clicking the middle mouse button. For more information, see "Copying and Pasting Data" on page 35.

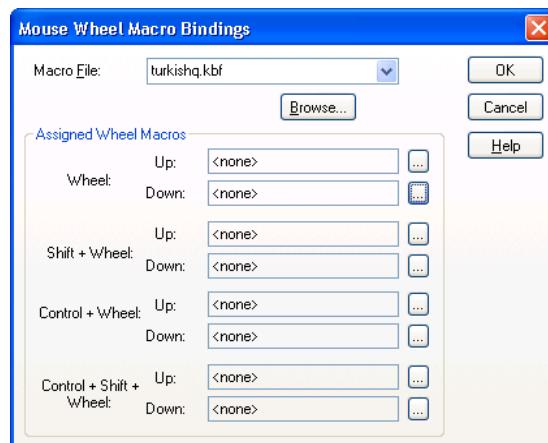
- Middle Button Emulation enables the feature.
- Click Interval indicates the time lapse between clicking the left and right mouse buttons for middle-button emulation to occur.
- Movement Threshold indicates how much movement is allowed when you click the left and right mouse buttons. If you stay within the specified number of pixels, the system understands you are indicating middle button emulation.

Mapping a Macro to the Mouse Wheel

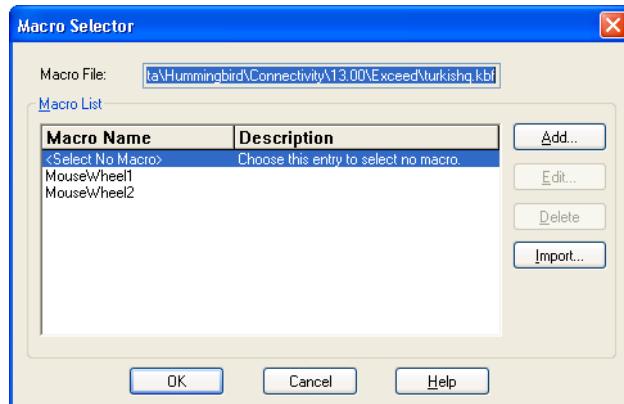
X Windows does not recognize the mouse wheel. Use the Mouse Input page to map the mouse wheel for specific X applications.

To map a macro to the mouse wheel:

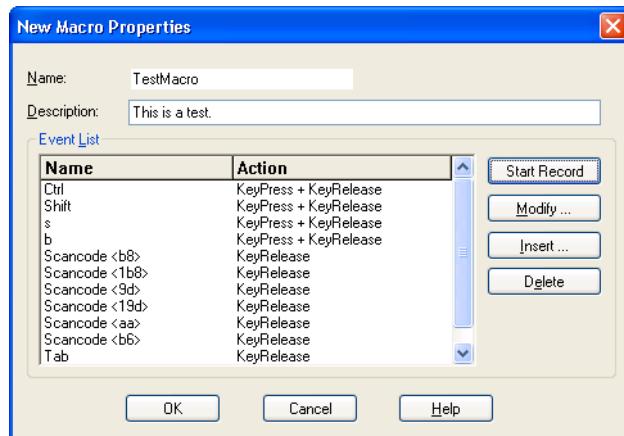
- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 On the Mouse Input page, select Wheel Movement Invokes Macro, and then click Macro Bindings. The Mouse Wheel Macro Bindings dialog box opens.



- 3 In the Assigned Wheel Macros area, select a mouse action combination, and then click the adjacent browse button. The Macro Selector dialog box opens.



- 4 Click Add. The New Macro Properties dialog box opens.



- 5 In the Name and Description boxes, type the function and brief description. For example, type `vi_scroll_up` and `Scroll Up`.
- 6 After you have decided on the keys you want to map to the mouse wheel, in the Event List area, click Start Record.

- 7 Type the key sequence on the keyboard. When you are finished, the application stops recording automatically. Click OK to return to the Macro Selector dialog box.
- 8 Select your new macro from the list, and then click OK.
- 9 The new macro is associated with the wheel action you selected. Click OK to return to the Mouse Input page.

Middle Button Capabilities for a Two-Button Mouse

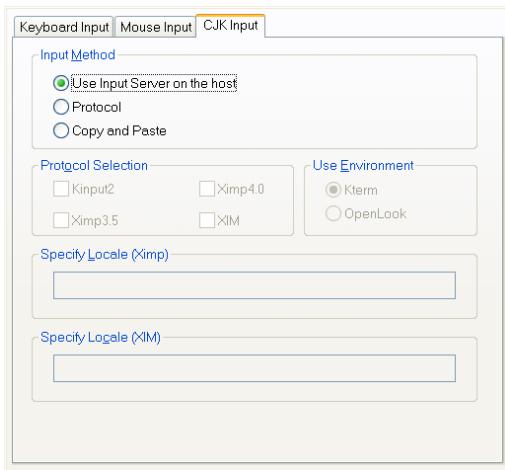
To create a virtual middle button for a two-button mouse:

- 1 In Xconfig, click Mouse, Keyboard And Other Input Devices in Category View.
- 2 On the Mouse Input page, select Middle Button Emulation.
- 3 Type a click interval. The larger the click interval, the longer the system waits before executing a command because it is trying to determine if there is a second button click.
- 4 Type a movement threshold. This is the number of pixels the mouse is allowed to move during the clicks and still be considered a middle-button emulation.
- 5 In the Common Actions menu, click Validate And Apply Changes.

Click both left and right mouse buttons simultaneously to emulate a middle mouse button.

Input Methods for Chinese, Japanese, and Korean

The CJK Input icon appears in Xconfig only if you are running a CJK Windows operating system or Windows 2000/XP (provided Microsoft IME is installed and enabled).



Exceed supports both Simplified and Traditional Chinese. To enter CJK text in an X client, you need to run an Input Method (IM) server.

Note: The CJK Input icon appears in Xconfig only if you are running a CJK Windows operating system or supported Microsoft Windows platforms (provided Microsoft IME is installed and enabled).

You can configure Exceed to use either an external X client as the IM server or an IM server built into the X server. To use the Microsoft Windows Input Method Editor (IME) to enter text in an X client, you must configure Exceed to use an IM server built into the X server.

You can select one of the following input methods to enter CJK text:

- Select Use Input Server On The Host to use an input method server X client.
- Select Protocol to use an Input Method Server built into the Exceed X server.
- Select Copy And Paste to use copy and paste commands to input CJK text.

Using an Input Method Server X Client

For information on the remote Input Method Server, refer to your host documentation.

Use the Use Input Method Server On The Host option to enter CJK text using whatever mechanism the input method (IM) server X client supports. Select this option if you are using an external IM server X client. This means the Exceed X server will not support internal CJK input methods. This option does not permit the use of the Microsoft Windows IME to enter CJK text.

The available IM Server X clients vary by host type. The following table shows the IM Servers typically available on specific host types:

Host Type	IM Server
HP	xkim/xjim/xsim/stim
Solaris	htt
Digital	dxhangulim/dxhanyuim/dxhaziim/dxjim

Using an Input Method Server Built into the Exceed X Server

Select the Protocol option. The Exceed X server internally manages an Input Method Server and uses the Microsoft Windows IME to enter CJK text. When you enter text, Exceed uses one of the selected protocols to pass text to the X client.

Exceed registers and manages an Input Method Server for each protocol selected in the Protocol Selection area. This means that you can enable multiple protocols, and each X client can use the protocol of its choice. We recommend that you enable all available protocols.

Specifying Locale (Ximp/XIM)—Exceed supports most of the standard encoding names. In most cases, you do not have to specify the encoding name. However, if your X clients are running in a non-standard encoding environment, enter the appropriate locale name.

Using Copy and Paste to Input CJK Text

Select the Copy And Paste option. Exceed does not register an Input Method (IM) Server when this option is selected; it uses the Microsoft Windows IME to enter CJK text. Rather than using an IM Server to pass text to the X client, it copies the text into the X selection and tries to paste the X selection CJK text into the X client.

Exceed supports two copy and paste input methods. One is designed for Kterm and the other for OpenLook. Select the copy and paste method you want to use in the Use Environment area. If the CJK text is not automatically pasted into your X client, you need to use the X client Paste operation to paste the CJK text.

Special Considerations for Traditional Chinese

Because there is no standard encoding in Traditional Chinese environments, Exceed can support only one encoding name at a time. By default, Exceed supports the HP-BIG5 (HP Traditional Chinese Environment) encoding. If you want to use the BIG5-0 (Digital Traditional Chinese Environment) encoding, you need to make changes to the Exceed initialization file and the `xlc_locale` file.

To input Traditional Chinese using the BIG5-0 (Digital Traditional Chinese Environment) encoding:

- 1 Open `Exceed.xcfg` in a text editor. Near the end of the file, locate the following XML tag just after the `<Undocumented>` tag:

```
<CJK_BIG5EncodingName>HP-BIG5</CJK_BIG5EncodingName>
```

This tag lets you input Traditional Chinese in an HP environment. Modify the tag to the following and save the file:

```
<CJK_BIG5EncodingName>BIG5-0</CJK_BIG5EncodingName>
```

- 2 Open the `xlc_locale` file on your computer.
- 3 Under the heading `fs1`, modify as follows:
 - `# used for HP-UX`
 - `# charset HP-BIG5:GLGR`
 - `# used for Digital UNIX`
 - `charset BIG5-0:GLGR`

4 Under the heading `cs1`, modify as follows:

- `# used for HP-UX`
- `# ct_encoding`
`HP-BIG5:GLGR:\x1b\x25\x2f\x30\x80\x8aHP-BIG5\x02`
- `# used for Digital UNIX`
- `ct_encoding`
`BIG5-0:GLGR:\x1b\x25\x2f\x32\x80\x89BIG5-0\x02`

5 Restart Exceed if it is running.

To view the Traditional Chinese HP Common Desktop environment:

1 Download the following Chinese Big5 fonts:

- `uwb5-16m.bdf.gz`
- `eb5-24f.bdf.gz`

You can also search for the fonts on the Internet (for example, by using an FTP search engine).

2 Decompress the GZIP compressed fonts.

3 In Xconfig Font Settings, select Compile Fonts in the Font Settings dialog box and compile the downloaded `.bdf` fonts to the `.fon` format.

4 Copy `uwb5-16m.fon` and `eb5-24f.fon` to the `Home\font\chinese` directory.

5 Import the font aliases:

- a) Select Import Alias in the Font Settings dialog box.
- b) Select `chinese.ali` in the Exceed `User` directory.
- c) For the Limit Import To Selected Font Directory option, select `Home\font\chinese`.
- d) Click Import.

6 If Exceed is running, on the Exceed menu, select File, select Reload Database, and click Font.

To view the Traditional Chinese Digital Common Desktop environment:

- 1 Follow the steps in the previous procedure.
- 2 Create a new font subdirectory in the *Home\font* directory.
- 3 Download the following fonts from a Digital UNIX host that supports Traditional Chinese into the new font directory created in step 2:
 - adecw_hei_cns11643_16_16_75.pcf
 - adecw_screen_cns11643_16_18_75.pcf
 - adecw_screen_cns11643_24_24_75.pcf
 - jdecw_screen_decsuppl_8_18.pcf
 - jdecw_screen_decsuppl_12_24.pcf
- 4 In Xconfig Font Settings, select Compile Fonts in the Font Settings dialog box and compile the downloaded .pcf fonts to the .fon format.
- 5 Add the new font directory to the font database and move it to the top of the font database list using the Move Up button.
- 6 Import the font aliases. To import the font aliases:
 - a) Select Import Alias in the Font Settings dialog box.
 - b) Select the *dec_tw.ali* file in the Exceed *User* directory.
 - c) For the Limit Import To Selected Font Directory option, select the new subdirectory created in step 2 from the *Home\font* directory.
 - d) Click Import.
- 7 If Exceed is running, right-click Exceed on the Windows taskbar, select File, select Reload Database, and click Font.



Network and Communication

Use this Xconfig category to configure communication and transport settings.

Setting the Sequence of Events

The startup mode determines the sequence of events that occur when you start Exceed, including whether a host connection occurs automatically. There are two basic types of startup modes: Passive and XDMCP. The mode you use depends on your transport, host, and preferences.

Passive Mode If you intend to use TELNET, Xstart, Xsession, or a remote process to connect to a host and start an X client, you should select Passive from the Modes drop-down list. This startup mode lets you start Exceed without making any initial attempt to connect to a specific host.

XDMCP Modes The XDMCP (X Display Manager Control Protocol) modes let you automatically activate the XDM connection process. After you start Exceed and successfully log in to XDM, the clients listed in the XDM session script file start.

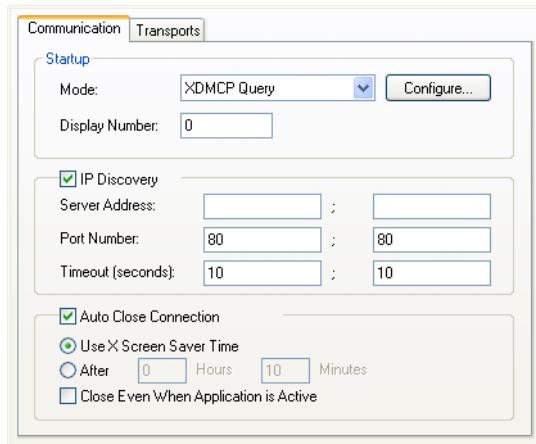
XDM lets you manage X displays. It allows for centralized control over the X environment and provides an added measure of security. XDM provides an X-based login function and generates authorization information that can be used by Exceed to control which users on which hosts may be given access to an Exceed X server display.

If you use an XDMCP startup mode, you do not need a separate startup application to start X clients (that is, Xstart, Xsession, or TELNET). However, you may use these applications to start additional X clients.

Communication Settings

Use the Communication page in Xconfig (accessible by clicking Network And Communication in Category View) to:

- select the startup mode used by Exceed and define all related settings
- configure XDM display, key, class, and other startup options
- specify external addresses for connecting through a virtual private network (VPN)
- automatically close the connection under certain conditions



For detailed information about the user interface and how to access it, see Exceed Help.

Startup

Mode—This drop-down list contains two basic categories of server startup modes: Passive and XDMCP (X Display Manager Control Protocol).

Passive mode starts the server without making an initial attempt to connect to a specific host. Passive mode lets you establish connections using TELNET, Xstart, or Xsession.

For more information about XDMCP modes, see pages 68 to 71.

Note: XDMCP modes are supported *only* under TCP/IP.

Configure—Opens the XDMCP Startup Modes dialog box where you can configure additional XDMCP settings.

Display Number—Specifies which port the server for new clients is monitoring. The default display number is 0.

IP Discovery

Use this area to specify addresses of remote servers running an IP address discovery service. Exceed queries these servers for an IP address so that the client can communicate with a remote host. Exceed translates the unique network IP address of the client computer (running Exceed) with the remote IP address.

For more details about IP Discovery functionality, see Exceed Help.

Optionally, type one or two IP addresses (separated by a semi-colon) in the Server Address box. Specify a port number and timeout interval (applicable to both addresses).

Auto Close Connection

For more details about Auto Close functionality, see Exceed Help.

This area contains options and settings that determine conditions under which Exceed terminates a connection.

About IP Discovery

This feature supports multiple connections involving a network address translation (NAT) device or virtual private network (VPN) software. Exceed ensures that X applications from remote hosts reach the client computer.

IPDisCov Daemon

IPDisCov is a daemon that runs on the remote UNIX or Windows host that is running X applications. By default, it listens on port 80 using HTTP. You can start IPDisCov on the UNIX host using the following command:

```
./IPDisCov -p listen_port_number
```

where *listen_port_number* is a port other than default 80. Use a browser to connect to the host and if the browser displays the host Internet Protocol (IP) address correctly, it means that the IPDisCov was started and is working.

Note: Only the root user has the authority to run the daemon on the UNIX host.

The environment variable DISPLAY tells the computer on which machine to display the X application.

Using IP Discovery

To use Exceed in XDMCP mode or to use Xstart to start an X application on a UNIX host, Exceed and Xstart must construct the DISPLAY environment variable for the X application to display on the client computer. However, there may be VPN software that does not register the host Internet Protocol (IP) address with the Windows system (to find out if this is so, use the DOS utility ipconfig to display the network settings). In this case, the only way for Exceed and Xstart to communicate with the remote host is by means of IP Discovery.

To use Exceed/Xstart where VPN software is present:

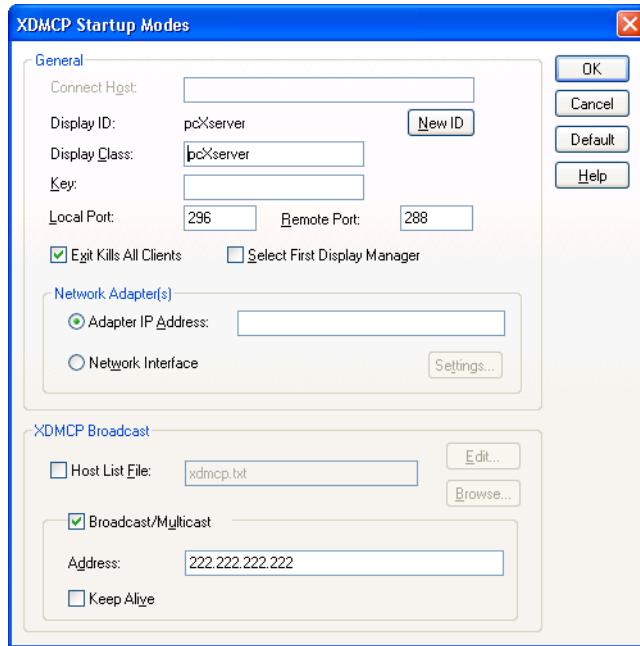
- 1 On the UNIX host, run `./IPDisCov -p listen_port_number`. If necessary, specify a port number other than default port 80.
- 2 Use a browser to connect to IPDisCov and verify that the browser displays the correct IP address.
- 3 In Xconfig, click Network And Communication in Category View.
- 4 On the Communication page, select IP Discovery. Type the Server Address (the IP address where IPDisCov is running) and type the Port Number which IPDisCov is monitoring (if it is not the default 80).

Note: You do not have to provide Server Address(es) at this stage. The Network Interfaces dialog box opens when Exceed or Xstart attempts to connect to the remote host. This gives you another opportunity to provide the IP discovery address(es).

- 5 Click Validate And Apply Changes on the Common Actions menu in Xconfig.

To use IP discovery with Exceed XDMCP startup modes:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 On the Communication page, select any XDMCP mode. Click Configure. The XDMCP Startup Modes dialog box opens.



- 3 In the Network Adapter(s) area, select Network Interface and click Settings. The Network Interfaces dialog box opens.
- 4 Look for an entry in the list with the interface name “From IP Discovery Server”. The entry indicates the IP address (provided by the IPDisCov daemon) that Exceed uses to determine the DISPLAY environment variable. Select the entry and click OK.
- 5 Click Validate And Apply Changes in the Common Actions menu box.

Note: If IP Discovery is enabled in Xconfig, you can select an interface name and IP address in the Network Interfaces dialog box that opens when Exceed connects to the remote host.

To use IP discovery with Xstart:

- 1 Open Xstart, and click Settings. The Xstart Settings dialog box opens.
- 2 Click the Network tab, select Interfaces, and then click Settings. The Network Interfaces dialog box opens.
- 3 There should be an entry in the list with the interface name “From IP Discovery Server”. The entry indicates the IP address (provided by the IPDisCov daemon) that Xstart uses to determine the DISPLAY environment variable. Select the entry and click OK.

Note: If IP Discovery is enabled in Xconfig, you can select an interface name and IP address in the Network Interfaces dialog box that opens when Exceed connects to the remote host.

Creating or Editing the Host List

The Host List file is a text file containing the names and Internet Protocol (IP) addresses of all hosts that receive the broadcast request when you start the server using the XDMCP Broadcast startup mode. This file lets you restrict access to your Exceed X server to specific hosts. By default, the host list is the `Xdmcp.txt` file in your Exceed *User* directory.

To create a new host list:

- 1 Open a text editor such as Notepad.
- 2 List the host names. Specify only one symbolic host name or constant address per line.
- 3 Save the file.

After you create a new file, you can use it in the XDMCP startup modes.

To add a host to the `xmcp.txt` file:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 Select XDMCP Broadcast from the Mode list.
- 3 Click Configure. The XDMCP Startup Modes dialog box opens.
- 4 Enable Host List File.

- 5 Click Edit to open `Xdmcp.txt` in a text editor.
- 6 To add to the list, type the name or Internet Protocol (IP) address of the host you want to add on a new line.
- 7 Save the file and exit Notepad.

Host List File Syntax

The Host List file is a text file containing the names and addresses of all hosts that receive broadcast requests. You can use the Host List File option (in the XDMCP Broadcast area of the XDMCP Startup Modes dialog box) to edit the file or enable/disable its use. The default file `Xdmcp.txt` is located in the Exceed *User* directory.

Text on any line following a number sign (#) is ignored. Completely blank lines and all carriage-control characters are also ignored. The format of information lines is as follows:

- Host names are not case-sensitive.
- The address is specified in Internet Protocol (IP) address notation.

Transports Settings

Use the Xconfig Transports page to change transport-related settings used by Exceed and local X clients. Select a transport interface from the Transport list.

Network Provider—Opens the Provider List dialog box where you can set the order of transport service providers and protocols. You can also view details of each provider or protocol.

Exceed Freedom Settings

Use this Xconfig page to establish connections to X clients with Exceed Freedom through Exceed Connection Server. This page is available only if you have installed Exceed Freedom.

Use Exceed Connection Server—Specifies whether to connect to X clients through Exceed Connection Server. If you enable this option, Exceed Freedom connects to hosts through Exceed Connection Server when you start Exceed.

Connection Information

This area contains connection settings.

Use Connection Document Settings—Specifies whether to use the selected connection document (.efcd file) to launch Exceed Freedom sessions.

Ask User For Connection Information—Specifies whether to prompt the user for connection information.

Connection Document

This area allows you to select a connection document (.efcd file) to launch Exceed Freedom sessions. Click **Edit** to modify connection document settings, or click **Browse** to select a connection document.

Warn on Direct Connection—Warns the user when a session launches using a direct connection through Exceed.

Chapter 5

Xconfig—Part 2

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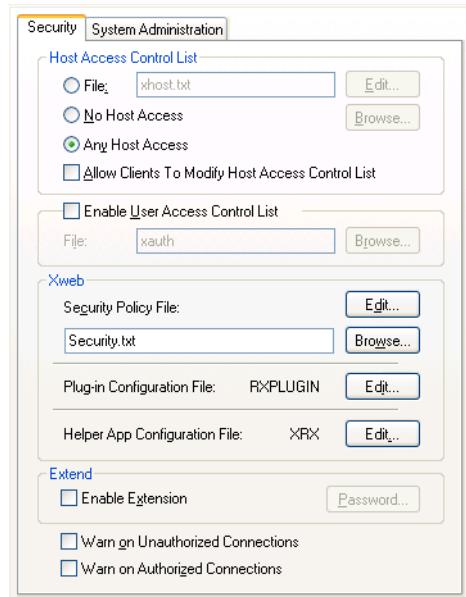
Security, Access Control, and System Administration

You can set security options to either restrict or allow access to specific features of the Exceed X server. You can also use the Security, Access Control, and System Administration category to:

- control the hosts that can run X clients using Exceed
- edit the Host Access Control List (`xhost.txt`)
- edit the User Access Control List (`xauth`)
- specify or edit the Security Policy File
- enable or disable the Extend extension
- set or change the Extend or Xconfig password

Security and Access Control Settings

Use the Security page in Xconfig to restrict access to specific Exceed components.



Host Access Control List

This area contains options that restrict access to your Exceed X server by specific hosts. By default, the Host Access Control List is the `xhost.txt` file in the `User` directory.

Note: If you select the `xhost.txt` file, you can use only Passive startup mode on the Communication page.

Specify another file through one of the following methods:

- Type its full path (if other than the Exceed `User` directory) and file name in the File box.
- Locate it by clicking Browse adjacent to the File box.
- Modify the Host Access Control List file in a text editor by clicking Edit.

You can also enable the following settings:

No Host Access—Instructs Exceed to use an empty Host Access Control List to regulate access (that is, no hosts are allowed access).

Any Host Access—Terminates use of the Host Access Control List and allows unrestricted access to all hosts on the network.

Allow Clients To Modify Host Access Control List—Regulates client modification of the Host Access Control List (`xhost.txt`).

Enable User Access Control List

This option enables security at the user level (rather than at the host level) without using XDMCP. By default, this setting is not selected. For optimal security when enabling this setting, clear the Allow Clients To Modify Host Access Control List option, and select the Host Access Control List option.

User-level security is controlled by an `.Xauthority` file (by default, `xauth`), which is read each time the server is started or reset. You can create an `.Xauthority` file using the host-based Xauth utility. To make this binary file available to Exceed, download it from the host and copy it to the `User` directory. To select an `.Xauthority` file other than the default `xauth` file, click Browse.

Modifying Xweb Settings

You can use Xweb security settings to control X clients running from Web sites, either independently or embedded within the browser. Select from the options described below.

Security Policy File—This file lets you specify certain restrictions on clients. You can specify a file in the box, or browse for another file. Click Edit to open the file in a text editor. Each line in the Security Policy text file starts with a keyword:

#—Lines starting with this symbol are treated as comments.

sitepolicy—Lines starting with this keyword are used to specify or name the policies that Exceed supports. These lines are characterized by a specific syntax: a collection of alphanumeric characters designed to match a similar collection in the configuration file of a firewall proxy.

property—Lines starting with this keyword are used to assign permissions to untrusted clients regarding access to window properties.

For more details about property access rules and keyword syntax:

- see the “Security Page” topic in Exceed Help
- see the various comment lines in the `security.txt` file (click Edit adjacent to Security Policy File)

Plug-in Configuration File / Helper App Configuration File—Clicking Edit opens Windows Notepad with the respective configuration file loaded. This is the only way to edit these files. Doing so outside of Xconfig produces warning or error messages, and the new configuration files are ignored.

Modifying Extend Settings

Enable Extension—Provides server support for the Extend client applications (X Window clients that reside on UNIX hosts). When you select this box, the Extend extension is enabled. By default, this setting is not selected.

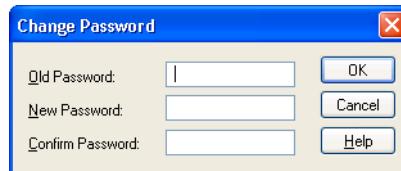
Password—Opens the Extend Password dialog box, which lets you restrict access to the Extend extension by specifying a password. When the Extend clients are available on the host, authorized users with the password can:

- launch applications on the server
- access and transfer files between the host and the user's computer
- print files

Warning! If you do not specify an Extend password, anyone can access files on your computer.

To change the extension password:

- 1 In Xconfig, click Security, Access Control And System Administration in Category View.
- 2 In the Extend area of the Security page, select Enable Extension, then click Password. The Change Password dialog box opens.



Remember the password. It is required to change the password again.

- 3 Type the current (old) password, type a new password, then confirm the new password by retyping it.
- 4 Click OK.

X Client Connections

Warn On Unauthorized Connections—Opens a warning dialog box whenever an unauthorized X client tries to connect. By default, Exceed refuses unauthorized connections. The warning gives you the opportunity to accept or refuse unauthorized X application connections.

Warn On Authorized Connections—Opens a warning dialog box whenever an authorized X client tries to connect.

Host Access Control List Syntax

The Host Access Control List is a text file containing the names and addresses of all hosts with access to the Exceed server. Use the Host Access Control List File area on the Security page in Xconfig to specify options.

The default file `xhost.txt` is located in the Exceed `User` directory. A number sign (#) at the beginning of a line means the line is treated as a comment and is ignored. An information line has the following format:

- Host names are not case-sensitive.
- The address is specified in Internet Protocol (IP) address notation.

Creating and Editing the Host Access Control List

The Host Access Control List is a text file that lets you restrict access to your Exceed X server to specific hosts. The default Host Access Control List file (`xhost.txt`) is located in the `User` directory.

To add a host to the `xhost.txt` file:

- 1 In Xconfig, click Security, Access Control And System Administration in Category View.
- 2 In the Host Access Control List area, click File.
- 3 Click Edit to open the Host Access Control List in a text editor.
- 4 To add to the list on a separate line in this file, specify the name or Internet Protocol (IP) address of the host that you want to add.

Note: Host names are not case-sensitive. Lines beginning with a number sign (#) are treated as comments.

- 5 Save the file and exit Notepad.
- 6 To reload the list, right-click Exceed on the Windows taskbar. On the File menu, point to Reload Database, and then click Access Control Lists.

To create a different host access control list:

- 1 Open a text editor such as Notepad.
- 2 List the host names. You can specify only one symbolic host name or constant address per line.
- 3 Save the file.
- 4 Specify this file as the host access control list on the Security page in Xconfig.

Creating the User Access Control List

The User Access Control List is a text file that lets you restrict access to your Exceed X server at a user level (rather than at the host level). By default, the User Access Control List is the .Xauthority file.

Note: You cannot edit this file on your computer. You must edit it on the host.

To create the user access control file:

- 1 Create an .Xauthority file on your host using the host-based xauth utility. For more information, refer to the man pages on the xauth utility available in UNIX.
- 2 Enable xstartd using InetD (in Control Panel, double-click Open Text InetD).
- 3 Propagate your DISPLAY (where DISPLAY is the Exceed X server *IP Address:DisplayNumber*) to the Exceed X server by using the following command on the host:

```
"xauth nextract - Exceed_Xserver_IP_Address:DisplayNumber  
rexec -l your_pc_username -p your_pc_password  
Exceed_Xserver_IP_Address xauth nmerge -"
```

- 4 In Xconfig, click Security, Access Control And System Administration in Category View.
- 5 Select Enable User Access Control List.
- 6 If the file you created is not listed, click Browse to locate and select the file.
- 7 To reload the list, right-click Exceed on the Windows taskbar. On the File menu, point to Reload Database, and then click Access Control Lists.

Authorizing X Clients

In Xconfig, the Security page authorizes X clients in stages. To access the page, click Security (Classic View) or Security, Access Control And System Administration (Category View). If a client tries to connect to the Exceed X server in a non-XDMCP startup mode, authorization is as follows:

- 1 If user access control is enabled and the client passes the authorization screening, the client is allowed to run.
- 2 If the client originates on a host specified in the Host Access Control List, or if host access control is disabled, the client is allowed to run.

Note: To disable host access control, click No Host Access. If you don't clear the Allow Clients To Modify Host Access Control List option, the client may be refused.

If you enable user access control and want full security, use a Host Access Control List with no entries. This is equivalent to selecting the No Host Access option.

Editing the rxplugin/xrx Configuration Files

Access to these files is provided from the Security page in Xconfig. The rxplugin configuration file controls access to Web servers when using the Xweb plug-in. The xrx configuration file controls access when using the Xweb helper application.

In most cases, the contents of these two files are identical, although you can have different configurations for the plug-in and the helper applications. However, if you do not want different configurations, be sure that whatever changes you implement in one, you also make to the other.

For more information, about these specifications, see Exceed Help.

You can control access to these files by configuring five different specifications. Each is prefaced with rxplugin or xrx, depending on which configuration file you are currently editing.

Invalid Configuration Files

For security reasons, certain text-based configuration files in Exceed are valid only when edited using the editing feature provided in the Xconfig SECURITY extension. The security policy file, as well as the xrx and rxplugin configuration files, are such files.

If you have edited these files outside Xconfig and an X client (such as an Xweb client) uses the SECURITY extension, the following warning message appears:

Invalid file. This file can only be edited from the Xconfig Security dialog.

Click OK to dismiss this message box to continue with no configuration in place (no policies, if the security policy file is in question; or all clients are treated as untrusted, if the xrx or rxplugin configuration file is in question). Once dismissed, the warning message does not appear again during the current session (until there is a server reset). However, the problem continues to exist, and configurations are not in place. After a server reset, or if you end the session, the message reappears the next time an X client uses the SECURITY extension.

This can occur if you use a text editor, such as Notepad, to edit these files instead of accessing them from the Xconfig SECURITY extension, or if someone has tried to copy an altered file over a valid one edited with Xconfig.

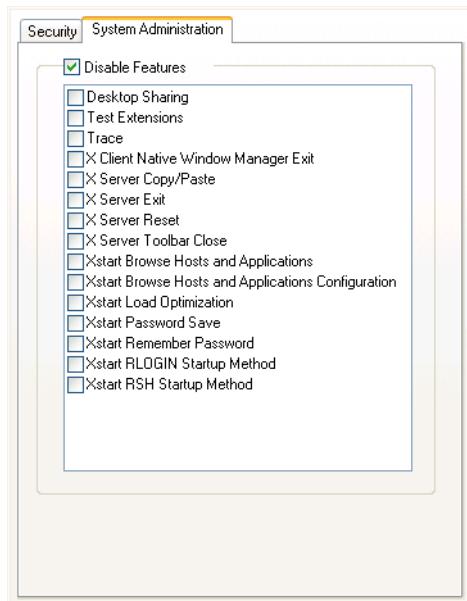
To ensure that the message box does not open and valid configurations are used:

- 1 In Xconfig, click Security, Access Control And System Administration in Category View.
- 2 In the Xweb area, click Edit (adjacent to Security Policy File).
- 3 Review any alterations and either remove or accept them.
- 4 Save the file and click Validate And Apply Changes in the Common Actions menu box. If Exceed is running, you are prompted to perform a server reset.

This validates the file contents. Your configurations are used whenever an X client uses the SECURITY extension.

System Administration

Use this Xconfig page to disable some of the extensions and advanced functionality supported by Exceed. The System Administration page can be locked by the system administrator. If this is the case, you cannot disable settings.



Disable Features—Select this check box to access the list of features. Click the adjacent box to toggle between the feature being disabled (as indicated by a check mark) or enabled. Click Validate And Apply Changes in the Common Actions menu box. Selections made on the System Administration page are enforced the next time you start Xconfig.

Restricting Access to Xconfig and Extend

Using passwords, you can restrict access to Xconfig, specific Xconfig settings, the System Administration page, and the Extend extension. How to set these passwords is described below.

Xconfig Password—Set the Xconfig password by clicking Change My Password under Quick Links (left pane menu) or on the Actions menu. Depending on how Exceed is set up in your organization, you may also be asked to specify an Xconfig password during setup. If there is an Xconfig password, you can open the Xconfig window only after you enter the correct password. The Xconfig password specified on the Security page protects access to the entire Xconfig application.

Extend Password—Specify the Extend password in the Extend area of the Security page. This password lets you allow only password holders to use Extend.

Mandatory Settings

Xconfig mandatory settings lets administrators lock certain individual settings so that users cannot change them. By default, all settings are initially available for configuration.

This option is available only for Administrators or users with elevated (administrative) privileges.

To lock certain settings and options from within Xconfig, click Mandatory Settings on the File menu in Xconfig. When this option is enabled, a lock icon appears under all settings within Xconfig.

You can then click this icon to toggle between:



- unlocked (green lock) and



- locked or mandatory (red lock)

Locked (mandatory) settings are saved to Mandatory.xcfg (located in the Global directory).



X Server Protocol

For detailed information about the user interface and how to access it, see Exceed Help.

The Xconfig Protocol and Extensions pages let you define settings that affect the interpretation of the X protocol. Use the Protocol and Extensions pages to:

- enable a specific extension
- configure GLX and RENDER extensions
- make specific extensions available to untrusted clients
- use a custom vendor string
- enable compatibility with DECwindows

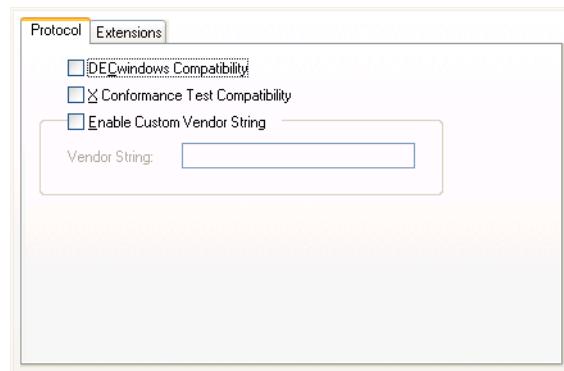
Note: You cannot enable Xprint from Xconfig. To enable the Xprint extension, you must start Exceed from a command line and enable the Xprint extension using the following syntax:

```
exceed.exe -xprt <X display number>
```

You can also run Xprint from Xstart using the Command box in the Xstart dialog box to enable the extension.

X Server Options and Extensions

In Xconfig, click X Server Protocol in Category View to access the Protocol and Extensions pages. Use this page to control the options that regulate how Exceed operates. You can also lets you enable, disable, and configure Exceed extensions.



DECwindows Compatibility—Provides DECwindows compatibility.

X Conformance Test Compatibility—Configures Exceed to pass certain tests in the X Conformance Test Suite (X Test Suite) that it would normally fail. These failures occur because some X clients have problems for which the Exceed X server has benign workarounds. You should also select Allow Clients To Modify Host Access Control List on the Security page to pass certain X Test Suite tests. To access the Security page, click Security, Access Control And System Administration in Xconfig.

To access the Delay Window Mapping option, in the Xconfig window (Classic View) click Screen Definition, click the Screen tab, and then click Advanced.

Additionally, selecting this option overrides the Delay Window Mapping option (in the Multiple Window Mode Advanced dialog box). If Allow Clients To Modify Host Access Control List is selected, there is no delay on window mapping.

Enable Custom Vendor String—Lets you specify the vendor string that is passed to clients at connection time (in the connection block). If your client requires a specific vendor string, select Enable Custom Vendor String, type the Vendor String in the box, and click OK.

Extensions Settings

For information about default protocol extensions for Exceed.xcfg and individual protocol extensions, see Exceed Help.

Use the Extensions page to enable and disable protocol extensions, and make certain ones available to untrusted clients. To select or clear extensions, click the box adjacent to each entry in the list boxes. You can allow access to extensions by untrusted clients (rendering the extension unsecured).

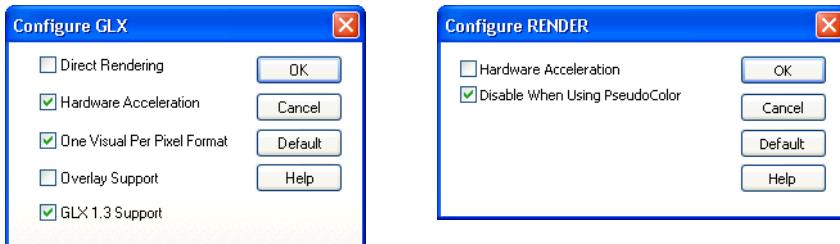
Disabling the following extensions displays a warning dialog box in which you are prompted to confirm the action: XC-APPGROUP and SECURITY.

Selecting extensions in the left list box enables them. Enabled extensions become available in the right list box. To make enabled extensions accessible by untrusted clients, select them in the right list box of the Extensions page.

Warning! If the All Extensions entry is cleared in the right list box after being selected, then extensions remain selected. You must clear each one to disallow access by untrusted clients.

For information about configuring GLX or RENDER, see Exceed Help.

Configure—Opens the Configure GLX or Configure RENDER dialog boxes if, respectively, the GLX or the RENDER extension is selected in the left list box.



Note: You can configure the GLX extension by selecting it and clicking Configure. In the Configure GLX dialog box, select options and click OK.

For more information about protocol extensions enabled by default (and other extensions), see Exceed Help.

Click OK to save your selections. Click Default to restore the original protocol extension selections for the Xconfig configuration file (initially Exceed.xcfg).



Display and Video

For detailed information about the user interface and how to access it, see Exceed Help.

Screen Definition

Use the Xconfig Screen page to specify the window mode, create and edit logical and physical screens, and configure the display to use multiple monitors. Click Display And Video (Xconfig Category View) or Screen Definition (Xconfig Classic View) to:

- add and configure logical screens
- change the Server Visual setting
- switch window modes
- change the size of the root window
- change the number of display screens
- enable scroll bars (for single window mode) or window panning
- edit or automatically load the XRDB database

Window Mode Options

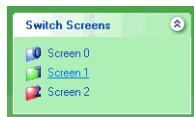
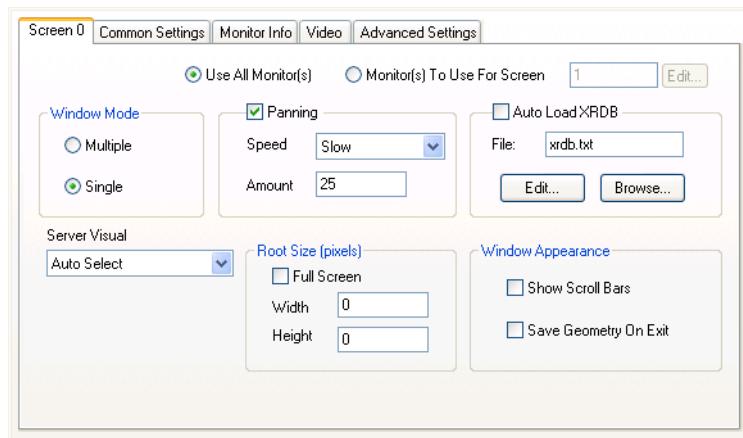
Select the window mode on the Screen page for each screen. Access these pages by clicking Display And Video (Xconfig Category View) or Screen Definition (Xconfig Classic View).

Multiple Window Mode—Each client you start creates its own new window. The native (Microsoft Windows) or the X Window manager (local or remote) handles all window functions. The default window manager in multiple window mode is Default To Native. If this option is selected, Exceed looks for another window manager; if none exist, Exceed uses Microsoft Windows to manage the window.

Single Window Mode—Presents all clients in a single Exceed window. A local or a remote X Window manager controls all window functions.

Configuring X Screens

Use this Xconfig page to select the window mode (and related options), server visual, and monitors to use for each X screen. In addition, you can add, enable or disable, and delete X screens. You can also provide information about your monitor configuration.



By default, one X screen (screen 0) is available. To add more X screens, click Add Screens in the Add Or Remove Screens menu box. To select and configure multiple screens, in the Switch Screens menu box, press and hold Ctrl while clicking each screen link.

Up to eight X screens and two hundred fifty six monitors are supported. This feature is useful for users who need their data split across multiple monitors or divided into many screens.

Note: To use multiple monitors, you need to install multiple video cards on your computer.

To delete a screen, click the screen name in the Switch Screens menu box, and click Remove Screen. You cannot delete screen 0. Screens must be deleted in reverse numerical order. That is, if you have six screens (0,1, 2, 3, 4, and 5), you cannot delete screen 3 before deleting screen 4. As an alternative to deleting a screen, you can disable it by clearing the Enable Screen option on the Screen page. If you disable a screen, all higher-numbered screens are disabled as well. You cannot disable screen 0.

For more information about Screen page options, see Exceed Help.

Screen page options vary according to whether the selected window mode is multiple or single. These options affect not only the appearance of your computer, but in certain instances, how it functions. For more information, see Exceed Help.

Other common tasks:

- To add screens, click Add.
- To add monitors, select Monitor(s) To Use For Screen and type the number of monitors in the adjacent box.
- To customize screen focus changes, click the Common Settings tab and complete the information there.
- To indicate a custom monitor size, click the Monitor Info tab and type the monitor size in the boxes provided.

Creating or Editing a Local XRDB Database

The local XRDB database is a resource database that resides on your computer instead of on the host. It defines properties that clients can use. The local resource database defaults to the `xrdb.txt` file in the *User* directory.

If you have created more screens than the default (Screen 0), you can set XRDB database settings independently in each screen's page. Click Display And Video (Xconfig Category View) or Screen Definition (Xconfig Classic View), and then click Edit (in the Auto Load XRDB area) on the Screen page to modify the database.

Load and remove the XRDB database using commands on the File submenu (available on the Exceed menu). To automatically reload the XRDB database with the server, select the Auto Load XRDB setting on the Screen page. You can also create an entirely new file or download a database from the host.

XRDB File Format

In the resource file:

- Empty lines are ignored.
- Tab characters are always converted to a single space.
- Lines starting with an exclamation mark (!) are ignored.
- Lines starting with a number sign (#) are preprocessor statements (see below).
- Every line must provide a resource specification as follows:

resourceName : text

- Spaces located before resourceName, the colon, and the start of the text as well as at the end of the line are ignored.
- resourceName may contain only the following characters:
 . a-z A-Z 0-9 _ -

Preprocessor Statements

Preprocessor statements let you set if..else conditions that define the xrdb.txt statements to process. You can use preprocessor statements to perform functions such as testing the resolution and color display of the video adapter and monitor before deciding which resource database statements to use.

A preprocessor statement is any statement that starts with a number sign (#).

Expressions in Preprocessor Statements

#if Specifies an expression in a format described in the **#endif** example below. If the expression is true, successive statements are processed. Otherwise, they are not processed.

Note: **#if** and **#endif** statements can be nested.

#endif An **#endif** statement marks the range of each **#if** statement. For example:

```
#if Planes == 8 ! test for 256 colors
    color ... ! specify color statements
#endif
```

#else You can use one **#else** statement within an **#if...#endif** range. The **#else** statement has the effect of swapping the result of the **#if** for all the statements until the next **#endif**.

Expressions in preprocessor statements take the following form, with the parameters separated by at least one space:

id operator constant

where *id* can be any of the following:

- **xpixels**—The width of the screen in pixels.
- **ypixels**—The height of the screen in pixels.
- **planes**—The number of video planes. The number of colors is 2^{planes} (that is, 4 planes specifies 16 colors; 8 planes, 256).
- **color**—Indicates if Exceed visual supports color. If the default server-visual supports color, then Color is set to 1; otherwise, it is set to 0. Use this setting to test whether the default server-visual supports color (for example, PseudoColor, StaticColor, TrueColor visuals).
- **static**—Indicates the type of colormaps supported. If the server supports only static, read-only colormaps, static is set to 1. Otherwise, it is set to 0. Use this setting to test if the server mode supports static read-only colormaps or dynamic read/write colormaps.

and *operator* can be any of the following where *constant* is a decimal numeric value (for example: `Xpixels == 80`):

Operator	Definition (where n is a decimal numeric value)
<code>==</code>	TRUE if <i><id></i> is equal to n
<code><></code>	TRUE if <i><id></i> is not equal to n
<code><</code>	TRUE if <i><id></i> is less than n
<code><=</code>	TRUE if <i><id></i> is less than or equal to n
<code>></code>	TRUE if <i><id></i> is greater than n
<code>>=</code>	TRUE if <i><id></i> is greater than or equal to n

For example, to see if a video resolution is available that is greater than or equal to 1024 pixels wide, use the following:

```
#if xpixels >= 1024
```

To test for 256-color capability:

```
#if planes == 8
```

Common Settings

For detailed information about the user interface and how to access it, see Exceed Help.

The Common Settings page in Xconfig contains options that determine window focus policy, server reset, and other server settings. You can select multiple session options that are reflected in the Exceed – Multiple Sessions dialog box. You can also select and edit toolbar configuration files.

Monitor Information

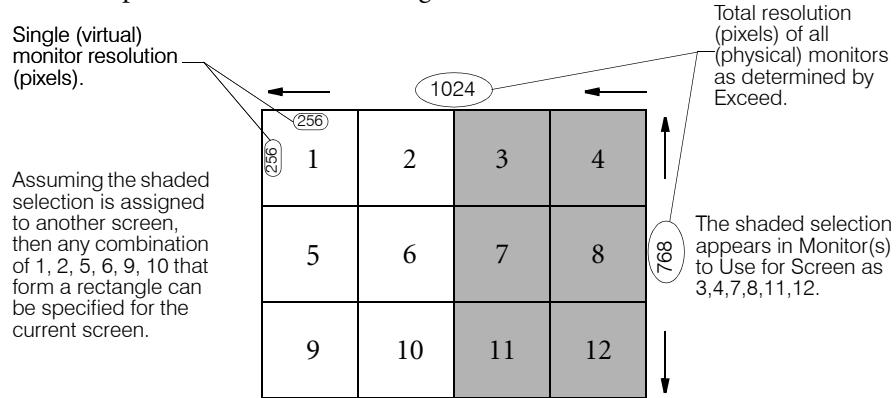
Xconfig automatically determines the total resolution of all monitors attached to the system and displays width/height values on the Monitor Info page.

Tiling Multiple Monitors

You can tile multiple monitors over the Windows desktop if:

- they are all set to the same resolution (width, height, and color format)
- collectively they form a complete rectangle

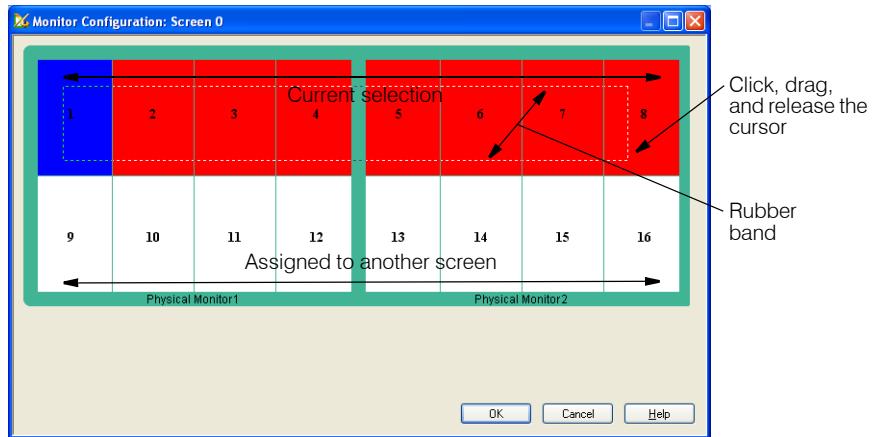
For example, consider the following scenario:



Use the Monitor Configuration dialog box to select and assign monitors to a particular screen. This dialog box displays the graphical representation of physical monitors attached to the system (similar to the Display Properties dialog box—Settings page, for Windows desktop). It also displays tiled virtual monitors spanning the physical monitors.

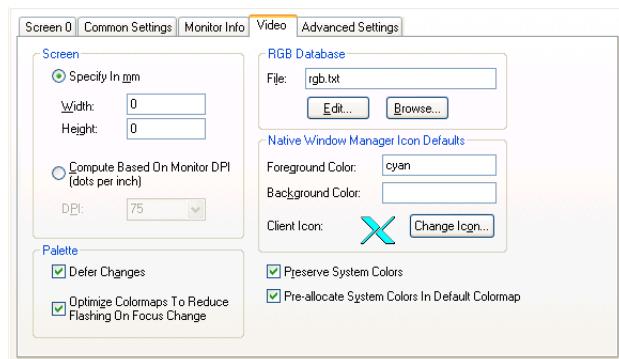
This arrangement is based on the width and height of the single monitor specified on the Monitor Info page. Select which virtual monitors apply to the current screen by using the rubber band feature: click, drag, and release the cursor to form a rectangle over contiguous virtual monitors. Alternatively, press and hold the Shift key while using arrow keys.

The selection *must* form a rectangle. Virtual monitors already assigned to another screen cannot be selected. If no virtual monitors are specified, then you can click only one rectangle (the physical monitor). In this case, only that virtual monitor applies to the current screen.



Video Settings

Use the Video page to customize the video mode and colors displayed by Exceed. You can set monitor width and height, associate names with Red, Green, and Blue values in an RGB database, and specify the icon defaults for native window manager mode.



For detailed information about the user interface and how to access it, see Exceed Help.

RGB Database Syntax

The RGB database associates symbolic color names with specific Red, Green, and Blue values. X clients request these values and/or color names when displaying information on your screen.

File Syntax

Each valid line in the `rgb.txt` file has the following format:

	R	G	B	
Example:	70	130	180	SteelBlue

Interpretation—The color named SteelBlue has a Red value of 70, a Green value of 130 and a Blue value of 180.

RGB values must be in the range 0 through 255. The colorname field in the text file is not case-sensitive and spaces are ignored.

Note: The Exceed log file keeps track of any client requests for colors not defined in the RGB database. You can then add these colors to the database for future use.

Advanced Settings

The Xconfig Advanced Settings page contains native window manager options and various other options affecting display and video.

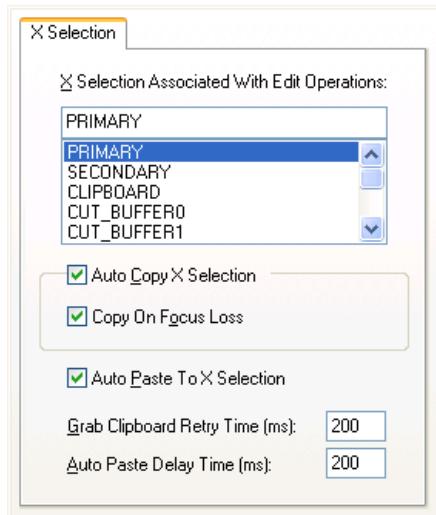
For detailed information about the user interface and how to access it, see Exceed Help.

Copy and Paste, and X Selection

Specifying X Selection Type

For detailed information about the user interface and how to access it, see Exceed Help.

You can select the type of X selection commands using the X Selection commands for copying and pasting on the Edit submenu (available on the Exceed menu). X selection settings and options are saved when you terminate the server.



Automatic Copy and Paste

You can set your system to automatically copy and paste X selections. This saves time and is especially useful for high volume copying and pasting.

To set copying and pasting of X selections to automatic:

- 1 In Xconfig, click Copy And Paste, And X Selection in Category View.
- 2 On the X Selection page, select the following options as required:

Select	To
Auto Copy X Selection	Copy the contents of the X selection to the Clipboard.
Copy On Focus Loss	Copy the contents of the X selection to the Clipboard when the window containing the X selection is not in focus.
Auto Paste To X Selection	Paste the contents of the Clipboard when the Clipboard contents change.

- 3 Click Validate And Apply Changes in the Common Actions menu box.

Using a Temporary Storage Buffer

Copying and pasting processes use a temporary buffer to hold data until it is cleared or replaced. This is similar to Windows Clipboard. The buffer being used depends upon whether you are running Windows applications or X applications.

If you are unsure about which X selection the X client uses, see the relevant X client documentation.

The X selection an X client uses, and how it is used, depends on the client. Most systems use the PRIMARY X selection, but other selections such as SECONDARY, CLIPBOARD, and CUT_BUFFER0 to CUT_BUFFER7 are also defined. Some clients can make use of more than one X selection.

To specify the X selection buffer:

- 1 In Xconfig, click Copy And Paste, And X Selection in Category View.
- 2 On the X Selection page, select the buffer type.
- 3 Click Validate And Apply Changes in the Common Actions menu box.

For information on automatic copy and paste, see page 181.

Font Management

Use the Font page to view and edit the font database available to Exceed, import and export font aliases, compile BDF and PCF font files to an Exceed format, and select default text and cursor fonts.



When you install Exceed, you automatically install font databases that support the International CDE.

Note: You do not have to modify the font database created during installation unless you want to use these new features.

The font database includes support for scalable fonts and font servers. You can also create multiple font sets and load the one(s) you want to use at run-time. Exceed can automatically connect to a font server running on the XDMCP host server.

The font database is stored in the `1fp.xdb` file in the directory where Exceed is installed. Specific fonts in the font database are stored in font directories and font servers. Exceed also supports pseudo fonts for Unicode.

Font Database

The font database is stored in the `lfp.xdb` file located in the Exceed *User* directory. Specific fonts in the font database are stored in font directories and on font servers. To access functionality for viewing and editing the contents of the font database, click Font Management (Xconfig Category View) or Font (Xconfig Classic View).

Font Directories and Font Servers

When you click Edit on the Font page, a window opens listing all font directories and servers in the font database. Use the buttons in the Font Database dialog box to make the necessary changes.

When an X client requests a font, Exceed searches each font directory or server in the font database in the order they are listed in the Font Database dialog box. The search continues until the requested font is found.

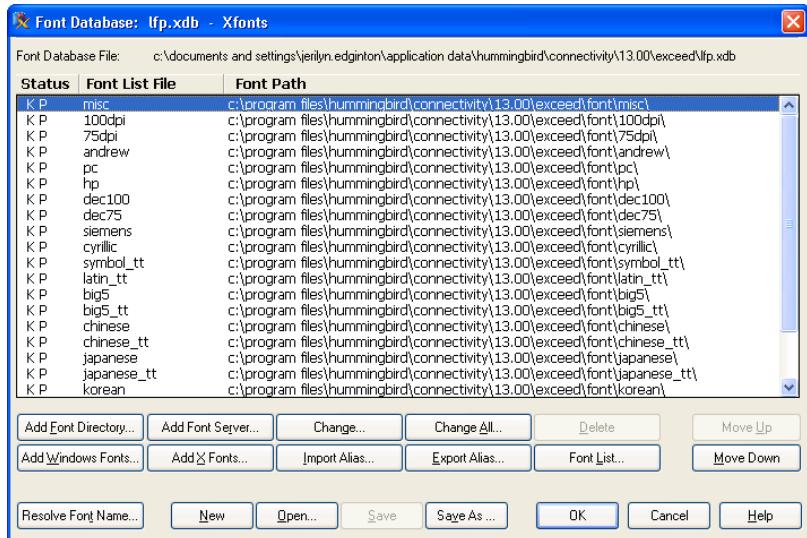
Fonts

To add, change, or delete individual fonts within the selected font directory or server in the Font Database dialog box, click Font List. This displays the fonts contained in the selection. The Font Database dialog box also provides buttons that let you view the font, font properties, font information, and character information.

Editing the Font Database

To view and edit the font database:

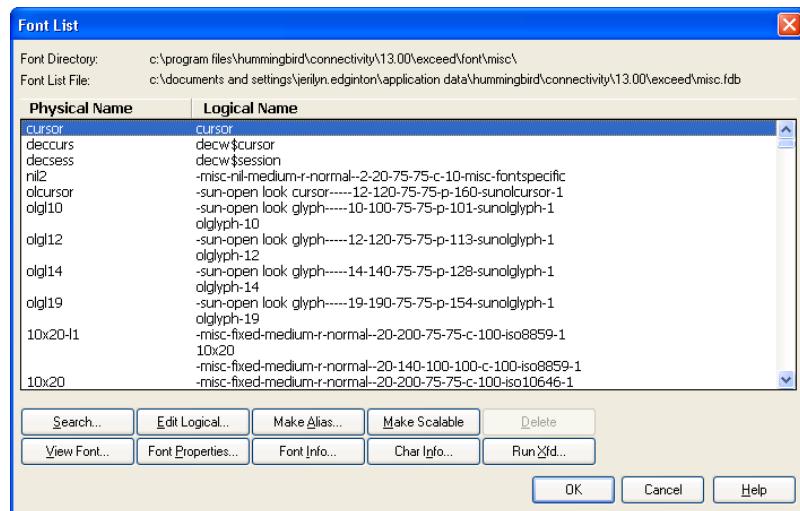
- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database: *file* – Xfonts dialog box opens listing all font directories and servers in the font database.



- 3 Use the buttons and options in the Font Database: *file* – Xfonts dialog box to make the following changes:
 - add, change, or delete font directories in the database
 - add, change, or delete font servers in the database
 - change the paths of the font directories/servers
 - determine (resolve) the physical font names of logical fonts
 - rebuild the database
- 4 Place the font directories/servers containing the most commonly requested fonts at the top of the list to reduce the amount of time it takes to find a match. Click Move Up and Move Down to change the display (search) order.

To add, change, or delete fonts:

- 1 In the Font Database: *file – Xfonts* dialog box, select a font directory or server, and then click Font List. The Font List dialog box opens displaying the fonts contained in the selection.



- 2 Use the buttons in the Font List dialog box to make the following changes:
 - add, change, and delete fonts
 - load another font database file
 - view font lists for each database, create aliases, and scale fonts
 - rebuild font databases
- 3 After you have made changes, click OK in the Font List dialog box, and again in the Font Database dialog box. The modified file (.xdb extension) is saved in the directory where Exceed is installed.

Note: When you install fonts, you should install both 75 dpi and 100 dpi fonts for best font matching. Additionally, if the monitor size is greater than 1024 x 768, in the Font Database dialog box, place the 100 dpi font in a higher priority than the 75 dpi font.

Adding and Changing Font Directories

The Add Font Directory button in the Font Database dialog box lets you add a font directory to the font database. The Change button lets you edit the selected font directory. These buttons open a similar dialog box: Add Font Directory or Change Font Directory, respectively. To access the Font Database dialog box, click Font Management (Xconfig Category View) or Font (Xconfig Classic View), and then click Edit on the Font page.

To add a font directory:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database: *file* – Xfonts dialog box opens listing all font directories and servers in the font database.
- 3 Click Add Font Directory. The Add Font Directory dialog box opens.
- 4 Specify a path and file name (*.fdb), or browse to a location.
- 5 Select Status options.
- 6 Click OK. The directory is added to the bottom of the font database list.

To change a font directory:

- 1 In the Font Database dialog box, click Change. The Change Font Directory dialog box opens.
- 2 Make changes to the path, file name, and directory status as necessary.
- 3 Click OK.

Note: Reloading the font database implements any changes you make. To reload the font database while the server is running, right-click the Exceed button on the taskbar. On the File menu, point to Reload Database, and then click Font.

Changing Paths in the Font Database

To change the path in the font database:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database dialog box opens.
- 3 Click Change All. The Change All Font Paths dialog box opens.
- 4 Type the prefix pattern you want to search for in the Find text box and the pattern you want to replace it with in the Replace text box. For example, to move font directories from F:\EXCEEDW to C:\EXCEED, type F:\EXCEEDW in the Find box and C:\EXCEED in the Replace box.
- 5 To change the status of font directories that match the Find pattern, click State in the Change Status area and select the new status you want to assign (Load, Keep, Inactive).

To change the Physical Font Name Match Allowed setting for font directories that match the Find pattern, click Match in the Change Status area, and enable or disable Physical Font Name Match Allowed.

Note: If you want to change *only* the status or Physical Font Name Match Allowed setting of font directories or servers, leave the Find text box blank to indicate that the changes should be made to all font directories and servers.

- 6 Click Next to find the first font directory or server that matches the Find pattern. Xconfig displays the name of the first matching font directory or font server.
- 7 To replace the Find pattern with the Replace pattern in this font directory or server, click Change. To skip this font directory or server and go to the next match, click Next. To make changes to all matching font directories or servers, click Change All.

Changing the Font Directory Search Order

Exceed sequentially searches each individual directory and font server in the font database for X client font requests based on their listed order in the Font Database dialog box. You may want to move font directories or servers containing frequently requested fonts to the top of the font database list to minimize the time needed to find them.

To change the font directory search order:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database dialog box opens.
- 3 Select the font directory or server to move and click Move Up or Move Down as necessary.

Note: If a font server stops running, the Exceed X server automatically reconnects when the server is running again.

Adding and Changing Font Servers

You can add or change font servers for a particular database by using the Font Database dialog box.

To add a font server:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database dialog box opens.
- 3 Click Add Font Server. The Add Font Server dialog box opens.
- 4 Specify a host name or IP address, a transport protocol, and a server port.
- 5 Select Status options.
- 6 Click OK. The server is added to the bottom of the font database list.

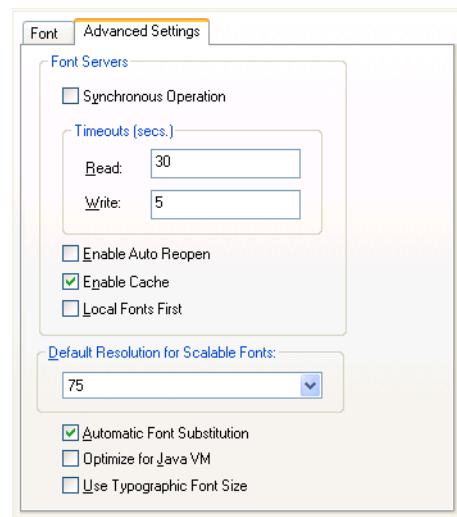
To change a font server:

- 1 In the Font Database dialog box, select a font server and click Change. The Change Font Directory dialog box opens.
- 2 Make changes to the font server and status as necessary.
- 3 Click OK.

Note: Reloading the font database implements any changes you make. To reload the font database while the server is running, right-click the Exceed button on the taskbar. On the File menu, point to Reload Database, and then click Font.

Accessing the Font Server

For detailed information about the user interface and how to access it, see Exceed Help.



Making Fonts Scalable

The Make Scalable button in the Font List dialog box lets you transform the selected font (resize, rotate, slant, and so on). Scalable fonts let you open and use font sizes that do not correspond to physical font files. Font scaling does not occur automatically; if you want to make a font scalable, you must create a scalable font entry.

To scale fonts:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database dialog box opens.
- 3 Select the font path and directory containing the font you want to scale.
- 4 Click Font List. The Font List dialog box opens.
- 5 Select the real font that you want to make scalable.
- 6 Click Make Scalable. A scalable entry is created. It has a physical name of (scalable) and appears at the end of the font list.

All the real fonts in this font directory that you can derive from the scalable entry are now scalable. To determine which fonts are scalable, click View Font while this scalable entry is selected. Note that they all have a similar XLFD logical name. At run time, Exceed chooses a closest real font from the list of fonts to be scaled.

Creating Font Aliases

In some cases, X clients may request a font not included in the database. The server responds by issuing a “Font not available” error message and logging the logical name or search pattern of that font in the log file.

You can use a font alias to link the requested font to an existing font with similar characteristics. After you create the font alias, clients can request the previously denied font so that the server can deliver the font alias.

Note: Check the log file regularly for denied font requests.

To create a font alias:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database dialog box opens.
- 3 Click Font List. The Font List dialog box opens.
- 4 Click Search to find an existing font resembling the requested font pattern. If you do not find one in this directory, try another directory until you find one that you consider a reasonable match.
- 5 Click Make Alias in the Font List dialog box.
- 6 Type or paste the font name in the box.
- 7 Click OK.

The font alias appears immediately below the logical font name in the second column of the Font List dialog box.

Creating Several Aliases

To create several aliases at the same time, create an alias file containing all of the desired aliases. An alias file is a text file that you can create or edit in any text editor, such as Windows Notepad. You can then import the contents of the alias file into the font database.

Importing Alias Files

You can import a file containing aliases into the font database.

To import an alias file:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database dialog box opens.
- 3 Click Import Alias.
- 4 In the Import Alias dialog box, type the path of the alias file being imported in the From box or click Browse.
- 5 In the To box, select a destination path from the drop-down list. By default, the entry selected in the Font Database dialog box is initially displayed.

- 6 Click Import to start importing.
- 7 Repeat steps 4 – 6 for each alias file you want to import.
- 8 Click Close.

Exporting Alias Files

The Export Alias dialog box lets you export aliases from the font database. Using this feature, you can export a group of aliases to a file so that you can distribute them among other Exceed users in your company.

To export an Alias file:

- 1 In Xconfig, click Font Management in Category View.
- 2 On the Font page, click Edit. The Font Database dialog box opens.
- 3 Click Export Alias.
- 4 In the Export Alias dialog box, select the source path in the From box. By default, the entry selected in the Font Database dialog box is initially displayed. Select the desired Output Type.
- 5 Type the destination path in the To box or click Browse.
- 6 Click Export to start exporting.
- 7 Repeat the above steps for each alias file you want to export.
- 8 Click Close.

Alias File Format

To create several aliases at the same time, create a file containing all the desired aliases. You can then import the contents of the alias file into the font database. You can create an alias file in any text editor, such as Windows Notepad.

Guidelines

- Each line in a standard X alias file contains two columns separated by spaces or tabs.
- Lines in the alias file have a certain format. If spaces or quotation marks are part of either an alias name or a line, enclose the name in quotation marks (""). Within the name, use the backslash character (\) before any quotation mark or space. For example, if you want to enter the line ABC"DEF fixed, then type "ABC\"DEF" fixed

Within names, you can use the standard wildcard characters * and ?. For example:

```
myfont-*--courier-bold-r-normal--*--*-*-m-*--iso8859-1
```

FILE NAMES ALIASES lines, typically used to automate physical font alias matching, are ignored. However, you can enable physical name matching by using the Physical Font Name Match Allowed check box in the Add Font Directory dialog box.

- The following non-standard source file statements are supported:
 - a) Enter comments by placing a # (number sign) as the first character on a source line.
 - b) Alias names can be limited to a particular directory in the font database using the following source line:

```
+Y
```

where Y is the name of any directory listed in the database. For example:

```
+C:\EXCEED\FONT\75DPI
```

By default, a + line remains in effect until the next + line is encountered. A + line not followed by a path resets the search to the entire database.

- c) Specifying a \$ as the first character of a path in an alias file implies the Exceed *Home\Font* directory. For example:

```
$andrew
```

This specifies the *Home\Font\Andrew* directory.

- d) If the alias name ends in a period (.), the extension is removed. The server also removes trailing . tags from font name patterns.

Encoding File Support

Exceed offers encoding file (.enc) support for the recoding of Unicode-encoded fonts (iso 10646-1) to a specified encoding. Before you begin, however, you must ensure that the *User* directory contains the following:

- an encodings.dir file
- a subdirectory called encodings in which you can place the encoding files (.enc)

To make use of encoding files, create an alias to the Unicode font you want to recode. You must ensure that the Unicode font contains all of the glyphs specified in the .enc file the font alias refers to. If a glyph is missing in the Unicode font, it will be absent from all text created with the alias font.

Setting Up Remote Font Architecture

By default, Exceed installs and makes use of fonts locally. However, you can place fonts in a central network location and configure each installation of Exceed to use these remote fonts.

To implement this architecture, you need a machine to serve as the remote font repository. For the purpose of this procedure, we will call the repository FONTREP. This name represents the PC name. All Exceed installations must have access to FONTREP to access the remote fonts.

This procedure assumes that the installation uses the default location and that the installation is performed by the user “Administrator”.

To set up remote fonts:

- 1 On FONTREP, perform a complete installation of Exceed ensuring that the installation includes all of the fonts that your users require.
- 2 Share the following font directory and set the proper permissions for users.

C:\Program Files\Hummingbird\Connectivity\version\Exceed\Font\

The remote administrator should have full control and Exceed users who will connect to FONTREP should have read access at the minimum.

- 3 Copy the *.fdb and lfp.xdb files from the User directory to the Exceed Font folder.

The folder is in the following location:

C:\Program Files\Hummingbird\Connectivity\version\Exceed\Font\

- 4 Rename the relocated lfp.xdb file to shared.xdb.
- 5 Edit the registry on the client machines that are using HKEY_LOCAL_MACHINE\SOFTWARE\Hummingbird\Connectivity\version\Exceed.

To do this, create a new String Value for SharedFontDir and assign the value \\FONTREP\font, which is the directory that you shared previously.

- 6 On FONTREP, launch Xconfig and do one of the following:
 - Select Category View and click Font Management.
 - Select Classic View and click Font.
- 7 On the Font page, browse to and select \\fontrep\font\shared.xdb. Use the fully qualified rather than the local path.

- 8 Click Edit to open the Font Database dialog box. Ensure that all font paths begin with \\FONTREP\font\.

If the paths differ, click Change All. In the Change All Font Paths dialog box, find and replace the default location, C:\Program Files\Hummingbird\Connectivity\version\Exceed\Font\, with the shared location, \\FONTREP\font.

For example, the font paths should read:

```
\FONTREP\font\misc\  
\FONTREP\font\75dpi\
```

- 9 Save the changes, and exit Xconfig.

To deploy remote fonts using Sconfig:

- 1 On FONTRP or any other PC that users can access, perform an administrative installation (c:\admin) of Exceed.
- 2 Copy the modified exceed.xcfg you created on FONTRP to C:\admin\Program Files\Hummingbird\Connectivity\version\Default User\Exceed on the system where you performed the administrative installation.
- 3 Launch Sconfig to customize this administrative installation. In the left pane, click Features, and expand the Exceed *version* tree that appears in the right pane. Expand the Exceed item and disable Exceed Fonts.
- 4 In the left pane, click Registry and set the following:
 - in the Root box, type HKEY_LOCAL_MACHINE
 - in the Data Type box, select REG_SZ.
 - in the Key box, type SOFTWARE\Hummingbird\Connectivity\version\Exceed
 - in the Value Name box, type SharedFontDir
 - in the Value Data box, type \\FONTREP\font

- 5 Save the changes, which will create a Transform file (`font.mst`).
- 6 Do the following on each client machine:
 - a) Connect to the system where you performed the administrative installation. In this case, the `font.mst` file will be in the root directory of the administrative copy.
 - b) Run the following command:

```
Setup /v"TRANSFORMS=font.mst"
```
- 7 When the installation is complete, the client systems are configured to use the remote fonts remotely on FONTREP. To confirm this, launch Font Management in Xconfig again. The font database should point to `\FONTREP\font\shared.xdb`. If you click Edit on the Font page, the various font paths should be prefixed with `\FONTREP\font`.

Note: By default, the font server's cache will be located in the `FS_cache` folder under the `\FONTREP\font` directory. If you want the font server's cache to reside locally, use the `FSCacheDir` environment variable to specify the desired location.

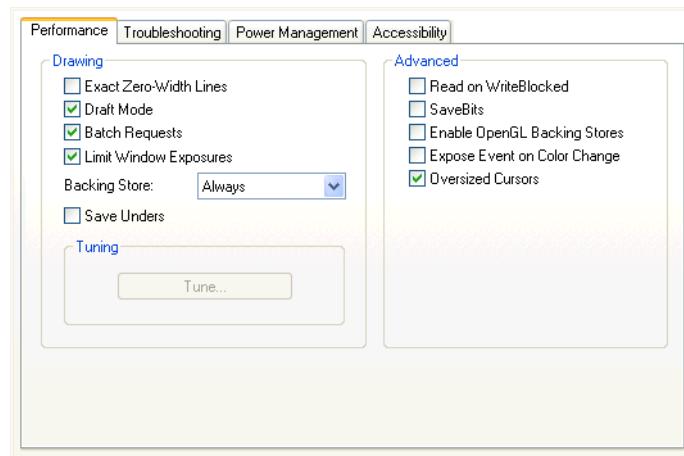


Other Server Settings

Click Other Server Settings (Xconfig Category View) or Performance (Xconfig Classic View) to access this page.

Maximizing System Performance

Use the Xconfig Performance page to adjust the amount of Microsoft Windows system resources used by Exceed to enable various performance-related drawing techniques. You can also configure Exceed for optimal graphics performance for your current video configuration.



For detailed information about the user interface and how to access it, see Exceed Help.

Setting Image Save Options

Using Save Unders reduces network traffic and improve window refresh speed at the expense of window drawing speed and memory. When this option is enabled, Exceed avoids repeats by saving background windows locally when small windows such as menus are closed.

You can set image save options (that is, Backing Store and Save Unders) on the Performance page. Click Other Server Settings (Xconfig Category View) or Performance (Xconfig Classic View) to access this page.

By default, Backing Store is set to When Mapped, which saves a window image only when the client requests this feature. To preserve the window contents when temporary menus are popped up, use the above backing store setting with the Save Unders option selected.

Limit Window Exposures saves an image of each top-level window to avoid sending expose events when windows are moved. This results in reduced bandwidth. Enabling this option may improve the performance of some applications.

Using Xperf

For detailed information about the Performance page and how to access it, see Exceed Help.

Clicking Tune on the Xconfig Performance page executes Xperf. Xperf lets you override the current drawing methods used by the server, and to determine the optimal graphics configuration for Exceed.

Note: If you change video cards, drivers, or video configuration, run Xperf to ensure optimal server performance.

Terminate all X clients before running Xperf. When you run Xperf, it automatically starts the X server. If the server is already running, Xperf prompts you to confirm restarting the server.

Overriding the Current Server Drawing Methods

When you select an item in the Xperf Graphics Operation drop-down list box, the current methods used by the server are displayed in the Window Method and Pixmap Method boxes. You can change the methods used by the server for a specific graphics operation by manually selecting a different method in the Window Method and Pixmap Method boxes. Click OK to finalize your changes. The next time the server is started, the specified drawing methods are used.

Determining the Optimal Graphics Configuration

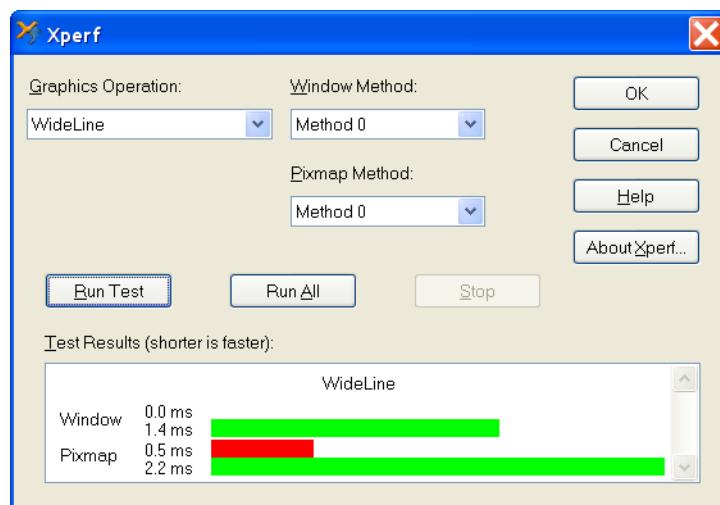
Use Xperf to determine the optimal method for drawing a specific graphics operation.

To run all possible tests:

- 1 In Xconfig, click Other Server Settings in Category View.
- 2 On the Performance page, click Tune.
- 3 In Xperf, click Run All.
- 4 Select the type of test you want to run in the Graphic Operation drop-down list box. Method 0 is the default method. It produces the best results with most video cards. However, additional methods are provided that may produce better results with some video cards.
- 5 Click Run Test.
- 6 Xperf draws the selected test object(s) using all available methods on your display. When testing is complete, Xperf displays the test results in the Local X Console window. To automatically update your computer configuration to optimize performance based upon the test results, click OK.

Determining the Test Results

This window displays the test results for the window and pixmap draw method you selected in the Graphics Operation drop-down list box. Note that the shortest graph in the window has the fastest drawing method.



Troubleshooting

For detailed information about the user interface and how to access it, see Exceed Help.

Use the Troubleshooting page in Xconfig to:

- view the log file (`Exceed.log`)
- specify font and other information that is written to the log file
- trace Exceed activity from startup

Viewing the Log File

The log file receives messages generated by Exceed. This file can contain useful troubleshooting information, such as:

- names of fonts requested by clients but not found
- names of fonts substituted if the Automatic Font Substitution (Font Database dialog box) and Log Font Opens (Troubleshooting page) options are selected
- names of colors requested but not found in the RGB database

- transport errors
- GLX information
- name of the application being loaded
- Xweb information

Click View on the Troubleshooting page to open the log file.

Note: You can also view the log file by selecting Tools on the Exceed menu and clicking Log File. Alternatively, click Log File on the toolbar.

To ensure that X font and color requests are met, examine the log file periodically, or after each session that terminates abnormally.

Handling Denied Requests for Colors

If a client requests a color that the server cannot supply, the requested color name appears in the log file. You can view the log file on the Troubleshooting page in Xconfig. Add these colors to the RGB database for future use.

To add colors to the RGB database:

- 1 In Xconfig, click Display And Video, and then click the Video tab in Category View.
- 2 Click Edit to open the RGB text file in a text editor.

- 3 Add a new entry to the database for the color name requested and assign Red, Green, and Blue values for that color name. The assigned Red, Green, and Blue values are arbitrary; they may or may not be related to the actual color name. An entry is made for the color to ensure that a color is returned to the client when requested instead of creating a "Color not found" error.

For example:

A failed request for the color was logged.

239255242Melon

Interpretation—The next time a client requests the color Melon, the RGB combination of 239, 255, 242 will generate the color. This may or may not be the color that the client visualized, but a color is returned and the operation proceeds.

- 4 Save the modified `rgb.txt` file.
- 5 Right-click Exceed on the Windows taskbar, select File menu, select Reload Database, and then click RGB to reload the RGB database.

Note: Exiting and restarting the server also reloads the database.

This color is now available to X clients.

Handling Denied Requests for Fonts

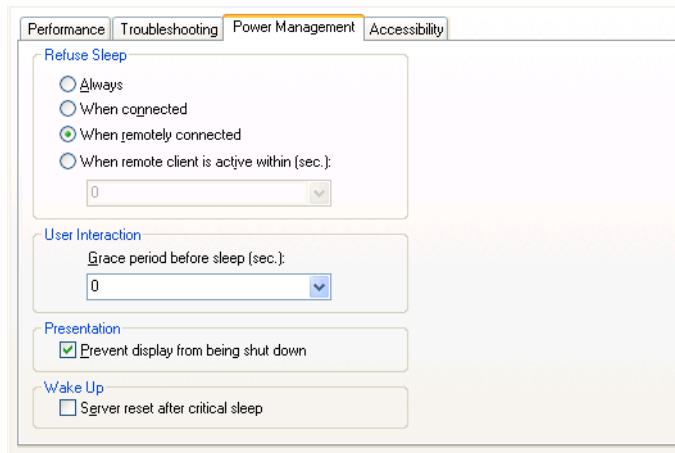
If a client requests a font that the server cannot supply, the name of the requested font appears in the log file. To view the log file, click View in the Xconfig Troubleshooting page or click Log File on the server Tools menu.

To resolve requests for missing fonts, you can:

- create font aliases
- compile the font source in `.bdf` or `.pcf` format using the Xconfig Font Compiler
- enable automatic font substitution

Preventing Standby Mode

Use the Power Management page to prevent the computer from entering sleep mode due to inactivity. To access this application, Power Management (Xconfig Classic View), or click Other Server Settings (Xconfig Category View) and then click the Power Management tab.



Power Management Settings

For detailed information about the user interface and how to access it, see Exceed Help.

The Power Management page provides options that prevent your computer from entering standby or sleep mode:

Refuse Sleep—Select an option to indicate under what circumstances the system should not enter sleep mode.

User Interaction—Select a time interval from the list to determine how long the system should stand by before entering sleep mode.

Presentation—Maintains the display even if the system enters sleep mode.

Wake Up—Causes the system to reset after sleeping for a long period of time.

Power Management on Windows Vista and Later

For Windows Vista and later, you need to configure Sleep Settings in the Group Policy Object Editor for Windows. In addition, you can also configure Power Options in Control Panel.

To specify Sleep Settings:

- 1 Run `gpedit.msc` from the command line.
- 2 In the Group Policy Object Editor, navigate to Local Computer Policy > Computer Configuration > Administrative Templates > System > Power Management > Sleep Settings.
- 3 Configure the Turn On Applications To Prevent Sleep Transitions (Plugged In) or the Turn On Applications To Prevent Sleep Transitions (On Battery) setting accordingly. For more information, refer to Microsoft documentation.

Note: Configuring these policy settings will not prevent sleep transitions caused by actively pressing the Sleep button on the keyboard.

Accessibility

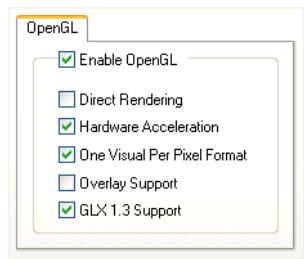
Use the Accessibility page to select options and settings that improve the way accessibility aids or clients (for example: specialized programs, magnifiers, screen readers, and tactile mice) work with Exceed. For an overview of features developed according to Microsoft Windows interface standards, see “Appendix C: General Accessibility and Customer Support” on page 335. For detailed information about the user interface and how to access it, see Exceed Help.

Exceed 3D and GLX

For detailed information about the user interface and how to access it, see Exceed Help.

OpenGL

The OpenGL page is available only if you have Exceed 3D installed.



MESA GLX Compatibility

Mesa is commonly used on many platforms, including Linux, OpenSolaris, and the BSDs. If your system's `libGL.so` library is provided by Mesa 7.1 or later, OpenGL applications will not run remotely. For example, when you try to run `glxinfo`, you receive the following error:

```
Error: couldn't find RGB GLX visual or fbconfig
```

To resolve this issue, you must first set the `LIBGL_ALWAYS_INDIRECT` environment variable. For example:

```
$ sh
$ LIBGL_ALWAYS_INDIRECT=y glxinfo
...
server glx vendor string: Open Text
...
```

If it is not possible to set `LIBGL_ALWAYS_INDIRECT` because you are using an XDMCP startup method and launching the application from the desktop menu, you can use the following workaround:

- 1 Open your system registry.
- 2 Navigate to the following key:

`HKEY_LOCAL_MACHINE\SOFTWARE\Hummingbird\Connectivity\14.00\Exceed\XServer`

- 3 Create a new `DWORD` value named `MesaVisualCompat` and set its value to 1. This enables Mesa's software-based OpenGL rasterizer on the application server, which pushes rendered images to your desktop.

Chapter 6

Using Exceed Freedom

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About Exceed Freedom

Exceed Freedom is not included with Exceed. For more information, contact your sales representative.

Exceed Freedom transforms your existing Exceed product into a server-based PC X server designed and optimized to run on intranet and internet network connections. It delivers X11 R7.4 X access with minimal overhead and allows users to remotely access applications that reside on UNIX, Linux, VMS, and other X Window System hosts.

Connecting to Hosts with Exceed Freedom

There are several ways to connect to hosts with Exceed Freedom; through Exceed Freedom, Exceed, Xstart, and connection documents.

You can configure Exceed Xconfig to automatically use Exceed Freedom when connecting to hosts. In this case, when you start Exceed, the Exceed Freedom dialog box opens. Depending on your Exceed Xconfig settings and the connection document used, the Exceed Connection Server login information may be populated by the connection document. For more information on starting Exceed Freedom sessions, see Exceed Help.

To start an Exceed Freedom session:

- 1 On the Start menu, navigate to the Open Text Exceed product group, and click Exceed Freedom.
- 2 In the Exceed Freedom dialog box, provide the information required to log in to the Exceed Connection Server machine.

For detailed information about the Exceed Freedom dialog box, see Exceed Help.



Note: If Exceed Connection Server is installed on a Windows platform and your computer is on a domain, provide the domain name and user name as follows: *domain\username*

If your server is installed on a Windows 2003 computer that is on a domain, you can use the syntax above, or you can provide the domain name and user name as follows: *username@domain*

If your computer belongs to a work group, specify the group in place of the domain.

- 3 Click the Run button. If you have suspended sessions on the specified Exceed Connection Server, the Exceed Connection Server – Suspended Sessions dialog box opens. You can select a session you want to resume or choose to start a new session.

About Connection Documents

Exceed Freedom connection documents (.efcd files) store connection and Exceed Freedom-specific configuration information used to connect to Exceed Connection Server and launch an X session. You can generate any number of connection documents and then run them to start sessions more quickly.

Note: If you do not specify login information in a connection document, the Exceed Freedom dialog box opens and prompts you to provide connection information when you start Exceed Freedom.

By default, connection documents are saved locally in the following location:

... \Documents and Settings\Current User\Application Data\Hummingbird\Connectivity\version\Profile

You can start an Exceed Freedom session by double-clicking an Exceed Freedom connection document. The login information and Exceed Freedom-specific settings specified in the connection document are used to start the session.

You can also specify the connection document to use to start an Exceed Freedom session on the Exceed Freedom page in Exceed Xconfig. For more information, see Exceed Help.

Creating Connection Documents

You can use the Exceed Freedom dialog box to create and edit Exceed Freedom connection documents.

To create a new connection document:

- 1 In the Exceed Freedom dialog box, specify the connection parameters necessary to connect to the Exceed Connection Server machine.
- 2 Click the Save button. The Save As dialog box opens.

To publish a connection document to all users, save the .efcd file without specifying user credentials.

- 3 Provide a name for the connection document by editing the default file name, NewConnection.efcd, which appears in the File Name box.
- 4 If necessary, change the default file location.

Note: Connection documents must be in the default file location to be migrated for use with newer product versions.

- 5 Click Save.

Editing Connection Documents

After you create a connection document (.efcd), you can edit it from the Exceed Freedom dialog box at any time.

To edit a connection document:

- 1 In the Exceed Freedom dialog box, click the Open button.
- 2 Select the connection document you want to edit, and then click Open. The Exceed Freedom dialog box displays the connection parameters currently saved in the connection document you selected.
- 3 Edit the parameters you want to change.
- 4 Click the Save button.

Using the Exceed Freedom Menu

When you start an Exceed Freedom session, you can use the Exceed menu for most general tasks as you would when working with an Exceed session. However, the Exceed menu contains a new Exceed Freedom submenu with commands that are specific to Exceed Freedom, including options related to suspending and sharing sessions, and viewing log files. For information on accessing the Exceed and Exceed Freedom menus, see Exceed Help.

Viewing Information About Your Exceed Freedom X Sessions

The Exceed Freedom menu displays session information.

Use the Exceed Freedom menu to determine the display ID you need to specify when starting an X application. The information is in the following form:

hostname.domain:displayID

Resetting the X Server

You can reset the X server at any time to terminate all X applications and re-initialize Exceed Freedom sessions. You reset the X server for Exceed Freedom in the same way you would for an Exceed session.

To reset the X server:

- 1 Save your work.
- 2 Exit all X applications and window managers.
- 3 On the Exceed menu, click Tools, and then click Server Reset.
- 4 Click OK.

Printing from Exceed Freedom X Sessions

With Exceed Freedom, you can access files and print them as you would a local file using Exceed Remote Print Utility (elpr).

Note: elpr is provided on the Exceed Freedom disc. To enable printing, system administrators must copy or install elpr to each machine running X applications from which users need to print.

You can use elpr from the command line or configure X applications to use elpr as the default printer. Exceed Freedom supports printing of only printable files, which are plain text (.txt) files and, depending on the printer, PostScript (.ps) files. You can also print images. All other files are not supported by Exceed Freedom printing and are considered non-printable files.

Note: Most UNIX applications can produce PostScript-formatted output, but many printers do not support this file type. In such cases, you can use third-party applications to convert the PostScript to a supported format.

When you print from an X session, the files that you want to print are first transferred from your X session to the Exceed Connection Server. You can then access and print the files at any time using the Exceed Connection Server – Server Files dialog box. Non-printable files must first be opened in a valid application, and then printed from within the application.

To print a file from an X session:

- 1 Use elpr to transfer the file that you want to print from your X session to Exceed Connection Server, using any of the following methods:

- transfer files from a UNIX command line
- transfer files from an X application

All files that are sent to the server are listed in the Exceed Connection Server – Server Files dialog box. You can access this dialog box using the Exceed Freedom menu. For more information, see “Using the Exceed Freedom Menu” on page 214.

- 2 In the Server Files dialog box, select a file and print it as you would a local file.

Printing Files from the UNIX Command Line in Exceed Freedom Sessions

If the file that you want to print is saved on your UNIX machine, you can use the `elpr` command to send the file from your X session to Exceed Connection Server, and then print it as you would a local file.

To print from the UNIX command line:

- 1 Enable printing and specify the appropriate printing behavior for your X session. For more information, see Exceed Help.
- 2 Transfer the file that you want to print from your X session to Exceed Connection Server using the `elpr` command:

```
> elpr -display display filename
```

where `display` is the display ID of the session and `filename` is the name of the file you want to print.

Note: If you enabled Print Automatically, all printable files are automatically sent to the default printer on your local Windows machine. If no default printer is specified, you are prompted to select one.

The icons to the left of the file name in the dialog box indicate the file's printability.

You can access the Exceed Connection Server – Server Files dialog box by clicking Server Files on the Exceed Freedom menu.

- 3 In the Exceed Connection Server – Server Files dialog box, select the file that you want to print and then select the appropriate file format:
 - Auto—Exceed Freedom attempts to select the appropriate file format.
 - Binary—Recommended for printing file types other than text.

- ASCII—Recommended for printing text files (.txt or .ps).

Note: If the Exceed Connection Server – Server Files dialog box is already open, a confirmation message appears. For printable files, click Yes to begin printing the file, or click No to cancel printing and update the list of print files. For non-printable files, click Yes to print all printable files on the server, or click No to cancel printing and update the list of print files.

4 Print the selected file by doing one of the following:

- To print a printable file (a .txt or .ps file), click Print. The selected file is automatically sent to the default printer. Alternatively, you can click Open to preview, or Save to save the file to your local machine before printing the file.

Note: All other printable files open a standard print dialog box that allows you to designate a printer for the job. If you select and print a combination of text and non-text files, a standard print dialog box opens. The non-text files are sent to the printer you specify, and the text files are sent to the default printer.

- To print a non-printable file (a file other than .txt or .ps), you must first open the file using an application that supports it by clicking Open. You can then print the file from within the application. Alternatively, you can click Save to save the file to your local machine before opening and printing the file.

Printing Files from X Applications in Exceed Freedom Sessions

In some X applications, you can configure the application's print function to send a file to the Exceed Connection Server and then print it as you would a local file.

Note: The following procedure is generic. The print feature in the application from which you want to print may operate differently.

To print from an X application:

- 1 Enable printing and specify the appropriate printing behavior for your X session. For more information, see Exceed Help.
- 2 Find the location of elpr on your UNIX machine by asking your system administrator, or by using the `which` command:

```
> which elpr
```

- 3 Open the file you want to print in an application associated with its file type, and click Print.
- 4 In the print dialog box that opens, edit the print command by specifying the location of elpr. For example:

```
/user/local/bin/elpr
```

If you want to give the file a .ps extension, edit the command as follows:

```
/user/local/bin/elpr -ext .ps
```

If you want to disable any information messages, edit the command as follows:

```
/user/local/bin/elpr -ext .ps -q
```

- 5 Click Print in the X application menu.

Note: If you enabled Print Automatically, all printable files are automatically sent to the default printer on your local Windows machine. If no default printer is specified, you are prompted to select one.

You can access the Exceed Connection Server – Server Files dialog box by clicking Server Files on the Exceed Freedom menu.

- 6 In the Exceed Connection Server – Server Files dialog box, select the file that you want to print and then select the appropriate file format:
 - Auto—Exceed Freedom attempts to select the appropriate file format.
 - Binary—Recommended for printing file types other than text.

- ASCII—Recommended for printing text files (.txt or .ps).

Note: If the Exceed Connection Server – Server Files dialog box is already open, a confirmation message appears. For printable files, click Yes to begin printing the file, or click No to cancel printing and update the list of print files. For non-printable files, click Yes to print all printable files on the server, or click No to cancel printing and update the list of print files.

7 Print the selected file by doing the following:

- To print a printable file (a .txt or .ps file), click Print. The selected file is automatically sent to the default printer. Alternatively, you can click Open or Save to preview or save the file to your local machine before printing the file.

Note: All printable files open a standard print dialog box that allows you to designate a printer for the job. If you select and print a combination of text and non-text files, a standard print dialog box opens. The non-text files are sent to the printer you specify, and the text files are sent to the default printer.

- To print a non-printable file, select it in the list, and click Open. You can then print the file from within the application that supports it. Alternatively, you can click Save to first save the file to your local machine before opening and printing the file.

About Sharing Exceed Freedom X Sessions

The Share feature lets you share your Exceed Freedom X session to one or more users so that they may either view the session or participate in it from their computers. This feature is useful if you are providing a demonstration, working remotely, or getting technical support.

Session sharing depends on the following conditions:

- Exceed Freedom users can share sessions using Exceed Freedom functionality in Single Window mode only. To share sessions in Multiple Window mode, see “Desktop Sharing” in Exceed Help.
- You cannot share sessions if the Exceed Freedom administrator has disabled the session sharing permission for your user account.

A Share list file is accessible from the Exceed Freedom menu or on the Other page of the Exceed Freedom Connection Options dialog box (accessible from Exceed Xconfig). This file lists the users to whom you want to grant access. It also specifies the type of access you want to grant (view-only or participate).

The Share List Editor dialog box lets you edit the Share list in two ways:

- For the current session only—When you open the Share List Editor dialog box from the Exceed Freedom menu for the active session, the list is applied only to the current X session. Your modifications to the list are not saved.
- For all sessions that use a specific connection document—When you open the Share List Editor dialog box from the Other page of the Exceed Freedom Connection Options dialog box, your modifications to the list are saved as Xconfig options in the connection document. Whenever you select that connection document to start an X session, Exceed Freedom applies the saved Share list.

Sharing Exceed Freedom X Sessions

After you have created a Share list, you can share a session. For information on adding users to the Share list for a current session, see “Adding Users to the Exceed Freedom Share List” on page 222. For information on modifying the share list for a specific Xconfig file, see “Editing the Exceed Freedom Share List” on page 223.

Note:

- If you are running one or more OpenGL applications when you share your session, you must relaunch these applications after the share is established.
- When you start an Exceed Freedom session in Multiple Window Mode, you must use Exceed sharing functionality. For more information, see “Desktop Sharing” in Exceed Help.

To share a session:

- 1 Start an Exceed Freedom session by connecting to a host.

Note: If sharing is enabled to you, the Share option on the Exceed Freedom menu is active.

- 2 To share the session, click Share on the Exceed Freedom menu. A check mark appears next to Share.

Adding Users to the Exceed Freedom Share List

Before you can share a session, you must add users to the Share list. This procedure explains how to add users to the Share list for the current session. For information on adding users to a Share list for a connection document, see “Editing the Exceed Freedom Share List” on page 223.

- 1 On the Exceed Freedom menu for the session, click Edit Share List.
- 2 In the Share List Editor dialog box, click Add. The Exceed Connection Server – Users dialog box opens listing all the users who have previously logged into the Exceed Connection Server or server cluster.

- 3 Select the user(s) you want to add to the Share list. A check mark appears next to the user name.
- 4 Click OK.
- 5 Select the newly added user in the Share List Editor dialog box, and then select one of the following permission types in the Permission area:
 - View Only—Permits the specified user to observe all the actions you perform in your session. The user cannot participate in the session.
 - Participate—Permits the specified user to participate in the session. It does not allow the user to change Xconfig file options, print, suspend the session, or reset the server.
- 6 Click OK. The Share list is applied to the current session.

Editing the Exceed Freedom Share List

You can remove a user from the Share list file or change a user's permissions at any time before or after you start an X session.

To modify the Share list after starting an X session:

- 1 On the Exceed Freedom menu, click Edit Share List. The Share List Editor dialog box opens.
- 2 You can do any of the following:
 - Click Add to add a user to the list. In the Add User dialog box, type the user name and click Add.
 - Select a user and click Remove. If you remove a user, you must add that user again if you want to grant him or her access in the future.
 - Select a user and change the settings in the Permission area.

To modify the Share list for a connection document:

- 1 Open the Exceed Freedom Connection Options dialog box by doing one of the following:
 - Right-click a connection document, and click Edit.
 - In Xconfig category view, click Network And Communication, click the Exceed Freedom tab, select a connection document, and then click Edit.
- 2 Click the Other tab.
- 3 In the Sharing area, select Enable Sharing, and click Edit. The Share List Editor dialog box opens.
- 4 You can do any of the following:
 - Click Add to add a user to the list. In the Add User dialog box, type the user name and click Add.
 - Select a user and click Remove.
 - Select a user and change the settings in the Permission area.
- 5 Click OK to save your changes to the connection document.

Participating in Shared Exceed Freedom X Sessions

If you have been granted permission to share another user's session, and you have access to the server on which the session is running, you can join the session from the Exceed Connection Server – Shared Sessions dialog box. When you attempt to join another user's session, the user is prompted to allow or deny the access request.

To join a session shared to you by another user:

- 1 In the Exceed Freedom dialog box, provide the information necessary to connect to the server.
- 2 On the Action menu, click Join. If one or more users have shared their sessions to you, the Exceed Connection Server – Shared Sessions dialog box opens listing these shared sessions. You can also view status and permission information.

- 3 Select the session that you want to access and click Join.

Note: If you experience a delay while Exceed Freedom connects to the server, it is likely that the master session is involved in an X application operation such as CDE login. Exceed Freedom will connect when the operation is completed.

Working in Shared Exceed Freedom X Sessions

If you have Participate permission in a session shared to you by another user, you can participate in the session unless otherwise indicated by the options in the Exceed Freedom menu.

To take control of an Exceed Freedom session, click Grab Input on the Exceed Freedom menu. Only one user can have control of the session at a time. If this option is dimmed, another user has control of the session or you have been granted View Only permission for the shared session. To release control of the session, click Grab Input again.

About Exceed Freedom X Session Suspend/Resume

You can use the Suspend/Resume feature to end an X session on your computer without terminating the X applications you are using. When you suspend an X session, Exceed Connection Server maintains it so that when you log back on to that server, you have the option of resuming the session to continue using the X applications that were running before the session was suspended. If you do not want to resume a session, you also have the option of terminating it and/or starting a new session.

Additional Suspend/Resume settings let you safeguard your work against unwanted disconnections by suspending sessions without terminating the X applications you are running. For more information, see “Modifying Exceed Freedom Settings” on page 228.

You can also resume a session on a machine other than the one on which the session was suspended.

Suspending Exceed Freedom X Sessions

You can suspend an X session at any time. This feature is helpful if you want to preserve your current work by suspending your X Window session rather than closing it. When you resume the session, all session settings and open X applications are restored.

Note:

- Suspended sessions occupy resources on the server. If a large number of sessions are suspended, server performance can be affected.
- To suspend OpenGL applications, you must use a Direct Server Side Rendering-enabled Xstart file to connect. Otherwise, Exceed Connection Server terminates any running OpenGL applications.

To suspend a session, do one of the following:

- On the Exceed menu, point to Session, and click Suspend.
- When closing the session, click Yes in the confirmation dialog box. This confirmation dialog box appears only when the administrator enables suspend/resume functionality for a user.

Note: The Exceed Connection Server Administrator can set a timeout for suspended sessions. Sessions suspended for more than the allotted time are terminated.

Automatically Suspending Exceed Freedom X Sessions

In some situations, you may want Exceed Freedom to automatically suspend X sessions. For example, in the event of a network failure, you may lose work in progress on an X application. You can, however, configure Exceed Freedom to automatically suspend X sessions upon connection loss. X applications are then maintained on the server and can easily be resumed.

To define which events should trigger an automatic suspend, select the appropriate Auto Suspend options on the Other page of the Exceed Freedom Connection Options dialog box.

Resuming Exceed Freedom X Sessions

When you launch a new X session on the Exceed Connection Server on which you previously suspended an X session, Exceed Freedom gives you the option to resume the suspended session.

If enabled by the administrator, you can also resume the suspended session from a computer other than the one used to suspend the session.

Note: To suspend OpenGL applications, you must use a Direct Server Side Rendering-enabled Xstart file to connect. Otherwise, Exceed Connection Server terminates any running OpenGL applications.

To resume a suspended X session:

- 1 In the Exceed Freedom dialog box, specify the login information for the Exceed Connection Server.
- 2 If you have any suspended sessions, the Exceed Connection Server – Suspended Sessions dialog box opens listing any sessions that you have suspended on the server. The icons indicate whether you can resume a session.
- 3 Select the session you want to resume, and click **Resume**.

Note: You cannot resume a session if the IP address of the suspended session does not match the local address and your user account does not permit you to resume sessions from anywhere.

Terminating Suspended Exceed Freedom X Sessions

- 1 In the Exceed Freedom dialog box, specify the login information for the Exceed Connection Server.
- 2 If you have any suspended sessions, the Exceed Connection Server – Suspended Sessions dialog box opens listing any sessions that you have suspended on the server.
- 3 Select the session you want to terminate, and click **Terminate**.

Modifying Exceed Freedom Settings

Many settings that define the behavior of your Exceed Freedom session are determined by Exceed Xconfig; however, some settings are specific to Exceed Freedom. You can modify the following types of Exceed Freedom settings:

- Connection settings
- Shadow window settings
- Image caching settings
- Font caching settings
- Printing settings
- Other settings

Connection Settings

These settings let you manage connection speed to optimize performance.

To configure connection settings:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 Click the Exceed Freedom tab.
- 3 On the Exceed Freedom page, select a connection document (.efcd) and click Edit.
- 4 In the Exceed Freedom Connection Settings dialog box, click the Performance tab.
- 5 On the Performance page, select the appropriate settings in the Connection area.
- 6 Click OK to save changes to the connection document.

Shadow Window Settings

Typically, Exceed Freedom handles all window drawing requests made by X applications. You can use the Shadow Window feature to improve performance when working with applications that impose heavy bandwidth demands, such as IC-CAD.

Enabling Shadow Window creates a buffer on the Exceed Connection Server machine. Drawing requests are handled by the server-side X proxy rather than by the Exceed Freedom desktop, which only displays the updated windows sent by the proxy. In effect, the proxy creates a series of snapshots, thereby dropping the details of the drawing process to reduce bandwidth use.

The Shadow Window feature is not recommended for use with all windows posted by an application, as this can impact performance. For this reason, after you enable Shadow Windows, you must specify the window(s) for which you want to use the buffer.

To enable and configure Shadow Window:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 Click the Exceed Freedom tab.
- 3 On the Exceed Freedom page, select a connection document (.efcd) and click Edit.
- 4 In the Exceed Freedom Connection Settings dialog box, click the Performance tab.
- 5 On the Performance page, enable Shadow Window.

- 6 In the Window Name box, use the following `WM_CLASS` or `WM_NAME` properties to specify the window(s) for which you want to use the Shadow Window feature:

`WM_CLASS=windowclass` or `WM_NAME=windowname`

Separate multiple entries with commas. If you do not know the name or class of the work area window, you can check the resource database or the X application's documentation. This information is also listed in the proxy log if you enabled the logging of window and command names. You can copy the information from the log to preserve letter case.

You can also specify a partial string for `WM_CLASS` or `WM_NAME` by prefixing the target with a ~ (tilde) symbol. The search for the string is not case sensitive.

`WM_CLASS=~partialclass`

- 7 Click OK to save changes to the connection document.

Image Caching Settings

Over a slow connection, large images can take a long time to transfer from the proxy to Exceed Freedom. The image caching settings let you improve performance by caching image data locally.

To configure image caching:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 Click the Exceed Freedom tab.
- 3 On the Exceed Freedom page, select a connection document (.efcd) and click Edit.
- 4 In the Exceed Freedom Connection Settings dialog box, click the Performance tab.
- 5 In the Caching area of the Performance page, enable or disable image caching.

- 6 You can configure the following image caching settings:
 - Larger Than—Images larger than the specified size in kilobytes (KB) are cached locally when this option is enabled.
 - Disk Space Limit—When the image cache reaches the size you specify in megabytes (MB), the least frequently accessed images are removed whenever a new image is cached.
- 7 Click OK to save changes to the connection document.

Exceed Freedom users can manually clear their local image caches from the Settings menu in the Exceed Freedom dialog box.

Font Caching Settings

These settings let you improve performance by caching font data locally.

To configure font caching settings:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 Click the Exceed Freedom tab.
- 3 On the Exceed Freedom page, select a connection document (.efcd) and click Edit.
- 4 In the Exceed Freedom Connection Settings dialog box, click the Performance tab.
- 5 On the Performance page, select the appropriate font caching settings from the Fonts area.
- 6 Click OK to save changes to the connection document.

Exceed Freedom users can manually clear their local font cache from the Settings menu in the Exceed Freedom dialog box.

Printing Settings

Exceed Remote Print Utility (elpr) must be installed on the X application host by the administrator to enable remote X applications to print on the local Exceed Freedom machine. When you print using elpr, the files you want to print are automatically transferred from the host to the Exceed Connection Server machine.

The Printing page of the Exceed Freedom Connection Settings dialog box contains the print configuration settings. You can access and print elpr files at any time using the Server Files dialog box.

To configure printing settings:

- 1 In Xconfig, click Network And Communication in Category View.
- 2 Click the Exceed Freedom tab.
- 3 On the Exceed Freedom page, select a connection document (.efcd) and click Edit.
- 4 In the Exceed Freedom Connection Settings dialog box, click the Printing tab.
- 5 On the Printing page, enable printing and specify printing behavior for your X session.
- 6 Click OK to save the connection document.

Other Settings

The Other page of the Exceed Freedom Connection Settings dialog box lets you modify general settings including sharing, troubleshooting, and suspend/resume settings. For more information, see Exceed Help.

Chapter 7

Introducing Exceed 3D

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About Exceed 3D

To order Exceed 3D, contact your sales representative. For contact information, see "Appendix C: General Accessibility and Customer Support" on page 335.

Exceed 3D lets you view three-dimensional (3D) applications under Exceed and create 3D applications using Exceed XDK. This section contains important information about Exceed 3D and instructions for installing Exceed 3D. Unless otherwise specified, all references to Windows XP/Server 2003 and later are referred to generically as Windows.

Overview and Features

Exceed 3D lets you use the Exceed X server to display OpenGL-based 3D applications. Exceed 3D provides support for OpenGL 1.2 and GLX 1.4.

OpenGL is an industry-standard 3D graphics software interface. It lets you create interactive programs that produce still or animated 3D color objects with shading, lighting, and other effects. GLX is the X Window System extension that implements OpenGL.

Exceed 3D supports:

- OpenGL version 1.2, GLX 1.3 (if supported by your graphics adapter), and GLX 1.4
- RGBA and color index modes on all video devices, including True Color 16-bit and 32-bit color video cards
- overloaded visuals to support OpenGL extended attributes such as double and single buffering
- direct rendering
- hardware acceleration (if supported by your graphics adapter)
- overlays (if supported by your graphics adapter)
- stereo (if supported by your graphics adapter)
- texture3D (if supported by your graphics adapter)

For demonstration purposes, sample programs are shipped with Exceed XDK.

Exceed 3D Requirements

Before you install Exceed 3D, make sure the computer on which you are installing it meets the following minimum system requirements:

- Microsoft Windows XP/Server 2003/Vista/Server 2008, Server 2008 R2, or 7
- Microsoft Visual C/C++ Version 4.2 or higher to develop OpenGL X clients

Graphics Cards

A graphics card specifically designed to support OpenGL should support overlay.

Most current high performance graphics cards support OpenGL, but some are not specifically designed for OpenGL, which could cause problems with some UNIX software if it requires specific OpenGL-related features. For more information, contact your UNIX software vendor to see which hardware they support, or contact your graphics card manufacturer.

GLX Protocol

Exceed 3D includes GLX, the OpenGL extension for the X Window System.

OpenGL Extensions

For detailed information about extensions, see the OpenGL Extension Registry:

<http://oss.sgi.com/projects/ogl-sample/registry/index.html>

The registry is maintained by Silicon Graphics, Inc. and provides standards, specifications, naming conventions, guidelines, and other related documentation.

Extensions supported by Exceed 3D

Exceed 3D supports the following OpenGL extensions:

Note: Your graphics adapter must also support these extensions.

GL_ARB_depth_texture	GL_ARB_multitexture
GL_ARB_point_parameters	GL_ARB_shadow
GL_ARB_shadow_ambient	GL_ARB_texture_border_clamp
GL_ARB_texture_compression	GL_ARB_texture_cube_map
GL_ARB_texture_env_add	GL_ARB_texture_env_combine
GL_ARB_texture_env_crossbar	GL_ARB_texture_env_dot3
GL_ARB_texture_mirrored_repeat	GL_ARB_texture_non_power_of_two
GL_ARB_vertex_blend	GL_ARB_window_pos
GL_EXT_abgr	GL_EXT_blend_color
GL_EXT_blend_logic_op	GL_EXT_blend_minmax
GL_EXT_blend_subtract	GL_EXT_cmyka
GL_EXT_convolution	GL_EXT_copy_texture
GL_EXT_framebuffer_object	GL_EXT_histogram
GL_EXT_misc_attribute	GL_EXT_packed_pixels
GL_EXT_pixel_transform	GL_EXT_point_parameters
GL_EXT_polygon_offset	GL_EXT_rescale_normal
GL_EXT_subtexture	GL_EXT_texture
GL_EXT_texture_env_add	GL_EXT_texture_env_combine
GL_EXT_texture_filter_anisotropic	GL_EXT_texture_object
GL_EXT_texture3D	GL_EXT_vertex_array
GL_HP_convolution_border_modes	GL_PGI_misc_hints
GL_PGI_vertex_hints	GL_SGI_color_matrix
GL_SGI_color_table	GL_SGI_texture_color_table
GL_SGIS_detail_texture	GL_SGIS_generate_mipmap

GL_SGIS_sharpen_texture	GL_SGIS_texture_border_clamp
GL_SGIS_texture_edge_clamp	GL_SGIS_texture_filter4
GL_SGIS_texture_lod	GL_SGIS_texture_select
GL_SGIS_texture4D	GL_SGIX_clipmap
GL_SGIX_depth_texture	GL_SGIX_fog_offset
GL_SGIX_interlace	GL_SGIX_shadow
GL_SGIX_shadow_ambient	GL_SGIX_texture_add_env
GL_SGIX_texture_lod_bias	GL_SGIX_texture_multi_buffer
GL_SGIX_texture_scale_bias	GL_SUN_global_alpha
GL_SUN_vertex	GLX_EXT_import_context
GLX_EXT_texture_from_pixmap	GLX_EXT_visual_info
GLX_EXT_visual_rating	

OpenGL Direct Rendering

Exceed 3D supports OpenGL direct rendering for improved local GLX client performance when the client is running on the same PC as the X server display. Direct rendering does not support a color index with any depth.

Note: If you have problems with resizing an OpenGL window, turn off direct rendering. These problems are caused by the Microsoft implementation of OpenGL.

Troubleshooting Problems with Graphics Cards

If you suspect that Exceed 3D has not selected the correct graphics card for your application, the following instructions may help you investigate the problem:

- 1 Select the Log GLX Information check box in the Troubleshooting dialog box of the Xconfig application.
- 2 Run the Exceed X server. On the Tools menu, click Log File to view the Exceed log file. This file lists the available OpenGL pixel formats that are implemented by your graphics card and by Microsoft software.
- 3 Run the `xglinfo` demo program and view the output in the Local X Console window. The output lists the visuals supported by the Exceed X server. (By default, the Local X Console window closes after all Local X clients exit. To change this option, in the Local X Console, click Close on Last Client Exit.)
- 4 Run your application and view the Exceed log file again. The OpenGL pixel format selected by the Exceed X server for your application is written to the log file.

By examining this output, you can determine if the Exceed X server selected the right graphics card for your application. If not, contact Customer Support. You may be asked to send the following log files: `exceed.log` and `xlib.log`, located in your Exceed user directory.

Chapter 8

Introducing Exceed XDK

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Introducing Exceed XDK

To order Exceed XDK, contact an Open Text Connectivity sales representative. For contact information, see “Appendix C: General Accessibility and Customer Support” on page 335.

Exceed XDK is a set of .dlls, include files, and libraries that you can use to develop GUI or console local X clients that run on your PC instead of a UNIX or Linux host. You can develop a local client using Exceed XDK, or you can port the code of an existing UNIX or Linux X application and rebuild the project so that the application runs locally on a PC. You can also develop OpenGL X applications with 3D capabilities for Windows.

Exceed XDK includes the Motif User Interface Language compiler (UIL), a Motif Window Manager (MWM) that supports double-byte and multi-byte character sets, and various additional Motif include files and libraries for developing local Motif clients. Local Motif clients are clients that use the current implementation of the OSF/Motif Widget set and are built to run on your PC instead of a UNIX host.

In order to develop local X clients, you must have programming knowledge of these operating systems and the X Window System. Use Microsoft Visual C++ or CYGWIN gcc compilers and linkers to build your local X client.

This section describes the following:

- what Exceed XDK provides
- how to use Exceed XDK to develop a local X client (including how to port a UNIX or Linux X client to a PC and recompile it)
- how to use the built-in Japanese and other locale-support components

Note: No development components in this version of Exceed XDK—including header files, import/static libraries, and sample source code—are intended for use with any development components of Exceed XDK earlier than version 6.

Sample Source Code

Exceed XDK contains the source files for compiling and linking the Circles, Ico, Xlogo, HelloMotif, Periodic, and Pplane programs in the XDK source directory.

Extensions Support

Exceed XDK (`hclglx.lib`) supports the following OpenGL extensions:

<code>GL_ARB_imaging</code>	<code>GL_ARB_multitexture</code>
<code>GLX_ARB_get_proc_address</code>	<code>GL_ARB_texture_env_add</code>
<code>GL_ARB_texture_env_combine</code>	<code>GL_EXT_abgr</code>
<code>GL_EXT_blend_color</code>	<code>GL_EXT_polygon_offset</code>
<code>GL_EXT_texture</code>	<code>GL_EXT_texture3D</code>
<code>GL_EXT_subtexture</code>	<code>GL_EXT_copy_texture</code>
<code>GL_EXT_histogram</code>	<code>GL_EXT_convolution</code>
<code>GL_SGI_color_table</code>	<code>GL_EXT_texture_object</code>
<code>GL_EXT_vertex_array</code>	<code>GL_EXT_blend_minmax</code>
<code>GL_EXT_blend_subtract</code>	<code>GL_EXT_blend_logic_op</code>
<code>GL_EXT_texture_env_combine</code>	<code>GL_EXT_texture_env_add</code>

Your graphics adapter must also support these extensions.

Among these extensions, you can only use `GLX_ARB_get_proc_address` with Exceed direct rendering mode. This extension lets Exceed virtually support any extension that it does not support directly. Exceed can get extension functions directly from the hardware driver.

Extensions Not Supported

Some extensions are not supported, for example `GL_NV_vertex_program`. However, it is possible to use an unsupported extension by calling the `glXGetProcAddressARB` function.

For example:

```
typedef void (APIENTRY * PFNGLBINDPROGRAMNVPROC )
(GLenum target, GLuint id );

PFNGLBINDPROGRAMNVPROC pfnBindProgramNV = NULL ;

char *exten = ( char * ) glGetString( GL_EXTENSIONS ) ;

if( strstr( exten, "GL_NV_vertex_program" ) )
    pfnBindProgramNV = ( PFNGLBINDPROGRAMNVPROC )
        glXGetProcAddressARB( "glBindProgramNV" );
```

Note: This example is for direct rendering only. The results of using extension `GL_NV_vertex_program` in another mode (rendering through Exceed) are unpredictable.

X11 Motif and OpenGL Version Support

This version of Exceed XDK supports X11R7.0, Motif 1.2.4, Motif 2.0.3, and Motif 2.1.30 with Complex Text Layout (CTL).

Support to run X11R5 local clients built using (GLX 4, OpenGL 1.2, and versions of Exceed XDK prior to Version 6 is also included if you install the X11R5 Local X Clients Runtime component. However, you cannot create X11R5 clients with this version of Exceed XDK.

International Support

This version of Exceed XDK includes extensions that support user input of the Euro and Latin-9 currency symbols.

Exceed XDK provides support for developing and running X applications using all major European languages, as well as Japanese, Chinese, and Korean. This version of Exceed XDK also supports X11 Internationalization (I18N). For more information about X11 Internationalization, see “Developing Local X Clients Using Dynamic Load of XLC/XIM/XOM” on page 275.

For more information about developing using Motif 2.1.30 CTL, see “Developing Local Arabic or Hebrew Clients Using CTL” on page 273.

In addition, if you are using Motif 2.1.30 CTL, you can use Exceed XDK to develop context-sensitive local Arabic or Hebrew applications.

Motif Tools Libraries (Xmt 2.1.2)

Exceed XDK includes support for X Motif tools. You can build Xmt applications with Motif 2.0.x and Motif 1.2.x. Exceed XDK provides two pairs of static libraries (`HumXmt.lib` and `XmtStatXm.lib`) can be used with dynamic and static Xm libraries. You can find Xmt header files in folders in this location:

```
C:\Program Files\Hummingbird\Connectivity\Version\Exceed\  
XDK\Include\Xmt
```

These libraries are not yet available for Cygwin.

For complete documentation of the Xmt library, consult *Motif Tools: Streamlined GUI Design and Programming with the Xmt* by David Flanagan (published by O'Reilly & Associates, Inc.).

Note: A license (required to use Xmt libraries) is included with “*Motif Tools: Streamlined GUI Design and Programming with the Xmt*”.

Motif and OpenGL GCC Static Libraries

Motif Widget Set (`libXmSt.a`) and Motif Resource Manager (`libMrmSt.a`) static libraries for Motif 1.2.4, Motif 2.0.3, and Motif 2.1.30 CTL are now available for a gcc compiler under the CYGWIN environments on Win32 systems.

These libraries can be found in the following locations:

- `Home\Xdk\Motif12\Gcc\Lib` (for Motif 1.2.4 applications)
- `Home\Xdk\Gcc\Lib` (for Motif 2.0.3 and OpenGL applications)
- `Home\Xdk\Motif21\Gcc\Lib` (for Motif 2.1.30 CTL applications)

`Home` directory refers to the default location, `C:\Program Files\Hummingbird\Connectivity\version\product`, but another location may be specified in the Open Text Setup Wizard during installation.

GNOME/Linux Files

This version of Exceed XDK provides library and header files for GNOME/Linux development with a CYGWIN gcc compiler. These files can be found in the following location: `Home\Xdk\Gcc\`

Exceed XDK Files

For more information, see “Building a GNOME/Linux X Client Using a CYGWIN GCC Compiler” on page 284.

The table below lists Exceed XDK files that are installed and the directories in which they are installed. *Home* directory refers to the default location C:\Program Files\Hummingbird\Connectivity\version\product but another location may be specified in the Open Text Setup Wizard during installation. There are various types of *User* directories. For more information about installation directories and installed (user) files, see the Installation Guide.

Directory Name	Directory Contents
<i>Home</i>	Xlib.dll, Xt.dll, Xaw.dll, Xm.dll, HCLXt.dll, HCLXaw.dll, HCLXmu.dll, HCLXm.dll, HCLXm12.dll, HCLXm21.dll, HCLIce.dll, HCLXiert.dll, HCLSm.dll, HCLXi.dll, HCLXtst.dll, HCLXp.dll, HCLShm.dll, layout.dll, humxim.dll, humxom_ar.dll, HCLMrm.dll, HCLMrm12.dll, HCLMrm21.dll, HCLXaw3d.dll, HumXpm.dll, HumXRender.dll, HumXRandr.dll, HumXComposite.dll, HumXDamage.dll, HumXEvie.dll, HumXFixes.dll, HumXKBFile.dll, and sample local X clients. Also includes the Motif User Interface Compiler (UIL) and the sample Motif clients. <i>Uil.exe</i> is for use with Motif 2.0.x X clients, <i>Uil12.exe</i> is for use with Motif 1.2.x X clients, and <i>Uil21.exe</i> is for use with Motif 2.1.x X clients.
<i>Home\Xdk\Include\GL</i>	Include files for OpenGL libraries.
<i>Home\Xdk\Include\x11\Glw</i>	Include files for OpenGL libraries.
<i>Home\Xdk\Include\Xmt</i>	Include files for the Motif Tools library.
<i>Home\Xdk\Include\Xm</i>	Include files for the Motif 2.0.x Widget library.
<i>Home\Xdk\Include\Mrm</i>	Include files for the Motif 2.0.x Resource Manager library.
<i>Home\Xdk\Include\UIL</i>	Include files for the Motif 2.0.x User Interface Language library.
<i>Home\Xdk\Motif12\Include\Xm</i>	Include files for the Motif 1.2.x Widget library.
<i>Home\Xdk\Motif12\Include\Mrm</i>	Include files for the Motif 1.2.x Resource Manager library.
<i>Home\Xdk\Motif12\Include\Uil</i>	Include files for the Motif 1.2.x User Interface Language library.
<i>Home\Xdk\Motif21\Include\Xm</i>	Include files for the Motif 2.1.x Widget library.

Directory Name	Directory Contents
<i>Home\Xdk\Motif21\Include\Mrm</i>	Include files for the Motif 2.1.x Resource Manager library.
<i>Home\Xdk\Motif21\Include\Ui1</i>	Include files for the Motif 2.1.x User Interface Language library.
<i>Home\Xdk\Src</i>	Subdirectories containing source code for the sample local X and Motif 2.0.x clients.
<i>Home\Xdk\Lib (32 bit)</i>	Import libraries: <code>Xlib.lib</code> , <code>HCLXmu.lib</code> , <code>HCLSm.lib</code> , <code>HCLIce.lib</code> , <code>HCLXiert.lib</code> , <code>HCLXi.lib</code> , <code>HCLXtst.lib</code> , <code>HCLShm.lib</code> , <code>HCLXp.lib</code> , <code>HumXpm.lib</code> , <code>HumXRendr.dll</code> , <code>HumXRandr.dll</code> , <code>HumXComposite.dll</code> , <code>HumXDamage.dll</code> , <code>HumXEvie.dll</code> , <code>HumXFixes.dll</code> , and <code>HumXKBFile.dll</code> .
<i>Home\Xdk\Libx64 (64 bit)</i>	Combination import libraries and static data: <code>HCLXt.lib</code> , <code>HCLxaw3d.lib</code> , <code>HCLXaw.lib</code> , and <code>XmStatXt.lib</code> .
	Also includes the Motif Widget library <code>HCLXm.lib</code> (import library and static data), <code>XmStatic.lib</code> (static library), the Resource Manager libraries (<code>HCLMrm.lib</code> is the import library and <code>MrmStat.lib</code> is the static library), Motif Tools static libraries <code>HumXmt.lib</code> and <code>XmtStatXm.lib</code> , and the User Interface Language static library (<code>HCLUil.lib</code>) for Motif 2.0.x.
<i>Home\Xdk\Motif12\Lib (32 bit)</i>	The Motif Widget library <code>HCLXm.lib</code> (import library and static data), <code>XmStatic.lib</code> (static library), the Resource Manager libraries (<code>HCLMrm.lib</code> is the import library and <code>MrmStat.lib</code> is the static library), Motif Tools static libraries <code>HumXmt.lib</code> and <code>XmtStatXm.lib</code> , and the User Interface Language static library (<code>HCLUil.lib</code>) for Motif 1.2.x.
<i>Home\Xdk\Motif21\Lib (32 bit)</i>	The Motif Widget library <code>HCLXm.lib</code> (import library and static data), <code>XmStatic.lib</code> (static library), the Resource Manager libraries (<code>HCLMrm.lib</code> is the import library and <code>MrmStat.lib</code> is the static library), and the User Interface Language static library (<code>HCLUil.lib</code>) for Motif 2.1.x.
<i>Home\Xdk\Motif12\Gcc\Lib</i>	GCC import and static libraries for Motif 1.2.x.
<i>Home\Xdk\Motif21\GCC\Lib</i>	GCC import and static libraries for Motif 2.1.x.
<i>Home\Xdk\GCC\Lib</i>	GCC import and static libraries for X, Motif 2.0.x, and OpenGL.
<i>Home\Xdk\GCC\Include</i>	Common include files for GNOME/Linux development.
<i>Home\Xdk\GCC\Include\Gtk</i>	GTK files for GNOME/Linux development.
<i>Home\Xdk\GCC\Include\Gdk</i>	GDK files for GNOME/Linux development.

Directory Name	Directory Contents
<i>Home\Xdk\Include\X11</i>	Include files for compiling local X clients.
<i>Home\Xdk\Include\X11\Extensions</i>	Include files for X Extensions.
<i>Home\Xdk\Include\X11\Bitmaps</i>	X11 bitmap files.
<i>Home\Xdk\Include\X11\Xaw</i>	Include files for the Athena Widget Set.
<i>Home\Xdk\Include\X11\Xmu</i>	Include files for X miscellaneous utility library.
<i>Home\Xdk\Include\X11\Xaw3d</i>	Include files for the Athena 3D Widget Set.
<i>Home\Xdk\Include\X11\Ice</i>	Include files for inter-client exchange library.
<i>Home\Xdk\Include\X11\Sm</i>	Include files for session management library.
<i>User</i>	User-configurable resource files, such as the <i>.Xdefaults</i> file and application resource files (including application resource files for the sample X clients). Also includes the <i>X_Error</i> Database file and the <i>X_Keysym</i> Database file. Any binary User Interface files (<i>.uid</i>) and application resource files for the sample local Motif clients are also located here.
<i>User\Locale</i>	Contains locale files database, locale aliases database, and various subdirectories containing locale database files for each different locale.
<i>User\SJ3</i>	Supporting directories for Kinput2 (Japanese XIM server).
<i>User\SJ3DEF</i>	

For more information regarding the files included in Exceed XDK, see the file *XDKFiles.txt* located in your *Home\Info* directory.

Exceed XDK Runtime Control Variables

Runtime control over Exceed XDK libraries is provided with the settings described in the table at the end of this section. These settings are defined in the environment or the registry database. Exceed XDK initially searches for runtime control variables in the environment (set with the DOS command SET). If it cannot find the variables there, it searches the registry database for the variable values under the following keys:

- If you installed the software for use by a single user:
HKEY_CURRENT_USER\Software\Hummingbird\Connectivity\
version\Exceed\XDK
- If you installed the software for use by multiple users:
HKEY_LOCAL_MACHINE\Software\Hummingbird\Connectivity\
version\Exceed\Xdk
where *version* is the version number of the software.

If Exceed XDK cannot find the variable values in these locations, it searches under the Exceed key in the same order.

Some of these entries replace the corresponding environment variables described in the MIT X Window documentation. If a variable is not defined, then the default value is used.

Note: When specifying values for these variables, the path specifications must follow the DOS or NTFS conventions.

The following table lists and describes Exceed XDK runtime variables.

Variable Name	Description and Default
BITMAPDIR	The location of the directory containing bitmaps read by clients at runtime. Default: <i>Home\Xdk\Include\X11\Bitmaps</i>
DISPLAY	The name of the default display on which local X clients are displayed. The display name should also include the display number. Default: LOCALPC:0.0 Note: LOCALPC is a special keyword indicating that local X clients should be displayed on the local PC.
HOME	The equivalent of your <i>Home</i> directory on UNIX. It is added to the search path for several types of files. Default: Exceed <i>Home</i> directory.
HOMEDIR	HOMEDIR=drive: path Default: Exceed <i>Home</i> directory.
LANG	If you are running Local X clients, LANG defines the locale that you want to use. For example, to use Japanese, you would set LANG to ja_JP.SJIS or to japanese. You can put your language-specific resource files under <i>User\LANG</i> . Also, if you are developing local X clients, you need to call <code>setlocale(LC_ALL, "")</code> to indicate to the C runtime library that your application will use the locale associated with the LANG environment variable instead of the C locale. Default: the default system locale.
LOGFILE (XDK-specific variable)	The name of the file to which Local X Console messages are logged. Logging only occurs if the LOGGING variable (described below) is set to YES. For more information, see the <i>Exceed User's Guide</i> . Default: <i>User\XLib.log</i>
LOGGING	Specifies whether messages are logged to a file. If this variable is set to YES, then messages sent to the Local X Console are logged to a file. Otherwise, messages are not logged. For more information, see the <i>Exceed User's Guide</i> . The name of the log file is specified by the LOGFILE variable (described above). Default: YES

Variable Name	Description and Default
MULTITHREADALERT (XDK-specific variable)	<p>Specifies an action the X client can take if it is multithreaded and is experiencing problems (such as freezing until the mouse is moved). You can specify one of three values: 0, 1, or 2.</p> <p>The first option (0) sets the X client to do nothing.</p> <p>The second option (1) sets the X client to be ready for <code>XtAppAddInput</code> or <code>XtAppAddTimeOut</code> (either of which is set by another thread).</p> <p>The third option (2) sets the X client to be ready for <code>XtAppAddInput</code> or <code>XtAppAddTimeOut</code> (set by another thread) and gives the client protection from freezing when there is no X event data to read.</p> <p>All three options can reside under the <code>Exceed</code> or <code>Xdk</code> keys. All have a string value.</p> <p>Default: 0 (do nothing)</p>
NAMEDPIPEONBREAK (XDK-specific variable)	<p>Specifies a behavior if Named Pipe is closed or broken. This variable can have one of two values: 0 or 1.</p> <p>The first option (0) calls a designated callback function only when some data is found. This functionality is consistent with how Named Pipe Xt Input function was handled in versions of Exceed XDK prior to version 8.0.</p> <p>The second option (1) calls a specified callback function when data was found or if Named Pipe is closed or broken.</p> <p>Default: 0</p>
RESOURCE_NAME	<p>The default file name of an X resource.</p> <p>Default: the client's name.</p>
RUNXSERVERIPADDR (XDK-specific variable)	<p>Specifies a local host name to start the X server automatically. For example, you can specify this variable as either 127.0.0.1 or <code>DisplayName</code>, where the first is a specific IP address and the second is your local display name.</p> <p>If you do not specify this variable, the display is treated as a remote one.</p> <p>Default: not specified.</p>
UIDPATH	<pre>UIDPATH=%U;drive:path\%U; drive:path\%U Default:%U;XAPPLRESDIR\%U; HOME\%U</pre>

Variable Name	Description and Default
WMDPATH	WMDPATH=%S;drive:path\%S; drive:path\%S Default: %S;XAPPLRESDIR\%S; HOME\%S
XAPPLRESDIR	The directory containing the xt resource files. The format is: XAPPLRESDIR=drive:path Default: Exceed <i>User</i> directory.
XBMLANGPATH	XBMLANGPATH=%B; drive:path\%B;drive:path\%B Default: %B;XAPPLRESDIR\%B; HOME\%B
XENVIRONMENT	The full path and file name of an xdefaults file (if you create one). Default: <i>User</i> \.Xdefaults
XFILESEARCHPATH & XUSERFILESEARCHPATH	The full path for xt resource files. The syntax for these paths is described in the MIT documentation for the X Window System. If a path contains more than one directory, use a semicolon (;) to separate them. Default: Depends on the values for your Exceed <i>Home</i> directory and XAPPLRESDIR described above.
XKEYSYMDB	The full path and file name of an X keysym database. Default: <i>User</i> \Xkeysymdb
XLOCALEDIR	The directory containing locale database and alias files. Default: <i>User</i> \LOCALE
XMODIFIERS	Specifies how the locale modifiers are configured. Default: not specified.
XSERVERCONNECTION RETRIES (XDK-specific variable)	Specifies the number of attempts made by the local X client to establish a server connection. Default: 3 attempts.

Exceed XDK Tools

The following tools are shipped with Exceed XDK.

MWM

MWM is a local implementation of the Motif window manager. To access MWM, navigate to the Open Text Exceed XDK program group, and then click MWM.



Kinput2 XIM Server

Kinput2 XIM Server is an input server for X11R6 applications requiring Japanese text input, including Kana-Kanji conversion. To access Kinput2 XIM Server, navigate to the Open Text Exceed program group, point to Exceed Tools, and click Kinput2 XIM Server.

Chapter 9

Developing Local X Clients

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About Developing Local X Clients

For more information, see "Developing Local X Applications Using Visual C++" on page 266 and "Local X Console Application" on page 267.

You can use the contents of the Exceed XDK in conjunction with an application development tool to create a local X client. The Exceed XDK lets you create two types of local X client applications:

- GUI application (Win32)—Makes use of the Local X Console application to display output.
- Console application—Runs in a DOS shell. These applications use STDIN for console input and STDOUT and STDERR for console output.

Methods for Creating X Clients

You can create a local X client of either type with one of two methods: you can write your own code, or you can port an existing client from the UNIX or Linux host to your PC and rebuild. When Microsoft Visual C++ is used, your client code must reflect the differences between the X Window System (as described in MIT documentation) and Exceed XDK, and, more importantly, between Microsoft Visual C++ and UNIX C/C++ standard functions and header files.

In most cases, when you use CYGWIN GCC compilers and the Exceed XDK development environment, you do not have to change your code. To develop local X clients, you must have programming knowledge of these operating systems and the X Window System.

For important information on redistributing Exceed XDK components with your local clients, please contact your sales representative.

Development Overview

This section describes what you need to know about Exceed XDK in order to develop a local X client.

Functions Specific to the Exceed XDK

The following additional functions are included in the Exceed XDK. They are specific to the Open Text implementation of Xlib.

Function	Description	
HCLSelect	Used in conjunction with the <code>xConnectionNumber</code> API to check the status of connections.	
lprintf	hfprintf	Prints to both the Local X Console (system console) and the log file (if logging is turned on).
lfprintf	hputc	
lputchar	hfputc	
lputc	hputs	These functions replace the original functions and those similar to the original ones (<code>printf</code> , <code>fprintf</code> , <code>fputchar</code> , <code>putc</code> , <code>puts</code> , <code>fputc</code> , <code>fputs</code> , <code>perror</code>).
lputs	hperror	
lputc		
lputs		
lperror		
Xgetenv	Xgetenv is similar to <code>getenv</code> function except it returns environment variables related to X/Motif. Replaces the system <code>getenv</code> function when <code>XGETENV</code> is defined as a compiler flag.	
gettimeofday	Returns the time of day. This function is accurate to a millisecond.	

Note: For functions that take file ID as a first parameter, the redirection works for only `SYSERR` and `SYSOUT`. Otherwise, they work the same as the original ones.

The prototypes for the above functions are provided in the `XlibXtra.h` and `X.h` files in the `home\XDK\INCLUDE\X11` directory, where `home` is the directory in which the software is installed.

Previous versions of the Exceed XDK also included functions for initializing the Xlib, Xaw, Xm, and Xt libraries (`HCLXlibInit`, `HCLXawInit`, `HCLXmInit`, and `HCLXtInit`). In this latest version, however, initialization is hidden so that it is transparent for porting, meaning that you no longer need to call an initialization function. If for some reason your compiler has difficulty with Xm initialization, you may need to add `MOTIFAPP` as an additional preprocessor definition; for more information, see “Troubleshooting” on page 285.

Memory Management

Xlib contains its own memory management routines, including `Xfree`, `Xmalloc`, and `Xcalloc`. In order to maintain compatibility with future versions of the Exceed XDK, use these routines instead of Microsoft WIN32 memory management routines.

Memory allocated by these Xlib routines should be freed using Xlib routines. Similarly, memory that is freed using Xlib routines should be allocated by Xlib routines.

XtAppAddInput Function

The `XtAppAddInput` function supports the following input types:

Type	Mask
HCL socket	<code>XtInputReadMask</code> , <code>XtInputWriteMask</code> , <code>XtInputExceptMask</code>
Winsock socket	<code>XtInputReadWinsock</code> , <code>XtInputWriteWinsock</code>
File	<code>XtInputReadFileHandle</code>
Pipe	<code>XtInputReadFileHandle</code>
Named pipe	<code>XtInputReadNamedPipe</code>

Gethostname Function

Xlib.dll exports the gethostname function. A function by this name is also exported by the Windows Sockets .dll.

We do not recommend that you use the Xlib.dll version of this function; it is provided by Xlib only for backwards compatibility. In order to ensure that you are using the Windows Sockets version of this function, and not the Xlib.dll version, your link statement must include Wsock32.lib before Xlib.lib.

Checking X Connection Status

You can use the HCLSelect API in conjunction with XConnectionNumber to check the status of X connections. The HCLSelect API takes the same parameters and returns the same type as the Windows Sockets select API. The only difference between the two APIs is that HCLSelect supports connection numbers as returned by Xlib, while select does not.

The following example shows how to use the HCLSelect API. This example specifies a connection number (*i*) and then requests various types of information (&rfds, &wfds, &efds, &nowait) about that connection.

```
i = XConnectionNumber(dpy);  
FD_SET(i, &rfds);  
n = HCLSelect(0, &rfds, &wfds, &efds, &nowait);
```

Starting a Microsoft Application Inside an X Application

To start a Microsoft application (such as Internet Explorer), inside an X application, and give it focus, use the HumAllowSetFocusWindow function:

```
void HumAllowSetFocusWindow(Display *dpy, DWORD pid)
```

where *Display *dpy* points to the display structure of the X application, and *DWORD pid* is the process identification of the Microsoft application.

Setting the Locale for an X Client

For more information about setting locales, see the LANG environment variable description in “Exceed XDK Runtime Control Variables” on page 251.

The runtime control variable XLOCALEDIR replaces XNLSPATH used in X11R5. The default value for XLOCALEDIR is `user\LOCALE`. The `locale.dir` file (in `user\LOCALE`) replaces the `nls.dir` file used in X11R5.

Locale aliases are supported. You can specify your locale alias in the `locale.alias` file in the `user\LOCALE` directory.

Setting the proper locale in your X client depends on the following conditions.

Same Encoding in the Operating System and the X Client

If you are developing an X Toolkit application and the encoding of your operating system is the same as that for your X client, you do not need to specify a `setlocale` function because it will be called automatically from inside the `Hclxt.dll`.

Different Encoding in the Operating System and the X Client

If you are developing an X Toolkit application and the encoding of your operating system is different than that for your X client, you should not use the system `setlocale` function. Rather, you should call the `_Xsetlocale` function; you can call it explicitly or use the `X_LOCALE` macro to call it.

Use this function in two ways:

- Specify a second parameter of the `_Xsetlocale` function. For example:

```
_Xsetlocale(LC_ALL, "jaJP.euc");
```

where `jaJP.euc` is the locale and encoding name.

- Do not specify a second parameter and instead set the `LANG` variable. For example:

```
_Xsetlocale(LC_ALL, "");
```

You then need to set the `LANG` variable to `jaJP.euc`.

Accepting Localized Input

X11R6 XIM support is included on the server side. This support lets local X clients accept localized input when displaying to an X server that supports X11R6 XIM (such as the X Server in Exceed 6.0.2 or higher).

Header File Type Renaming

The type `BOOL` in the X header files has been renamed to `XBOOL` to resolve possible conflicts with the Windows header file definition. This renaming is the same as in previous versions of the Exceed XDK.

Using Multiple Screens for Local X Clients

The Exceed XDK lets you use different screens with your local X clients. If the display name is specified as `:0.X` (where `X` is the screen number), Xlib assumes that the local client is to be displayed locally to `LOCALPC:0.X`.

Storing X Image Data in a Memory Segment

The shared-memory extension allows local X clients to store Ximage data in a memory segment that is shared with the local X server. When you work with large images, this facility can greatly enhance performance because you do not have to send the Ximage over the Xlib interprocess communication channel.

When using the shared-memory extension, make sure that the MIT-SHM option is enabled.

To use shared-memory Ximages:

- 1 Create the shared memory Ximage structure.
- 2 Create a shared memory segment to store the image data.
- 3 Inform the X server about the shared memory segment.
- 4 Use the shared Ximage much like a normal image.

For more information, refer to the MIT documentation.

To enable the MIT-SHM option:

- 1 Run the Xconfig utility.
- 2 Double-click the Protocols icon.
- 3 In the Protocols dialog box, click Extensions.
- 4 Enable the MIT-SHM option.

Exceed XDK Shared Memory Extension Files

Use the following files with the Exceed XDK shared memory extension. In this table, the *home* directory refers to the directory in which the software is installed.

For example:

C:\Program Files\Hummingbird\Connectivity\version\Exceed\

where *version* is the version number of the software.

File Name	Description
Hclshm.dll	This .dll contains an implementation of the following four UNIX <code>shm</code> functions: <code>shmget</code> , <code>shmat</code> , <code>shmdt</code> , and <code>shmctl</code> . It is located in your <i>home</i> directory.
HCLSHM.h	This include file contains UNIX <code>shm</code> function prototypes that are not part of X11R6.8. It is located in your <i>home\XDK\INCLUDE\X11</i> directory. Note: This header file includes the <code>shm.h</code> file. If you are using any <code>shm</code> definitions in addition to functions, then only this file needs to be included.
SHM.h	This header file contains the UNIX <code>shm</code> definitions. It is located in your <i>home\XDK\INCLUDE\X11</i> directory.
HCLSHM.lib	This file is the Import library for the <code>Hclshm.dll</code> . It is located in your <i>home\XDK\LIB</i> directory.

Note: The SHM functions do not represent a complete UNIX implementation. You can use these functions to share memory only between local X clients developed for use with the Exceed X server. You cannot use these functions for any other purpose.

Restrictions on the Exceed XDK Shared-Memory Extension

The restrictions on the Exceed XDK Shared-Memory Extension are as follows:

- Shared-memory pixmaps are not supported.
- You can share memory between X clients and an Exceed X server only when they are running on the same computer.

Developing Local X Applications Using Visual C++ ---

Developing GUI (Windows) Applications

If you are creating a GUI application, your local client application requires a `WinMain` procedure. A `WinMain` procedure is provided in the static part of the library `Xlib.lib`, located in the `home\XDK\LIB` directory. The `WinMain` procedure in the `Xlib` library calls your main procedure.

If you are porting a client receiving input via `STDIN`, use an alternate method of receiving input, such as a Windows dialog box.

`lprintf` and other Exceed XDK print functions provided in `Xlib.dll` are similar to the standard C print function, except they redirect output to the Local X Console and `Xlib` log file (when the `LOGGING` flag is set to "YES"). However, output strings are limited to 2 KB per function call.

Compiling and Linking

When creating a GUI application, you also need the standard files required for compiling and linking a Microsoft Windows 32- or 64-bit application (for example, an `.rc` resource file).

Developing Console Applications

To develop local X clients as console applications, you need to compile and link your application as a console application type.

Local X Console Application

The complete menu structure of the Local X Console application is shown in the table below:

Menu	Function Name	Function Definition
File	Save/Save As	Saves the contents of the local console to a file.
	Print	Prints the contents of the local console.
Edit	Copy	Copies the selected contents of the local console to the Windows clipboard.
	Clear All	Clears the entire contents of the local console.
	Select All	Selects the entire contents of the local console.
	Undo	Undoes the previous "Clear All" operation.
	Find	Finds a string in the local console.
	Find Next	Finds the next string in the local console.
View	Toolbar	Enables you to display or hide the toolbar.
Client Control	Client Manager	Displays the Client Manager dialog box.
Option	Close on last exit	Closes the local console dialog box when the last local X client is closed.
Help	Help	Loads the Help.

Developing Local Motif Clients

This section builds on the general information provided in “Development Overview” on page 260. After you have familiarized yourself with that information, read this section for Motif-specific instructions.

The Exceed XDK provides the source code and makefile for two sample local Motif clients, as shown in the following table.

Client Name	Code Location
HelloMotif	<i>home\XDK\SRC\HELLOMOT</i> directory
Periodic	<i>home\XDK\SRC\PERIODIC</i> directory

You can study the source code as examples of Motif clients modified to run locally. For important information on redistributing Motif Development Kit components with your local clients, refer to the license agreement.

Using Editres

You can also use Editres, a tool that lets you view the full widget hierarchy of any X Toolkit application that speaks the Editres protocol.

To use Editres with a Motif application, you need to make the following changes to your source code.

- 1 Add the following code right after the application’s shell widget (in this case, `toplevel`) is created:

```
XtAddEventHandler(toplevel, (EventMask) 0, TRUE,  
_XEditResCheckMessages, NULL);
```

- 2 When you compile, make sure you link against `HCLXmu.lib` (because it has the `_XEditResCheckMessages` function inside).

Creating Support for Wheel Mouse

The Exceed XDK supports wheel mouse functionality for text-related Motif widgets.

To create support for a while mouse, users of the local Motif X client must configure the appropriate X Server setting. For example, if they are using Exceed as the X server, they must:

- 1 Open XConfig by doing one of the following:
 - On the Exceed Tools menu, click Configuration.
 - On the Exceed toolbar, or double-click the Xconfig icon.
- 2 In the Mouse Input dialog box, select the *Wheel Movement Sends Mouse Button Event (Button 4/5)* option.
Button event 4 should be used for “Up” and button event 5 should be used for “Down”.

Linking with Visual C++ and GCC Static Motif Libraries

If you are linking with the static version of the Motif libraries (`XmStatic.lib`), define the symbol `XMSTATIC` in your compiler preprocessor definitions. Doing so ensures that you use the correct prototype definitions when you compile. Use `MrmStat.lib` (static Mrm library) with `XmStatic.lib`.

Using XT with XmStatic.lib

Also, if you are linking with `XmStatic.lib`, link with the library `Xmstatxt.lib` instead of `Hclxt.lib`. You must use `Hclxt.lib` if you are using the `.dll` version of Motif and linking with `Hclxm.lib`.

Linking with GCC Static Motif Libraries

To link against GCC static Motif libraries, use `libXmSt.a` and `libMrmSt.a` instead of `libXm.a` and `libMrm.a`.

Compiling the UIL Files of Local Motif Clients

You can compile a local .uil file of a Motif client using the Motif UIL Compiler, which is itself a local Motif client. It can be found in the Exceed *home* directory. There are three versions of the UIL compiler: *UIL.exe* is for use with Motif 2.0.x X clients, *UIL12.exe* is for use with Motif 1.2.x X clients, and *UIL21.exe* is for use with Motif 2.1.30 CTL.

To use the Motif UIL compiler, type the following command:

```
home\uil.exe file name -o binfile
```

where *home* is the directory in which the software is installed, *file name* is an ASCII text file written in the Motif UIL and *-o binfile* specifies the output file for the generated binary code.

For example:

```
"c:\Program Files\Hummingbird\Connectivity\version\  
Exceed\uil.exe" <CR>  
  
"c:\Program Files\Hummingbird\Connectivity\version\  
Exceed\XDK\Src\Hellomotif\hellomotif.uil" -o <CR>  
  
"c:\Program Files\Hummingbird\Connectivity\version\  
Exceed\XDK\Src\Hellomotif\hellomotif.uid" <CR>
```

where *version* is the version number of the software and <CR> indicates that the given text must be entered as one line with a carriage return at the end.

Creating .dlls Containing Standard or Custom Widget Classes

When creating a .dll, you can use the standard widget classes that come with the Exceed XDK or you can define custom widget classes. If you choose to define custom widget classes, read this entire section to note compiler differences.

Specifying Widget Classes

You cannot directly specify a widget class structure name; you need to use a pointer to it instead. You have the following options:

- `CustomClassRec`—Cannot be specified inside the .dll
- `CustomWidgetClass`—Can be specified inside the .dll

Use the following function to initialize a custom widget class .dll:

```
void HCLXmVaFixWCs(customWidgetClass1, superclass1,  
customWidgetClass2, superclass2, ... , NULL);
```

This function is used for proper superclass assignment in a .dll. It should be called from the inside of the .dll to initialize it. The first parameter of each pair specifies the new widget class. The second parameter of each pair specifies the superclass for the new widget class. You can add multiple pairs in the string depending on the number of new widget classes you want to create, though the final parameter of the string must be NULL.

Note: In earlier versions of the Exceed XDK, you could use the `HCLFixStPointers` and `HCLFixWidgetClass` functions to create a custom widget class. These two functions are still supported, but their functionality has been combined into the new `HCLXmVaFixWCs` function.

Using Custom Widget Classes for a Microsoft Visual C++ Compiler

When creating .dlls involving custom widget classes, you must use the `_declspec(dllexport)` declaration for each widget class in the .dll. These special declarations allow proper address references to widget classes when importing them in another .dll.

When creating an executable or a .dll that uses a custom widget classes .dll, you must use `_declspec(dllimport)` to import the custom widget classes.

Using Custom Widget Classes for a GCC Compiler

You must call the `HCLXmInitDll` function from inside the .dll to initialize the widget classes.

Developing Local OpenGL X Applications

Exceed XDK provides a full suite of GLX libraries and tools required for developing three-dimensional OpenGL X applications on Windows systems.

Using the OpenGL X Development Kit

The OpenGL X Development Kit supports the following:

Libraries	Description
hclglx.lib libglx.a	The core set of GLX functions. All functions are prefixed with gl or glX.
hclglu.lib libglu.a	The OpenGL Utility support library (except all NURBS functions). All functions are prefixed with glu.
hclnurbs.lib libnurbs.a	All Non-Uniform Rational B-Spline (NURBS) functions from the OpenGL Utility library. All functions are prefixed with glu.
hclaux.lib libaux.a	The auxiliary library, providing a simple interface that is independent of the Window System. All functions are prefixed with aux and tk.
hclglut.lib libglut.a	The OpenGL Utility Toolkit library. All functions are prefixed with glut.
glwstati.lib libglw.a	The OpenGL Drawing Area Widget static library. It lets you draw 3D graphics using one visual and a 2D user interface using another visual. Note: If you use two different visuals, your application may not display the correct colors simultaneously. Specifically, if your 3D graphics use the RGBA color mode (the TrueColor visual) and your 2D user interface uses the default visual, set the Xconfig Server Visual Screen Definition setting to TrueColor.

Exceed XDK includes dynamic link libraries for creating OpenGL X applications. Developers who resell commercial OpenGL X applications created with these libraries are not required to pay licensing fees.

Note: If you use Motif dynamic link libraries, you need to pay royalties to OSF. For more information, see the Licensing Agreement shipped with this product.

Developing Local Arabic or Hebrew Clients Using CTL

If you are using Motif 2.1.30 with Complex Text Layout (CTL), you can develop context-sensitive Arabic or Hebrew applications.

This section builds on the general information provided in “Development Overview” on page 260. After you have familiarized yourself with that information, use this procedure for Arabic- or Hebrew-specific instructions.

The Exceed XDK supports Windows TrueType fonts for the Arabic language. As well, in addition to UNIX encoding for the Arabic language (ISO 8859-6), you can now use Windows encoding 1256 (described in step 3 of the procedure below). For Hebrew applications, CTL layout methods are only used when you set the locale to `IW`.

To develop an Arabic or Hebrew application with Motif 2.1.30 CTL:

- 1 Develop your source code in accordance with X11 standards.
- 2 Build your application using the `hclxm.lib` (Xm library) and Motif header files (located in the `home\XDK\MOTIF21\LIB\` directory, where `home` is the directory in which you installed the software), as well as any other necessary files.

- 3 Call the `_XsetLocale` function at the beginning of your application's source "main" function.

For Arabic applications	<ul style="list-style-type: none">• For UNIX encoding, set the locale to <code>ar_CTL</code>:
-------------------------	---

`_XsetLocale(0, "ar_CTL");`

- For Windows encoding, set the locale to `ar_WINCTL`:

`_XsetLocale(0, "ar_WINCTL");`

For Hebrew applications	<ul style="list-style-type: none">• Set the locale to <code>IW</code>:
-------------------------	--

`_XsetLocale(0, "IW");`

- 4 Define CTL as a preprocessor definition when you compile your application. If you are using Microsoft Visual C++ Studio (version 6.0 or later), you can add preprocessor definitions by doing the following:
- On the Project menu, click Settings and then click the C/C++ tab. In the upper left of the tab, from the Settings For drop-down list, select All Configurations.
 - From the Category drop-down list, select Preprocessor. In the Preprocessor definitions field, add the string CTL.
 - Click OK to save the settings and exit the dialog box.
- 5 Compile and link your project.

Developing Local X Clients Using Dynamic Load of XLC/XIM/XOM

Xlib.dll (part of the Exceed XDK) partially supports the X11 Internationalization (I18N) from Sun Microsystems. With this functionality, you can dynamically load XIM, XOM, and XLC modules. Use this functionality to switch to a different language on the fly.

Note: For this functionality to work, you must write the appropriate code to support this functionality, and you need to have the correct language-specific XLC, XIM, and XOM .dll files.

Activating the Functionality

If you make no changes to your code, Xlib.dll treats XLC, XIM, and XOM as an integrated part of the X11 binary. It does not dynamically load them.

To activate a dynamic load regime of XLC, XIM, and XOM, you need to specify USE_DYNAMIC_XIO as a compiler flag when you build the application:

```
-DUSE_DYNAMIC_XIO
```

You also need to supply the application with an information file (XI18N_OBJS) that lists the required XLC, XIM, and XOM .dll files. Make sure this information file is in the following directory:

```
USERDIR\LOCALE\<local_name>
```

Building an X Client Using Visual C++

This section describes how to build an X client using a Visual C++ development tool. It assumes the following:

- You have read the general development notes previous to this section, as well as the sections specific to GUI, console, Motif, or Arabic/Hebrew X clients (depending on the type of application you are developing).
- You have already written the source code (taking into account the development information described in the earlier sections of this chapter) or ported existing code from a UNIX machine to your PC. All source code must be compliant with X11 standards.

Once you have the source code and are familiar with the Exceed XDK development particulars, you can use this section to learn how to:

- Prepare your source code for Visual C++ use.
- Create and build a project using the Exceed XDK Application Wizard, a component of Microsoft Visual C++ Studio (version 6.0 or later); this method is the most automated.
- Create and build a project manually using any version of Microsoft Visual C++ Studio.
- Build an X client using a makefile.

For information about building an X client using a CYGWIN GCC compiler, see “Building an X Client Using a CYGWIN GCC Compiler” on page 283 and “Building a GNOME/Linux X Client Using a CYGWIN GCC Compiler” on page 284.

Preparing the Source Code for Visual C++ Use

Once you have written or ported the source code for the X client, you need to prepare it in the following way. Regardless of whether you are using the Exceed XDK Application Wizard, creating and building a project manually, or using a makefile, you must follow this procedure.

To prepare your code for Visual C++ development:

For more information, see "Memory Management" on page 261.

- 1 In the source code, change memory allocation and de-allocation routines to their Xlib counterparts.
- 2 Check for any incompatibilities between Windows and UNIX, including the following:
 - a) Ensure that there is no UNIX-dependent code that is incompatible with Microsoft Windows. For example, you must rewrite code that uses such items as timers, mailboxes, and `STDIN` (for GUI applications).
 - b) Ensure that the code does not use any keywords reserved for the Windows C compiler as variables, labels, or application-defined function names.
- 3 Ensure that all functions are properly prototyped.

The prototypes for functions specific to the HCL implementation of Xlib are provided in the `XlibXtra.h` and `X.h` files in the `home\XDK\INCLUDE\X11` directory (where `home` is the directory in which you installed the software).
- 4 Compile and link your client.

Using the Exceed XDK Application Wizard

The Exceed XDK Application Wizard lets you build Motif and X Window projects; it operates within the user interface of Microsoft Visual C++ Studio (Version 6.0 or later). You can use the wizard to create an empty project that has the proper include paths, preprocessor definitions, and link libraries.

When using the Exceed XDK Application Wizard, you can choose one of the following application-type options from the drop-down list.

This Option...	Creates an Empty Project that Contains:
Athena Widget	The Athena Widget Set Library, along with necessary lower-level libraries.
Motif 1.2.4	The Motif library for version 1.2.4, along with necessary lower-level libraries.
Motif 2.0.3.	The Motif library for version 2.0.3, along with necessary lower-level libraries.
Motif 2.1 CTL	The Motif library for version 2.1.30 with Arabic or Hebrew CTL support, along with necessary lower-level libraries.
MRM 1.2.4	The MRM and Motif libraries for version 1.2.4, along with necessary lower-level libraries.
MRM 2.0.3	The MRM and Motif libraries for version 2.0.3, along with necessary lower-level libraries.
MRM 2.1	The MRM and Motif libraries for version 2.1 with Arabic CTL support, along with necessary lower-level libraries.
X only	Only the X11 library.
Xt Application	The XT and X11 libraries for version 1.2.4, along with necessary lower-level libraries.

After you click Finish in the wizard, a screen shows a summary of your choices.

The wizard also lets you choose the following project options:

GUI Application—The wizard creates an empty GUI application in the type that you specify above. If you do not click this option, the wizard creates a console application.

Static Motif Libraries—The wizard uses static versions of MRM and/or Motif libraries to create the project. If you do not click this option, the wizard uses .dll versions.

.dll—The wizard creates an empty project that can produce a .dll. If you do not select this option, the project will produce an executable.

Loadable X i18n Architecture—Defines a preprocessor macro that forces the XDK to use dynamic logging of XLC, XIM, and XOM.

To create and build a project using the Exceed XDK Application Wizard:

- 1 Create an empty Visual C project:
 - a) On the File menu of Microsoft Visual C++ Studio, click New and then click the Projects tab.
 - b) Double-click the Exceed XDK AppWizard icon.
 - c) In the wizard, specify a location for the project. You can browse for a location or type one directly into the field. For example:

```
C:\Program Files\Hummingbird\Connectivity\version\
Exceed\XDK\SRC\
```

where *version* is the version number of the software.
 - d) Specify a project name and click OK.
 - e) Select an application type (such as Athena Widget) and click Finish. Scan the resulting new project information to make sure it is correct and click OK.
- 2 On the Project menu, click Add To Project, Files. Add all source files to the project.
- 3 If needed, include additional libraries:
 - a) On the Project menu, click Settings and click the Link tab.
 - b) In the upper left of the tab, from the Settings For drop-down list, select All Configurations.
 - c) From the Category drop-down list on the tab, select Input; type the library paths in the Object/Library Modules field.
 - d) When finished, click OK to save the settings and close the dialog box.
- For most application types, the wizard automatically includes the standard libraries, but you may want to customize the settings or add additional ones.
- 4 On the Build menu, click Build *ProjectName* (where *ProjectName* is the name of your project that Visual Studio automatically inserts into the menu item).

- 5 On the Build menu, click Execute *ProjectName* (where *ProjectName* is the name of your project that Visual Studio automatically inserts into the menu item).

Note: If the Exceed directory is not included in the default project path, the execution may not work. In this case, do the following:

- On the Project menu of Microsoft Visual C++ Studio, click Settings and click the Debug tab.
- From the Category drop-down list, choose General.
- Type the Exceed directory path into the Working Directory field.
- On the Build menu, click Execute ProjectName (where ProjectName is the name of your project that Visual Studio automatically inserts into the menu item).

Creating and Building a Project Manually

Instead of using the Exceed XDK Application Wizard, which requires version 6.0 (or later) of Microsoft Visual C++ Studio, you can build a Visual C++ project manually.

To create and build a project manually:

- 1 Create an empty Visual C project:
 - a) On the File menu of Microsoft Visual C++ Studio, click New and then click the Projects tab.
 - b) In the main window of this tab, select either Win32 Application (for a GUI application) or Win32 Console Application (for a console application).
 - c) Specify a location for the project. You can browse for a location or type one directly into the field. For example:
`C:\Program Files\Hummingbird\Connectivity\version\
Exceed\XDK\SRC\`
where *version* is the version number of the software.
 - d) Specify a project name and click OK.

-
-
-
-
- e) In the resulting dialog box, choose to create an empty project and click Finish. Scan the resulting new project information to make sure it is correct and click OK.
- 2 Customize the project to work with the Exceed XDK:
 - a) On the Project menu, click Settings and then click the C/C++ tab. In the upper left of the tab, from the Settings For drop-down list, select All Configurations. (All of the subsequent settings described in this procedure, regardless of the tab on which they are located, should be for All Configurations).
 - b) From the Category drop-down list, select Code Generation. From the Use Run-time Library drop-down list, select Multithreaded .dll.
 - c) From the Category drop-down list, select Preprocessor. In the Include Additional Directories field, type the Exceed XDK include path (the location at which you've installed the Exceed XDK include files). For example:

```
C:\Program Files\Hummingbird\Connectivity\version\  
Exceed\XDK\include\
```

where *version* is the version number of the software.
 - d) Click the Link tab of the Settings dialog box. From the Category drop-down list, select Input. In the Additional Library Path field, type the Exceed XDK lib path (the location at which you've installed the Exceed XDK lib files). For example:

```
C:\Program Files\Hummingbird\Connectivity\version\  
Exceed\XDK\lib\
```
 - e) When finished, click OK to save the settings and close the dialog box.
- 3 On the Project menu, click Add To Project, Files. Add all source files to the project.

- 4 On the Project menu, click Settings and then click the Link tab. From the Category drop-down list, select Input. In the Object/Library Modules field, type the names of the necessary libraries for the X client.

For example:

```
HCLSm.lib HclXaw.lib HclXmu.lib HclXt.lib xlib.lib
```

When finished, click OK to save the settings and close the dialog box.

- 5 On the Build menu, click Build *ProjectName* (where *ProjectName* is the name of your project that Visual Studio automatically inserts into the menu item).
- 6 On the Build menu, click Execute *ProjectName* (where *ProjectName* is the name of your project that Visual Studio automatically inserts into the menu item).

Note: If the Exceed directory is not included in the default project path, the execution may not work. In this case, do the following:

- On the Project menu of Microsoft Visual C++ Studio, click Settings and click the Debug tab.
- From the Category drop-down list, choose General.
- Type the Exceed directory path into the Working Directory field.
- On the Build menu, click Execute ProjectName (where ProjectName is the name of your project that Visual Studio automatically inserts into the menu item).

Building an X Client Using a Makefile

You can build an X client using a Microsoft Visual C++ makefile.

To build an X client using a makefile:

- 1 Locate the source files for the X client (either files you have written from scratch or ones you have copied from the UNIX host to your PC).
- 2 Create a makefile that contains the proper Exceed XDK include and library paths.
- 3 Build the application.

Building an X Client Using a CYGWIN GCC Compiler

The following procedure describes how to build an X client using either a CYGWIN GCC compiler.

To build an X client using a GCC compiler:

- 1 Locate the source files for the X client (either files you have written from scratch or ones you have copied from the UNIX host to your PC).
- 2 Do one of the following:
 - From the command line, start the GCC compiler, specifying proper Exceed XDK include and library paths and other parameters.
 - Create a makefile that includes the proper Exceed XDK include and library paths. You may also want to specify additional compiler-specific options in the updated makefile.
- 3 Compile and link your X client using the CYGWIN shell.

Building a GNOME/Linux X Client Using a CYGWIN GCC Compiler

The following procedure describes how to build a GNOME/Linux X client using a CYGWIN GCC compiler.

You can find the required libraries and header files in the following location:

home\XDK\GCC\

where *home* refers to the directory in which the Exceed XDK software is installed.

To build a GNOME/Linux X client using a GCC compiler:

- 1 Locate the source files for the X client (either files you have written from scratch or ones you have copied from the Linux host to your PC).
- 2 Do one of the following:
 - From the command line, start the GCC compiler, specifying proper Exceed XDK include and library paths and other parameters.
 - Create a makefile that includes the proper Exceed XDK include and library paths. You may also want to specify additional compiler-specific options in the updated makefile.
- 3 Compile and link your X client using the CYGWIN shell.

Troubleshooting

This section provides some problem-solving tips for problems commonly encountered when developing local X clients with the Exceed XDK.

- If you are developing an internationalized client and your operating system's encoding is different than that for your X client, you need to call the `_Xsetlocale` function. For more information, see “Setting the Locale for an X Client” on page 263.
- When you develop Arabic or Hebrew CTL applications, you have to specify CTL as your preprocessor definition. In Microsoft Visual C++ Developer’s Studio (Version 6.0 or later), you can add preprocessor definitions on the C/C++ tab of the project settings dialog box: on this tab, from the Category drop-down list, choose Preprocessor. In the Preprocessor definitions field, add the string CTL.
- When you develop Motif applications and you are linking with the static version of the Motif libraries (`XmStatic.lib`), you must define the symbol XMSTATIC in your compiler preprocessor definitions. Doing so ensures that you use the correct prototype definitions when you compile.
- Reserved Keywords—Check for words that are reserved keywords in the PC C compiler but not in the UNIX host C compiler. For example, using `exit` as a variable may cause unpredictable results.
- Compiler Options—Ensure that the compiler and linker options are correct. You can find the correct options in the sample make files in the source directory.
- Path Names—Ensure that the Exceed XDK .dlls are either on your path or in your current default directory.

Chapter 10

Exceed XDK — Japanese Locale Support

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Using Japanese Locale Support

For more information regarding Exceed support for the Japanese Locale, see Xconfig Help.

The `Xlib.dll` and the X server included in Exceed XDK both support the X11R6 X Input Method (XIM). If your X client has been internationalized, users can input Japanese in your X client using a Microsoft Windows-compatible Japanese IME (Input Method Editor) in Japanese Windows. If you are developing an internationalized client, observe the following conditions.

Note: Performing a typical installation does not install Japanese Locale Support. Instead, you must perform a custom installation and select the Japanese Locale Support component.

Same Encoding in the Operating System and the X Client

If you are developing an X Toolkit application and the encoding of your operating system is the same as that for your X client, you do not need to specify a `setlocale` function because it will be called automatically from inside the `Hclxt.dll`.

Different Encoding in the Operating System and the X Client

If you are developing an X Toolkit application and the encoding of your operating system is different than that for your X client, you should not use the system `setlocale` function. Rather, you should call the `_Xsetlocale` function; you can call it explicitly or use the `X_LOCALE` macro to call it.

You can use this function in two ways:

Specify a second parameter of the `_Xsetlocale` function. For example:

```
_Xsetlocale(LC_ALL, "jaJP.euc");
```

where `jaJP.euc` is the locale and encoding name.

Do not specify a second parameter and instead set the LANG variable. For example:

```
_Xsetlocale(LC_ALL, "");
```

You then need to set the LANG variable to `jaJP.euc`.

Using Kinput2

Kinput2 is an input server for X11R6 applications requiring Japanese text input, including Kana-Kanji conversion.

Internationalized clients using X11R6 Xlib connect to Kinput2 using the X Input Method Protocol (X11R6 standard). Clients requiring Kana-Kanji conversion services for Japanese text send a request to Kinput2, which receives the request, performs Kana-Kanji conversion, and sends the converted text back to the client.

Kinput2 supports the following input styles:

- root-window
- off-the-spot
- over-the-spot

To start Kinput2:

- 1 Double-click the Kinput2 icon to start Kinput2 and open the Local X Console.
- 2 On the Client Control menu in the Local X Console application, click Client Manager.

You can then see that Kinput2 is in the Active Clients list, meaning that Kinput2 is started and is ready to accept connections from X clients.

Note: You must install Japanese fonts to ensure that Kinput2 functions correctly. Japanese fonts are not automatically installed when you select Kinput2.

To terminate Kinput2:

- 1 Select Kinput2 from the Active Clients list under Client Manager in the Local X Console.
- 2 Click Terminate Client.

Keystroke Conversion Tables

The following tables list the keystrokes possible for Japanese locale support.

Key Bind

Purpose	Keystroke
Convert Mode On/Off	SHIFT+SPACE
Convert/CandidateList	Ctrl+J
NextCandidate	Ctrl+N
Previous Candidate	Ctrl+P
Confirm	Ctrl+L
ExtendService	Ctrl+O
ShrinkSentence	Ctrl+I
CancelChange	Ctrl+G

Move Cursor

Purpose	Keystroke
DeleteCharacter	Ctrl+H
Up	Ctrl+P
Down	Ctrl+N
Forward	Ctrl+F
Backward	Ctrl+B
Home	Ctrl+A
End	Ctrl+E
Undo	Ctrl+U

InputMode

Purpose	Keystroke
InputSpecialCharacter	Ctrl+Q or F10
Input JIS Code	F5
InputFullStop	F6
ChangeMode	F9

CharCodeConversion

Purpose	Keystroke
ToDoubleByteKatakana	F1
ToDoubleByteHiragana	F2
ToSingleByteKatakana	F3
ToDoubleByte	F4

Dictionary

Purpose	Keystroke
RegisterDictionary	Ctrl+T
UnregisterDictionary	Ctrl+V
Escape from the mode	ESC

Roman Character Conversion

Make sure you input all characters in the correct case. The conversion table for characters A, I, U, E, and O is as follows:

Roman Character	A	I	U	E	O
A	a	i	u	e	o
K	ka	ki	ku	ke	ko
C	ca	ci	cu	ce	co
S	sa	si/shi	su	se	so
T	ta	ti/tsyi/chi	tu/tsu	te	to
N	na	ni	nu	ne	no
H	ha	hi	fu	he	ho
P	pa	pi	pu	pe	po
M	ma	mi	mu	me	mo
Y	ya	yi	yu	ye(ie)	yo
R	ra	ri	ru	re	ro
L	la	li	lu	le	lo
W	wa	wi	wu	we	wo
G	ga	gi	gu	ge	go
Z	za	zi/ji	zu	ze	zo
D	da	di	du/dsu	de	do
B	ba	bi	bu	be	bo

The conversion table for Roman characters ya, yi, yu, ye, and yo is as follows:

Roman Character	ya	yi	yu	ye	yo
K	ky'a		ky'u	ky'e	ky'o
G	gy'a	gy'i	gy'u	gy'e	gy'o
Sy	sya		sy'u	sye	sy'o
Sh	sha	shi	sh'u	she	sh'o
J	ja		ju	je	jo
Jy	jya	jyi	jyu	jye	jyo
Sw		swi		swe	
Th	tha	th'i	th'u	the	th'o
Ty	ty'a	ty'i	ty'u	ty'e	ty'o
Tsy	tsya		tsy'u	tsye	tsyo
Ch	cha		chu	che	cho
Cy	cya		cy'u	cye	cy'o
Dy	dya	dy'i	dy'u	dye	dy'o
Dh	dha	dhi	dhu	dhe	dho
Dw	dwa	dwi	dw'u	dwe	dwo
Ny	nya	hy'i	ny'u	ny'e	ny'o
Hy	hya	hy'i	hy'u	hy'e	hy'o
By	by'a	by'i	by'u	bye	by'o
Py	py'a	py'i	py'u	py'e	py'o
Hw	hya	hy'i	hy'u	hy'e	hy'o

Roman Character	ya	yi	yu	ye	yo
My	mya	myi	myu	mye	myo
Ry	rya	ryi	ryu	rye	ryo
Ly	lya	lyi	lyu	lye	lyo
V					vyo

The conversion table for characters a, i, u, e, and o is as follows:

Roman Character	a	i	u	e	o
wh	wha	whi	whu	whe	who
qw	qwa	qli	qwu	qwe	qwo
fw	fwa	fwii	fwu	fwe	fwo
vy	vya	vyi	vyu	vye	
kw	kwa	kwi	kwu	kwe	kwo
qa	qa	qi		qe	qo
gw	gwa	gwi	gwu	gwe	gwo
ts	tsa		tsu	tse	tso
tw	twa	twi	twu	twe	two
f	fa	fi		fe	fo
v	va			ve	vo
x	xa	xi	xu	xe	xo
xy	xya	xyi	xyu	xye	xyo

The table for key input order is as follows:

Key Input in Order	
nn/n'	n
xtu/xtu	tu
xwa	wa
vya	vy
xwi	wi
xwe	we
xwo	wo
xka/xca	ka
xke	ke
—	- (prolonged sound)
x-	- (hyphen)
x,	, (comma)
,	„ (comma)
.	° (full stop)
x.	. (period)
X[⌈ (key parenthesis)
X]	⌋ (key parenthesis)
X/	• (central black dot)

Appendix A

Troubleshooting

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Exceed Diagnostics

This section describes possible solutions to problems that you may encounter while using Exceed. To troubleshoot issues, the following methods are available:

- Diagnosing using progress messages.
- Diagnosing using logs and trace operations.

Troubleshooting Xstart

Progress Messages

Usually, the first step in troubleshooting a connection is displaying system progress messages.

To display progress messages:

- 1 In Xstart, click Settings in the Startup area.
- 2 In the Xstart Settings dialog box, click the Network tab.
- 3 On the Network page, select any of the following options in the Troubleshooting area:
 - Show Progress—Reveals what is happening while you try to connect and start an application.
 - Show Host Reply—Displays a summary of the startup information, the macros you used displayed in expanded form, and what reply was given by the host or application.

Common Error Messages

The common error messages are as follows:

Correct user name and password—System does not connect. If the host does not return an invalid name or password message, there may be something wrong with the communications link. For more information, see “Checking Your Setup” on page 303.

Host returns invalid name or password message If you receive an invalid name or password message but the system is connecting, the login information is incorrect.

Host returns “Command not found” or “No such file or directory” message If you receive either message but the system is connecting, there may be something wrong with the path, or the parameters or syntax of the command specified in the Command box in Xstart. For more information, see “Checking Your Setup” on page 303.

Xstart connects but the client does not start The client may not be getting enough time to start before the initial Xstart socket closes down. For more information, see “Checking That the Client Has Enough Time to Start” on page 304.

The Client is not authorized to run on the server To verify authorization, examine the Exceed.log file for errors. In Xconfig, click Other Server Settings in Category View. On the Troubleshooting page, click View.

For problems with permissions, edit the Host Access Control List file. In Xconfig, click Security, Access Control, and System Administration in Category View. On the Security page, edit the Host Access Control List file (select File, specify the file name, and then click Edit). You may have to also edit the file indicated in the Enable User Access Control List area.

Logs and Trace Operations

Exceed provides Troubleshooting in Xconfig and Transport Monitor for troubleshooting purposes.

Troubleshooting in Xconfig

You can specify options for troubleshooting to view the log file, to set what information is recorded in the log file, and to enable tracing. There are two main methods of active troubleshooting available: logging and tracing.

You can log information into a file for later inspection. You can log Font Open requests, the initial settings of the WM_COMMAND and WM_NAME properties on InputOutput root level windows, and all OpenGL requests. You can also generate a security audit in the log file using Xweb Info Logging.

Note: OpenGL support requires Exceed 3D. OpenGL is an industry-standard three-dimensional graphics software interface. It lets you create interactive programs that produce still or animated 3D color objects with shading, lighting, and other effects. GLX is the X Window System extension which implements OpenGL.

You can also conduct tracing to record all protocol traffic between the Exceed X server and the host to a binary file. On the Troubleshooting page in Xconfig, there are options that can help with the trace. For example, you can turn on tracing as soon as the Exceed X server starts, which means that the dialog with the first X client is recorded. You can also select the Slow Trace option, which writes all information directly to the file without buffering any of the data. This is helpful if you are tracing a situation where the Exceed X server crashes because any buffered information would be lost.

The trace stops when the Exceed X server terminates. If you turned tracing on by clicking Trace on the Exceed File menu, you can terminate tracing by selecting Trace again. If tracing was turned on in the Troubleshooting page in Xconfig, you should clear the Trace Initially On option as soon as possible. Otherwise, whenever the Exceed X server is restarted, tracing begins again.

Warning! Tracing creates large disk files on your system, and can impair Exceed X server performance. Therefore, use tracing only when you are troubleshooting a problem.

To specify troubleshooting options:

In Xconfig, click Other Server Settings in Category View, and then click the Troubleshooting tab.

Transport Monitor

The Transport Monitor application lets you monitor network connections by displaying all current connection activity. After you close a connection, Transport Monitor should reflect this change. If Transport Monitor continues to display a connection that you have closed, then the connection is frozen. For more information, see “Using Transport Monitor” on page 307.

Required Port Numbers

The table below lists incoming ports that are required for various components or protocols. To avoid conflicts, ensure other applications are not using these ports. If your organization uses a firewall, you can block or allow network traffic where appropriate.

Component	Port(s)
Bootstrap	67
Finger	79
FTP/SFTP	21
Lpq/Lpr	515
TELNET	23

Component	Port(s)
Tftp	69
Network Time	37
Xstart/RExec	512
Exceed	6000-6999
Secure Shell	22
XDMCP	177
Exceed Desktop Sharing (in a firewall environment)	522 (TCP) and 1503 (TCP)

Resolving Connection Problems

For more information, see “Progress Messages” on page 299.

If you cannot connect to a host or cannot start X clients with Xstart, you can enable the Show Progress and Show Host Reply boxes on the Network page of the Xstart Settings dialog box.

Checking Your Setup

A quick way to verify that your setup is working properly is to type an invalid password for the REXEC startup method or an invalid ID name for the RSH startup method.

- If the host does not return an invalid name or password message, there is a problem with the communications link. For example, the host is not running or it does not support REXEC or RSH. There may also be a problem with your transport configuration.
- If the host returns an invalid name or password message, the system is connecting but the login information is incorrect.
- If you receive an invalid name or password message, the connection is working. However, there may be something wrong with either the syntax or the parameters of the command you typed in the Command box in Xstart. You may need to type DISPLAY or PATH variables on the command line.

Checking That the Client Has Enough Time to Start

If the Xstart file seems to connect with the host properly but a client does not start, the client may not have enough time to start before the initial Xstart socket closes down. On the Network page of the Xstart Settings dialog box, set the Close box in the Timeouts area to -1 (minus one), select the Show Host Reply option, and then click OK. To access the Xstart Settings dialog box, click Settings in Xstart.

The Close setting at -1 keeps the first socket open even after the client socket is established. The Show Host Reply option displays all host-generated messages in a host reply window. If the client seems to start properly, try different values in the Close box until you find a value that gives the client enough time to start and then closes down the initial socket.

Tracing Server Operation

Exceed uses tracing to captures data transferred between the Exceed X server and X clients, font servers, and XDMCP servers. All traces create a binary file with an extension of .trx in the Exceed *User* directory.

Warning! Tracing the X protocol writes all protocol traffic between Exceed and the host to a file. This quickly creates large disk files, which can severely impair server response time.

Tracing a Fatal Error

If the server hangs, select Slow Trace on the Troubleshooting page (accessible by clicking Other Server Settings in Category View in Xconfig). The Slow Trace option outputs all data transferred to the trace file. Since buffers are not used, this procedure severely degrades server performance and should be specified only when necessary.

Tracing Dialog with First X Client

To examine Exceed interaction with the first X client, turn tracing on from Xconfig to begin the trace when Exceed starts. Make sure you clear this option when you are finished troubleshooting.

Tracing a Session

You can turn on tracing temporarily while Exceed is running using the Trace command on the Exceed File menu.

To turn on tracing:

- 1 In Xconfig, click Other Server Settings in Category View.
- 2 On the Troubleshooting page, select Trace Initially On to turn tracing. You should turn on tracing for troubleshooting purposes only.
- 3 On the Exceed menu, select File and click Insert Trace Comment.
- 4 In the Exceed Trace File dialog box, specify a comment related to the problem and then click OK.

To turn off tracing:

The trace stops when you close Exceed.

On the Exceed menu, select File and click Trace, which removes the check mark that indicates that the tracing is on. Make sure that you clear the Trace Initially On option on the Troubleshooting page in Xconfig. Otherwise, Exceed automatically turns tracing on when it restarts.

Viewing Server Error Messages

For more information, see Viewing the Log File.

You can find server error messages in the log file, trace files, and special Xstart or TELNET windows. Examine the log file if an X session terminates abnormally. You may also want to check the log file periodically to ensure that X font and color requests are being met.

To display the log file:

Do one of the following:

- On the Exceed menu, point to Tools, and then click Log File.
- Click Log File on the Exceed toolbar.
- In Xconfig, click Other Server Settings in Category View. On the Troubleshooting page, click View.

General Errors

You can check Exceed operations using tracing. Once enabled, all X protocol traffic between Exceed and the host is written to a file.

Transport Errors

If an error is generated before you establish a DECnet or TCP/IP connection, it usually means it was not possible to connect to the host. Although a transport error is generated, the actual cause may be that a host connection was not available.

Transport errors are reported in the log file as follows:

message (e)

where *message* is a text message indicating the nature of the error and *e* represents an error code associated with a particular network transport. For more information on transport errors, see your network transport documentation.

Host-Generated Error Messages

If you have established a TELNET host session, messages normally displayed in a terminal emulation window appear in the TELNET window.

In Xstart, you can view host-generated messages. Host or client messages are saved in a log file while the initial socket remains open.

To log the entire session:

- 1 In Xstart, click Settings in the Startup area.
- 2 In the Xstart Settings dialog box, click the Network tab.
- 3 On the Network page, set the Close box in the Timeouts area to -1 (minus one).

Denied Font Requests

If an X client requests a font that Exceed cannot provide, the font name or search pattern is noted in the log file.

Denied Color Requests

If an X client requests a color that Exceed cannot provide, the color is noted in the log file.

Using Transport Monitor

You can observe network traffic and detect and terminate blocked connections using Transport Monitor. Transport Monitor displays the status of current connections and the total number of open connections. It also indicates whether your transport is operating successfully. You can customize the Transport Monitor window to display all or some of this information.

To access Transport Monitor:

Depending on the most recent settings, Transport Monitor may appear minimized as an icon or the window may open.

On the Start menu, navigate to the Open Text Exceed program group, point to Exceed Tools, and click Transport Monitor.

Confirming Transport Operation

In the Transport Monitor window, the transport activity panel flashes to indicate that your transport is actually working.

Detecting and Terminating Blocked Connections

Your transport may not be functioning properly because an X client has blocked a connection, thus disrupting communication over the transport software. In Transport Monitor, the connection information area displays the status of the connection as CONNECTED or BLOCKED.

To resume transport activity:

- 1 Close the blocked connection so that all other transport activity can resume.
- 2 Open Transport Monitor. For more information, see “Using Transport Monitor” on page 307.
- 3 In the connection information area, double-click the blocked connection.
- 4 To prevent accidental terminations, click Yes to confirm termination of this connection. The connection is closed and removed from the connection information area.

Appendix B

HWM and the Exceed Virtual Desktop

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About HWM

HWM is a local, Motif-like window manager. Like remote, host-based window managers, HWM provides a graphical interface that you can use to start and exit clients, as well as position and iconize the windows on your display.

You can run multiple instances of HWM within multiple Exceed instances.

Unlike other window managers running on the host, HWM is a local X client that runs on your computer. Running locally speeds up window management functions while reducing network traffic. You can run HWM in single or multiple window mode.

To start HWM:

On the Start menu, navigate to the Open Text Exceed product group, point to Exceed Tools, and click HWM. Depending on how you configured HWM, the HWM Virtual Desktop and/or the Icon Manager display.

Note: You can run HWM either when the X server is operating in Single Window mode, or in Multiple Window mode when configured for X, or Default To Native Window Manager.

A Quick Tour of HWM

Depending on the window mode, specific options may have to be selected for the system menu to be displayed when you click the Windows desktop.

The System menu, also referred to as the control menu or context menu, is the main menu in HWM. The System menu contains most of the HWM commands, including standard functions that let you raise a window, move a window up and down, refresh the display, and kill a client.

For example, when you choose the Kill Client command, the pointer changes to a skull and crossbones. You can exit an application by choosing this command, moving the pointer to the application window, and then clicking the left mouse button.

The System menu also contains the following submenus:

Window Ops menu Contains commands that let you create icons, move, resize, raise, lower, zoom/unzoom, refresh, and close a window. You can display this menu by selecting it from the System menu or by clicking Window Ops in the client window.

When you select a Window Ops command from the client window, the operation takes place on the client. When you select a Window Ops command from the System menu, the operation takes place on the next client that you click.

Desktop Settings menu Contains commands that show or hide the Virtual Desktop, the Icon Manager, or any X clients displayed as icons.

Local Commands menu Contains commands to open Xconfig, Xstart, or open `Hwmcfg.src` for editing in Notepad.

X Commands menu Initially, this is an empty menu. You can add commands that start X clients by editing the HWM configuration file. You can also display this menu by right-clicking the X server window background.

Root Window menu Contains commands that let you change the pattern or color of the X server window (root window) background. Your selection is implemented immediately.

Note: If you are running in multiple window mode, you must make sure that the Root Drawing option is set to either Background or Full Support. If Root Drawing is set to None, then the changes you make using the Root Window menu will not take effect.

To access the Root Drawing option, click Display And Video in Category View in Xconfig. On the Screen page, click Advanced. In the Multiple Window Mode Advanced dialog box, make the modifications as necessary.

Exit/Restart menu Contains commands that let you exit or restart HWM.

Note: The Help command displays a quick reference table that shows you how to invoke various HWM and Virtual Desktop functions using keystroke or mouse button combinations.

To access the system menu (single window mode):

For more information, see "Window Mode Options" on page 172.

In HWM, click anywhere in the X server window background. If the cursor is in a client window, you can also display this menu by holding down the Alt key and clicking.

To specify the display of the system menu (multiple window mode):

- 1 In Xconfig, click Display And Video in Category View.
- 2 On the Screen page, click Advanced.
- 3 In the Multiple Window Mode Advanced dialog box, do one of the following:
 - Select Full Support from the Root Drawing drop-down list and click OK.
 - Select either Background Only or None from the Root Drawing drop-down list, select Root Mouse Actions To X, and then click OK.
Alternatively, you can select one of the Root Drawing options (and click OK), and then click Root Mouse Actions To X on the Exceed X server toolbar.

To enable the HWM Virtual Desktop:

Run HWM to open the Virtual Desktop. Include the following VirtualDesktop statement in your HWM configuration file:

```
VirtualDesktop
```

Note: You can disable the Virtual Desktop by inserting an exclamation mark (!) at the beginning of this line. For more information on Virtual Desktop statements, see "HWM Virtual Desktop" on page 319.

HWM Configuration File

HWM operates according to the specifications in the `hwmcfg.src` configuration file, located in the `User` directory.

This text file is loaded each time you start or restart HWM. You can customize HWM by editing the `hwmcfg.src`. You can display the HWM specifications when the application is running.

Note: This file is annotated to help you understand the functions and statements in it. We recommend that you make a backup of the configuration file before customizing it. This ensures that the original file remains intact if you need to revert to it. Changes to HWM configuration file take effect when you restart HWM.

To edit the HWM configuration file:

For more information on the system menu, see "A Quick Tour of HWM" on page 311.

In HWM, select Local Commands and then click Edit HWM Config on the system menu.

Formatting Rules

The following sections outline some basic formatting rules to consider when customizing the configuration file.

Configuration File Syntax

Component	Formatting Rule
Statements	
Exclamation Mark (!)	Appears at the beginning of the line and indicates that this line is a comment.
#If...#Then	Preprocessor statements must always begin with a number sign (#). For more information, see “Preprocessor Statements” on page 329.
Menus	
Submenus	Submenus must always be defined before they can be included in another menu.
Lines	
Backslash ()	Indicates that this line continues onto the next line.
Continued Rows	Continued rows must appear sequentially in the configuration file. You cannot have blank lines between continued lines.
Tokens	
Usage/Spacing	Each statement should consist of one or more tokens separated by one or more spaces. Note: A token is either a series of non-space characters, or any sequence of characters enclosed by matching quotation marks (for example, “a b/c? d*e”).
Case Sensitivity	Tokens that are HWM functions are not case-sensitive. Any string that displays as text on the screen is case-sensitive.
Backslash ()	Within a string, the backslash character () starts an escape sequence (see the Supported Character Escape Sequences table below).

Supported Character Escape Sequences

Sequence	Function
\\\	Represents a single backslash (\).
\n	Generates a newline character (0x0A).
\r	Generates a carriage return character (0x0D).
\xdd	Formulates any byte value except 0. Each d is a hexadecimal digit.
\u	Inserts the default user path. A trailing \ is also inserted, if needed. For example, "\uhwmcfg.src" is equivalent to: C:\Program Files\Hummingbird\Connectivity\version\ Default User\Exceed\hwmcfg.src
\i	Inserts the <i>home\info</i> path. A trailing \ is also inserted, if needed. For example, "\ixrdb.txt" is equivalent to: C:\Program Files\Hummingbird\Connectivity\version\ Exceed\info\xrdb.txt
\h	Inserts the <i>home</i> path. A trailing \ is also inserted, if needed. For example, "\hexceed.exe" is equivalent to: C:\Program Files\Hummingbird\Connectivity\version\ Exceed\Exceed.exe
\	Continues a single line, onto the next line.
\?	Enters a wildcard character that is otherwise used to delineate a string or start an escape sequence. Note: A question mark (?) denotes any wildcard character.

Functions

Functions are commands in the configuration file that perform specific actions. If you invoke any of the functions that affect a single window (such as iconify, refresh, zoom) from a menu that is bound to that window, the function operates immediately. However, if you invoke the same function from a menu that is not bound to the window, you have to click the left mouse button in the appropriate window to perform the operation.

The following table lists the supported functions:

Function	Description
Nop	Specifies a no operation token.
Iconify	Iconifies/restores a window.
Menu menu_name	Activates the named menu. When this function is called, HWM places the upper left corner of the menu at the current mouse position.
Move	Raises and moves a window or icon.
Resize	Raises and resizes a window.
Zoom	Zooms/unzooms a window.
Refresh	Forces a redraw of the selected window.
RefreshScreen	Refreshes the entire screen.
ShowIconMgr	Shows.raises the Icon Manager.
HideIconMgr	Removes the Icon Manager.
ShowIcons	Displays client icons.
HideIcons	Hides client icons.
Up	Circulates a window up.
Down	Circulates a window down.
Top	Raises a window to the top.
Bottom	Lowers a window to the bottom.
Kill	Kills a client.
Exit	Exits HWM.
Restart	Restarts the window manager (and rereads the <code>Hwmcfg.src</code> file).
Freesel	Releases ownership of the PRIMARY selection.
Setroot	Changes the appearance of the root window.

Statements

Statements are a sequence of actions in the HWM configuration file (`Hwmcfg.src`) that carry out a specific function in HWM. Editing the statements in `Hwmcfg.src` lets you customize HWM. When used in a `Hwmcfg.src` file, a single statement carries out a single action, while a series of statements carries out a complex sequence of actions.

The following sections describe the representative statements in the `Hwmcfg.src` file in the order they appear in the file. However, not all statements listed are included in the default configuration.

The supported HWM statements can be grouped into the following categories:

- Virtual Desktop statements
- Font statements
- Window statements
- Color statements
- Icon Manager statements
- Menu Definition statements
- Mouse Button Binding statements

Note: You can disable any of the statements in the configuration file by inserting a comment indicator or exclamation mark (!) at the beginning of the statement.

HWM Virtual Desktop

The HWM Virtual Desktop is the first section in the configuration file. The following statements appear in the default configuration file:

Statements	Description
VirtualDesktop	<p>Opens the Virtual Desktop when you run HWM. You can disable the Virtual Desktop by inserting an exclamation mark (!) at the beginning of this line.</p> <p>The syntax for this statement is as follows:</p> <pre>VirtualDesktop</pre>
VdeskScale	<p>Specifies the scale of the Virtual Desktop window. number defines the scale of the Virtual Desktop in comparison to your screen. This value indicates the number of screen pixels that each pixel of the Virtual Desktop represents. By default, the value is 20. Therefore, each pixel on the Virtual Desktop represents 20 pixels on your screen.</p> <p>The syntax for this statement is as follows:</p> <pre>VdeskScale number</pre>
StickyVdesk	<p>Places the Virtual Desktop within itself to prevent the Virtual Desktop itself from being displayed from within the Virtual Desktop window. This statement ensures that you will not inadvertently move the Virtual Desktop off the screen.</p> <p>The syntax for this statement is as follows:</p> <pre>StickyVdesk</pre> <p>Note: If you want the Virtual Desktop to appear as a rectangle within the Virtual Desktop window, insert an exclamation mark (!) at the beginning of this statement.</p>
DoubleClick	<p>Specifies double-click span in milliseconds. The default is 300 as shown in the following syntax:</p> <pre>DoubleClick_msec 300</pre>

Statements	Description
FadedMenus	<p>To specify faded menus, remove the exclamation mark (!) from the beginning of the statement.</p>
	<p>The syntax for this statement is as follows:</p>
FadedMenus	<p>Note: The Render extension must be active.</p>
borderwidth	<p>Sets the 3D border width to the desired number of pixels. The default is 8 as shown in the following syntax:</p>
	<pre>borderwidth 8</pre>
nocascade	<p>If you do not want to cascade windows, remove the exclamation mark (!) from the beginning of this statement:</p>
!nocascade	
positionisframe	<p>To specify (x, y) coordinates for your client window (not for its frame), remove the comment indicator (!) from the beginning of this statement:</p>
!positionisframe 0	
!nocascade	<p>Note: You must also uncomment (remove the ! from) nocascade to set (x, y) coordinates for the window.</p>

Other Supported HWM Virtual Desktop Statements

There are other statements that control the operation of HWM Virtual Desktop that are not included in the default configuration file. Other supported HWM Virtual Desktop statements are as follows:

color vdesk Sets the foreground (screen frame) and background color of the Virtual Desktop. The syntax for these statements are as follows:

```
color vdesk foreground colordname
```

```
color vdesk background colordname
```

VdeskGeom Specifies the placement of the HWM Virtual Desktop window. The syntax for this statement is as follows:

```
VdeskGeom [+|-]x[+|-]y
```

This statement only works if windows are automatically placed (for example, if NoGhost is specified in `Hwmcfg.src`). A single + or - must precede each `x` and `y`.

The parameters are described as follows:

Parameter	Description
<code>+x</code>	Specifies the horizontal position of the window, where <code>x</code> is the number of pixels from the left edge of the server root window to the left border of the Virtual Desktop.
<code>-x</code>	Specifies the horizontal position of the window, where <code>x</code> is the number of pixels from the right edge of the server root window to the right border of the Virtual Desktop.
<code>+y</code>	Specifies the vertical position of the window, where <code>y</code> is the number of pixels from the top edge of the server root window to the top border of the Virtual Desktop.
<code>-y</code>	Specifies the vertical position of the window, where <code>y</code> is the number of pixels from the bottom edge of the server root window to the bottom border of the Virtual Desktop.

VdeskButton Lets you configure which mouse button is needed to drag the server window frame or client windows to a new location. The syntax for this statement is as follows:

```
VdeskButton b1 b2
```

Note: `b1` is the button that moves the frame; `b2` is the button that moves the client windows. The values for `b1` and `b2` can be either 1, 2 or 3, which represent the left, middle and right buttons on the mouse, respectively. The values for `b1` and `b2` must be different. The default is `VdeskButton 3 1`, where the left button (number 1) moves the client windows and the right button (number 3) moves the frame.

For more information on bind statements, see "Mouse Button Bindings" on page 328.

ShowVdesk/HideVdesk. Lets you show or hide the Virtual Desktop when the Virtual Desktop is enabled via an preceding VirtualDesktop statement. The syntax for this statement is as follows:

```
ShowVdesk
```

```
HideVdesk
```

Note: Statements and functions can also be called using mouse-button bind statements. For example, to show the Virtual Desktop whenever you hold down Alt-Shift and then click the right mouse button, use the following statement:

```
bind alt shift b3 showvdesk
```

Font Statements

For more information on preprocessor statements, see "Preprocessor Statements" on page 329.

The preprocessor statement shown below sets the font used by HWM. It uses the preprocessor #if...#else...#endif format to set one of two different fonts, depending on the size of the server screen.

```
#if Xpixels >= 1024
font 10x20
#else
font 6x10
#endif
```

Window Statements

The following window statements let you move, resize, and focus windows:

NoGhost Lets you instruct HWM to automatically place and size client windows. The syntax for this statement is as follows:

```
NoGhost
```

To move and resize client windows when they first appear on your screen, add an exclamation mark (!) to this statement. The windows then appear as outlines, which you can place anywhere on the screen or Virtual Desktop.

ClickToFocus Lets you focus client windows. This statement, by default, requires that you click a client window to focus and raise it. The syntax for this statement is as follows:

```
ClickToFocus [raise] 1
```

If you want the pointer to focus the window, insert an exclamation mark (!) before this statement. The raise parameter is optional. You can also specify one of 1 (left), 2 (middle), or 3 (right) to indicate which mouse button to click.

Color Statements

Color statements set the colors that HWM displays for windows, menus, icons, dialogs, and the Icon Manager.

3D Effect HWM achieves its 3D effect by using three colors. In each of the areas where you can set background and foreground color, HWM allocates a third color that is a shade of the background. If colors are not specified for WINDOW, TRANSIENT, ICON, ICONMGR, or MENU, HWM assumes the colors are black and white, with gray shading.

Setroot color_specification Specifies the color of the root server window. The syntax for this statement is as follows:

```
Setroot color_specification
```

The following table describes different types of *color_specification*.

Color Specification	Description
default	Resets the server root window to its default.
solid color	Changes the server root window to a solid color, where <i>color</i> is any color defined in the RGB database. If the color name contains spaces or tabs, enclose it in quotation marks (" ").
bitmap filespec [fg color bg color]	Changes the server root window to the pattern described in the file <i>filespec</i> , where <i>filespec</i> specifies a standard X11 bitmap. You can optionally specify the foreground and background color.

Icon Manager Statements

The Icon Manager configuration statements that appear in the default configuration file are listed as follows:

IconMgrOn Enables the Icon Manager when you run HWM. The syntax for this statement is as follows:

```
IconMgrOn
```

This statement automatically displays the Icon Manager in the server window. You can disable the Icon Manager by inserting an exclamation mark (!) at the beginning of this line.

stickyIconMgr Prevents the Icon Manager itself from being displayed from within the Virtual Desktop window. This statement ensures that you will not inadvertently move the Icon Manager off the screen while using the Virtual Desktop. The syntax for this statement is as follows:

```
stickyIconMgr
```

If you want the Icon Manager to appear as a rectangle within the Icon Manager window, add a (!) before this statement.

HideIcons Hides any client that is currently iconified. The syntax for this statement is as follows:

```
HideIcons
```

If you want the icons displayed, you can replace this statement with the ShowIcons function.

Other Supported Icon Manager Statements

There are additional supported statements that are related to the operation of HWM Icon Manager. The following statements are not included in the default `Hwmcfg.src` file:

IconImage Associates a specific bitmap file to act as an icon for a particular client window. The syntax for this statement is as follows:

```
IconImage window-name bitmap
```

For example, you can use the bitmap file provided in the `Info` directory (by default, `C:\Program Files\Hummingbird\Connectivity\version\Exceed\Info`) as an icon for an xterm window by using the following statement:

```
IconImage xterm "\bird.bit"
```

You can also associate a pixmap to be used as the default HWM icon for clients that do not specify an icon by using the following statement:

```
IconPixmap filespec
```

Note: *filespec* must specify a standard X11 bitmap file.

For more information on the `x` and `y` variables, see “`VdeskGeom`” on page 320.

IconMgrGeom Specifies the placement of the Icon Manager window. The syntax for this statement is as follows:

```
IconMgrGeom [+|-]x[+|-]y
```

Menu Definitions

Menu names are case-sensitive.

The configuration file also lets you configure how menus appear on HWM. Menu definitions start with the word `menu`, followed by the name of the menu enclosed in quotation marks (" ") and ending with the word `endmenu`. Any items that appear on the menu are defined on the lines in between these two words.

All HWM menus appear in the menu definition section. They can be divided into two categories: menus with inactive menu functions and menus with active functions.

Inactive Functions

Menus with inactive functions are menus that do not perform any operations. They present information, rather than provide menu commands.

For example, the VdeskHelp menu has no active functions. Lines that do not invoke functions (or blank lines on a menu), are exited with `nop`, which indicates No Operation. Strings in the menu definition, or text enclosed in quotation marks (" "), display on the menu using the default font specified in this file.

Note: Blank lines on the menu are indicated with an empty string ("").

For example:

```
menu VdeskHelp
    "Click on      With Mouse Button      Function"
    "-----      -----      -----"
    "anywhere     Alt Shift right      Show VirtualDesktop"  nop
    "anywhere     Alt Shift left       Hide VirtualDesktop"  nop
    "  "
    "in Vdesk     left             Move the view"        nop
    "in Vdesk on a window right Move
    and/or show the name of a window"  nop
endmenu
```

Active Functions

Menus with active function menu items execute a specific operation or invoke a specific submenu when the user chooses it from the menu. For example, the Window Ops menu includes items which perform various window functions:

```
menu "Window Ops"
    "Iconify"      iconify
    "Move"         move
    "Resize"       resize
    "Raise"         top
    "Lower"        bottom
    "Zoom"         zoom
    "Refresh"      refresh
    "Close"        kill
endmenu
```

For more information on this menu, see “A Quick Tour of HWM” on page 311.

To start an application from an HWM menu, use “run” with the specified command. You can use the Local Commands menu to execute local Windows or X apps. For example:

```
menu "Local Commands"
    "Xconfig"      run "xconfig"
    "Xsession"     run "xsession"
    "Xstart"       run "xstart"
    "Hwm config"   run "notepad hwmcfg.src"
endmenu
```

You can use the X Commands menu to start remote X clients using Xstart. For example:

```
menu "X Commands"
    "XTerm Packard" run "xstart packard.xs"
endmenu
```

Mouse Button Bindings

The mouse button bindings section of the `Hwmcfg.src` file lets you display a menu or perform a function by either binding it to a mouse button, or to a mouse button and keystroke combination.

In general, the syntax for a bind statement is:

```
bind [location] [modifier] button menu_or_function
```

Mouse button binding parameters are described in the chart below:

Mouse Button Binding Parameters	
Location¹	Description
Root (or R)	Binding is valid on the root window.
Window (or W)	Binding is valid on a window.
Icon (or I)	Binding is valid on an icon.
Left (or L)	Binding is valid on a window banner's left button (typically the Window Ops button).
OutsideRight (Right, OR, or R)	Binding is valid on a window banner's outside right button (typically the zoom button).
InsideRight (or IR)	Binding is valid on a window banner's inside right button (typically the button to iconify).
Middle (Mid or M)	Binding is valid on a window banner's title bar, that is, outside of the buttons.
Modifier²	Description
Shift (or S)	<Shift> required.
Control (CTRL or C)	<Ctrl> required.
Mod1 (ALT or A)	Mod1 required.
Mod2... Mod 5	Mod2... Mod5 required.

Mouse Button Binding Parameters	
Button³	Description
B1 (or 1)	Mouse button 1 (left).
B2 (or 2)	Mouse button 2 (middle).
B3 (or 3)	Mouse button 3 (right).

¹ If none of Root, Window, Icon, Left, Right, InsideRight, or Middle are specified, all are assumed.

² Alt is used as a synonym for Mod1, as this is the modifier associated with the Alt key in the keyboard files supplied with Exceed.

³ Only one of B1, B2, or B3 can be specified in any one statement.

Preprocessor Statements

Preprocessor statements let you set if...else conditions that define which statements in the `Hwmcfg.src` file are processed. The following preprocessor statements are supported:

Statement	Description
<code>#if expression</code>	Used to specify an expression. Expression format is described in the Expressions in Preprocessor Statements section below. If the expression is true, successive statements are processed. If the expression is false, successive statements are not processed.
<code>#endif</code>	This statement marks the end of the range of the <code>#if</code> statement. For each <code>#if</code> statement there must be one <code>#endif</code> statement.
<code>#else statement(s)</code>	You can use one <code>#else</code> statement within each <code>#if...#endif</code> range. If the expression in the associated if statement is false, all statements between <code>#else</code> and the associated <code>#endif</code> are processed.

For example:

```
#if Planes == 8 !test for 256 colors
    color active transient foreground blue
    color inactive window background red
    color...!specify colors
#else
    color active transient foreground white
    color inactive window background black
    color...!different colors
#endif
```

Note: #if...#endif statements can be nested, that is if...#endif ranges can be placed within each other.

Expressions in Preprocessor Statements Expressions in preprocessor statements take the following format, and the fields must be separated by one space:

id operator constant

These fields are discussed in the following table:

Field	Description
id	
xpixels	The width of the server screen in pixels.
ypixels	The height of the server screen in pixels.
Planes	Represents the number of video planes. The number of colors is 2^{planes} , that is, 4 planes specifies 16 colors; 8 planes specifies 256 colors.
Color	Used to test whether or not the server supports color. (For example: PseudoColor or StaticColor.) If the default server supports color, Color is set to 1. Otherwise, it is set to 0.

Field	Description
Static	Used to test whether or not the server supports static read-only colormaps or dynamic read/write colormaps. If the server supports only static colormaps, Static is set to 1. If the server supports dynamic colormaps, Static is set to 0.
VdeskOn	Used to test whether the Virtual Desktop is specified in <code>Hwmcfg.src</code> . If the Virtual Desktop is specified, VdeskOn is set to 1, otherwise it is 0.
operator	
==	TRUE if ID is equal to constant.
<>	TRUE if ID is not equal to constant.
<	TRUE if ID is less than constant.
<=	TRUE if ID is less than or equal to constant.
>	TRUE if ID is greater than constant.
>=	TRUE if ID is greater than or equal to constant.
constant	
constant	A decimal numeric value.

About the Exceed Virtual Desktop

The Exceed Virtual Desktop window represents the entire area of your virtual screen. The top left corner of this box corresponds with the top left corner of your physical screen, which is only a portion of the virtual screen area.

The Exceed Virtual Desktop can represent an area many times larger than the actual server root window. It displays an overview of the entire contents of the server root window, including those X clients that are currently off-screen. You can use this extended desktop area to display and work with numerous Microsoft Windows-based applications and X applications running the native window manager without crowding the work area.

The Exceed Virtual Desktop Window

Colored boxes within the Virtual Desktop window represent open application windows. The box that contains the color used by Windows for active application title bars represents the currently active application. Light gray boxes represent inactive application windows.

A red frame outlines the portion of the Virtual Desktop that is visible on your display. This frame can be moved by right-clicking it and dragging it to the desired location. If you move it to a client application, that gives it the focus. Each active client appears as a shaded box. When you click in a shaded box, the name of the client appears in the Virtual Desktop title bar. The client window with the focus appears with its title bar, border color, and shaded box in the highlight color.

You can position client windows anywhere within the Virtual Desktop by clicking the window and dragging it to the desired location. When you release the mouse button, the window moves to the specified location.

Navigating the Exceed Virtual Desktop

Minimized applications do not appear in the Virtual Desktop window.

When you click and hold the left mouse button on a box representing an application window, the title bar caption appears in the title bar of the Exceed Virtual Desktop window. You can use this feature to find applications that are currently off-screen. You can right-click any area within the virtual desktop to display that area on your physical screen.

The following keyboard navigation is available when Exceed Virtual Desktop has focus:

- Use the Tab key to change the selected application in the Virtual Desktop window.
- Press the Esc key to de-select applications.
- Use the up/down/right/left arrow keys to navigate the Virtual Desktop window and to move selected applications.

- If you enabled Direct Placement in the Virtual Desktop Options dialog box, you can move the current window by right-clicking anywhere in the Virtual Desktop window.
- If you enabled Use Virtual Desktop Workspaces in the Virtual Desktop Options dialog box, you can use the numeric keys or the hot keys on your keyboard to shift the display onto a specific virtual display area. You can also right-click the Virtual Desktop title bar and select the virtual display area you want to view.
- To use Function keys to toggle between workspaces, use the Workspaces Configuration dialog box to specify workspace names and function key combinations. For more information, see Exceed Help.

To move an application:

Click and hold the application box drag it to the new location in the Virtual Desktop.

Configuring the Exceed Virtual Desktop

You can modify the look and behavior of the Virtual Desktop and enable features that let you parse, name, and navigate the virtual area. For more information on configuring the Virtual Desktop, see Exceed Help.

To configure the virtual desktop:

- 1 On the Exceed menu, select Tools, and click Virtual Desktop. Alternatively, click Virtual Desktop on the Exceed toolbar.
- 2 In the Virtual Desktop window, right-click on the Virtual Desktop title bar and click Options on the menu that appears.
- 3 Use the Virtual Desktop Options dialog box to make the necessary modifications.

Appendix C

General Accessibility and Customer Support

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General Accessibility

Wherever possible, our software adheres to Microsoft Windows interface standards and contains a comprehensive set of accessibility features.

Access Keys All menus have associated access keys (mnemonics) that let you use the keyboard, rather than a mouse, to navigate the user interface (UI). These access keys appear as underlined letters in the names of most UI items. (If this is not the case, press Alt to reveal them.) To open a menu, press Alt and then press the key that corresponds with the underlined letter in the menu name. For example, to access the File menu in any of our applications, press Alt+F.

Once you have opened a menu, you can access an item on the menu by pressing the underlined letter in the menu item name, or you can use the arrow keys to navigate the menu list.

Keyboard Shortcuts Some often-used menu options also have shortcut (accelerator) keys. The shortcut key for an item appears beside it on the menu.

Directional Arrows Use the directional arrows on the keyboard to navigate through menu items or to scroll vertically and horizontally. You can also use the directional arrows to navigate through multiple options. For example, if you have a series of radio buttons, you can use the arrow keys to navigate the possible selections.

Tab Key Sequence To navigate through a dialog box, press the Tab key. Selected items appear with a dotted border. You can also press Shift+Tab to go back to a previous selection within the dialog box.

Spacebar Press the Spacebar to select or clear check boxes, or to select buttons in a dialog box.

Esc Press the Esc key to close a dialog box without implementing any new settings.

Enter Press the Enter key to select the highlighted item or to close a dialog box and apply the new settings. You can also press the Enter key to close all About boxes.

ToolTips ToolTips appear for all functional icons. This feature lets users use Screen Reviewers to make interface information available through synthesized speech or through a refreshable Braille display.

Microsoft Accessibility Options

Microsoft Windows environments contain accessibility options that let you change how you interact with the software. These options can add sound, increase the magnification, and create sticky keys.

If you installed the Microsoft Accessibility components for your Windows system, you can find additional accessibility tools under Accessibility on the Start menu.

For Windows XP/Server 2003

To enable/disable Accessibility options:

- 1 In Control Panel, double-click Accessibility Options.
- 2 In the Accessibility Options dialog box, select or clear the check boxes as required. To enable or disable specific options, click Settings.
- 3 When finished, click Apply to apply the settings, or click OK to accept the settings and close the dialog box.

For Windows 7/Server 2008/2008 R2/Vista

To enable/disable Accessibility options:

- 1 In Control Panel, click Ease Of Access.
- 2 In Ease of Access, click Ease Of Access Center.
- 3 Use the tools in Quick Access To Common Tools to enable or disable Accessibility options or specify settings in Explore All Settings.
- 4 When finished, click Apply to apply the settings, or click Save to accept the settings and close the dialog box.

For more information about Ease of Access settings in Windows 7, Server 2008, 2008 R2, or Vista refer to Windows Help.

Customer Support

You can contact the Open Text Connectivity Solutions Customer Support department Monday to Friday. Please have the following information ready so that we can assist you faster:

- product name, version, and serial number
- operating system and version

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