InterDesk for QNX Windows

Version 1.00

User's Manual

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The latest version of InterDesk and this manual are available on QUICS for download.

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Table of Contents

Table of Contents **1**

Chapter 1— Introduction to InterDesk **6**

What is InterDesk? 6

InterDesk is Freeware 6

About the Author 7

Copyright 8

Use of InterDesk's Source Code 8

Limitation of Liability 8

Requirements 9

What to Read Next 9

Chapter 2— Quick Start **11**

Installing InterDesk 11

Using InterDesk 11

Chapter 3— Installing InterDesk **14**

Setup InterDesk's Symbolic Links 15

Configure User for InterDesk 15

Put Shell in Specific screen.cfg Files 16

Chapter 4— Overview of InterDesk **17**

The Application Dock 18

The File Manager 18

The Hypertext Help Viewer 23

Chapter 5— InterDesk's Graphical Shell **25**

The Application Dock 25

The Shell's Menu 26

New DirWin 26
Clock 26
Execute Command 27
Help 27
About 27
Windows->Text 28
Exit 28
Autostartup 28
Chapter 6— InterDesk's File Manager 29
Browse Format 29
Icon Format 30
List Format 31
The Directory Tree 31
File Selection 32
Keyboard 32
Mouse 34
Dragging and Dropping Files 35
Menus 36
Files Menu 36
Open/Run (Enter, Double-click) 36
Properties… (Alt+Enter, Alt+Double-click) 36
Copy… (F2) 37
Move… (F3) 38
Link… (F4) 39
Duplicate (F6) 39
Rename… (F7) 40
Delete… (Del) 40
New Directory… (F8) 40
Select Menu 41
Select Files (Ctrl+S) 41
Select All (Ctrl+A) 41

Options….41
Disks Menu….42
Mount….42
UnMount….42
Prefix….43
Utilities Menu….43
Touch….43
WordCount….44
TextTo….44
Change Owner….45
Associate….45
Create File….46
List… (F9)….46
Edit… (F10)….46
Execute Command… (Alt+C)….46
Usage Menu….47
Disk Usage….47
Dir Usage….47
Print Menu….47
Print Files….47
Print Dir….48
Search… (Ctrl+H)….48
View Menu….48
Filter… (Ctrl+F)….48
Sort….49
List… (Ctrl+L)….49
Icon (Ctrl+I)….50
Browser (Ctrl+B)….50
Directory Tree (Ctrl+D)….50
Update (F5)….50
New Viewer (Ctrl+N)….50
Tree Menu….51
Expand One Level (‘+’)….51
Expand Branch (‘*’)….51
Expand All (‘!’)….51

Collapse Branch ('–') 51
Switch Windows (Tab) 51
Tree on by Default 51
Help Menu 52
Help (F1) 52
About InterDesk FM 52
Path… (Alt+P) 52
paRent Dir… (Alt+R) 52
Cmd Line… (Alt+C) 52
Chapter 7— InterDesk's Search Utility 54
Options Dialog 54
Main Window 54
Search's Menu 54
Search… (F2) 54
Help Menu 54
Help on Search (F1) 54
About Search… 55
Search's Pane 55
Running Search From the Command Line 55
Chapter 8— InterDesk's Shadow File Editor 56
The Main Window 56
QNX Windows Icon Editor 58
Photon/X Windows Icon Editor 59
Chapter 9— InterDesk's Hypertext Help Viewer 61
Help's Menus and Buttons 61
Searching for a Help Topic 63
Bookmarks 63
Chapter 10— Format and Contents of InterDesk's Initialization Files 65
General Initialization File (InterDesk.ini) 65

File Manager Initialization File (IDskFm.ini).....69

Help Viewer Initialization File (IDskHelp.ini) 72

Chapter 11— Contacting the Author..... 73

Chapter 12— Using Drag-and-Drop Capability in User Programs 74

Use, Distribution, and Disclaimer 74

Chapter 13— InterDesk's Source Code 75

Chapter 1—Introduction to InterDesk

What is InterDesk?

InterDesk is a graphical shell and file management system written specifically for QNX Windows, a graphical user interface (GUI) running on the QNX operating system.

InterDesk's File Manager permits you to perform a large variety of operations on files and directories, including copying, moving, deleting, duplicating, and linking. It also contains numerous utilitarian commands which enable you to manage your system efficiently. One of the most useful capabilities of the File Manager is the ability to drag and drop files from one directory window to another—from one directory or filesystem to another.

InterDesk's Graphical Shell presents a vertical bar of icons—the "Application Dock"—along the right side of the computer screen. These icons represent frequently used programs or documents that the user can launch with a simple double-click.

InterDesk is based somewhat loosely on NeXTStep. My source of information, however, was the book *The NeXT Book*, by Bruce F. Webster, which was written about NeXTStep version 0.9. Because my information was dated, and because I implemented many ideas of my own, the final result is different from NeXTStep's Workspace Manager in many ways.

This author believes that the responsibility for a program ultimately lies in the hands of its *users* rather than its *authors*. It is the users' privilege and responsibility to enrich a program by suggesting changes they feel would be beneficial or even necessary; and to report all problems that occur, bugs they encounter, and difficulties or confusions that arise. Please help this system grow and flourish by communicating with the author whenever necessary. See Chapter 11, "Contacting the Author," on page 73.

InterDesk is Freeware

InterDesk is entirely free. By using InterDesk or this user's manual, you do not obligate yourself in any way to pay anyone any money whatsoever. However, if you use InterDesk frequently, and find it to be a great help (or perhaps if its user interface inspires your efforts in QNX Windows program design), I would greatly appreciate a contribution, of whatever amount you deem fair. Neither are businesses or government entities obligated to pay; once again, however, I would greatly appreciate any contribution that could be made.

I prefer to call InterDesk freeware rather than shareware[1]. You are encouraged to share InterDesk; however, I do not require anyone to pay, and neither do I recommend an amount should you choose to contribute. Also unlike most shareware, there are no benefits (other than a quiet conscience) of contribution. InterDesk consists only of this manual and the various programs, and these will be kept up to date for download on QUICS.

Despite the fact that InterDesk is free, I do intend to support it to a certain extent (see Chapter 11), as my busy schedule permits. I will also try to act upon any reasonable suggestions for changes in this manual or InterDesk itself. If anyone encounters problems, I'll be glad to help. I cannot promise, however, that I will be able to make any heroic efforts. If I am deluged with support problems, I may not even be able to help everyone. Sorry, but that's just the way it may work out. Priority will be given to those who have made a contribution.

About the Author

I am a freshman at Messiah College in Grantham, Pennsylvania. I have been home-schooled from second grade through twelfth grade, and attended Harrisburg Area Community College during my senior year of high school. I learned computer programming through two means—my generous mentor, who actually built a computer for me; and through my own experimentation and exploration. InterDesk is the largest project I have undertaken to date.

InterDesk really began the first time I used QNX Windows—I was astounded that there was no compelling program manager or file manager. After several months of research, I wrote up an overview of how I wanted InterDesk to work (essentially like NeXTStep), which I revised many times throughout the project. I started right away with the programs, and continued over a period of about twelve months, while at the same time keeping up with my schoolwork. The result—InterDesk.

I had initially hoped to either distribute InterDesk as shareware, or to sell it myself. Both of those options, however, required a greater investment of time and money than I was able to make. I then tried to market it to various companies and individuals for them to distribute and support under a contract agreement. Of numerous attempts, however, I received *no* responses. So, I returned to my original idea: shareware, but in a modified form. I included the source code so it could be allowed to be put on QUICS. Having included the source code, I decided to make it essentially free (though I would still appreciate contributions!). Because I am attending college, I also wanted to minimize the amount of time and effort

[1] InterDesk is *not*, however, in the public domain.

spent on InterDesk. No side benefits (*e.g.*, printed manuals), licensing, registration, or anything else—just support.

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The information in this documentation is subject to change without notice. I, Scott C. Moonen, reserve the right to update InterDesk and the contents of its documentation at my discretion and without the consent of or any obligation to any users.

Requirements

InterDesk requires the 32-bit version of the QNX operating system[2], version 4.21 or later, and QNX Windows, version 4.21A or later. The edition of InterDesk without the source code requires 1.5MB of disk space for installation, while the edition with source code and supporting files requires 3.8MB of disk space. 8 MB of memory or more is strongly recommended; although InterDesk can be run with less memory, its flexibility is severely limited.

What to Read Next

If you are inexperienced with QNX Windows, it would be a good idea to read your QNX Windows user's guide before using InterDesk.

If you want to install InterDesk and get up and running immediately, read Chapter 2, "Quick Start," on page 11. Be sure to read through the rest of the manual when you have time.

[2] InterDesk can, however, be recompiled for 16-bit systems, if you download the source code. See Chapter 13, "InterDesk's Source Code," on page 75, for more information. Disk space requirements may differ slightly for a 16-bit installation.

For more detailed instructions on installing InterDesk, go to Chapter 3, “Installing InterDesk,” on page 14, and then continue with the following chapters to learn how to use InterDesk.

If you have installed InterDesk and want to learn how to use it, read Chapter 4, “Overview of InterDesk,” on page 17, as well as the subsequent chapters on InterDesk’s constituent applications.

If you are an InterDesk user and wish to report problems, bugs, difficulties, or questions; or make any suggestions, read Chapter 11, “Contacting the Author,” on page 73.

If you are a programmer and want to incorporate InterDesk’s drag-and-drop capabilities into your own programs, read Chapter 12, “Using Drag-and-Drop Capability in User Programs,” on page 74.

Chapter 2—Quick Start

If you want to get up and running with InterDesk right away, this is the chapter to read. However, this does not mean that you can ignore the rest of the User's Manual. On the contrary, you should read the rest of this manual as soon as possible—not only so that you do not make mistakes in using InterDesk, but so that you may learn about everything you can do with InterDesk.

The instructions in this chapter assume that you are familiar with working in QNX and QNX Windows. If this is not the case, this chapter is not for you—please refer to other chapters for more detailed information on the installation and use of InterDesk.

Installing InterDesk

To install InterDesk, change to the "`/windows/apps`" or "`/usr/lib/windows/apps`" directory. Then execute the following command:

```
fcat {path}/InterDesk.{archive}.tar.F | pax -rv
```

Where `{path}` is replaced by the location of the InterDesk archives (*e.g.*, `~/ftp`), and `{archive}` is replaced by "`bin`" or "`all`", depending on whether you want to install just the InterDesk programs, or also the programs and source code.

Once the archive has been extracted, you should execute the `InterDesk/SETUP` script. Choose the "Setup … Links" command first to setup InterDesk's symbolic links, and then set up all users of InterDesk using the "Configure User for InterDesk" command to set up their initialization files and QNX Windows `screen.cfg` files. If any problems occur, consult Chapter 3, "Installing InterDesk," on page 14, for more information.

Using InterDesk

Please read this entire section, to the end of this chapter. Some of this information is important!

When you start up QNX Windows, the InterDesk Graphical Shell's application dock will appear, a vertical bar of icons along the right side of the screen. Run a program in the dock by double-clicking it. Move icons around by dragging them, delete an item by dragging it out of the dock, and add a program or document to the dock by dragging it into the dock from a File Manager window. You can call up the Shell's menu by clicking the MENU mouse button in the application dock.

One or more File Manager windows will also appear when you start QNX Windows. If you had one or more File Manager windows—directory windows—open last time you quit QNX Windows, they will be

opened up in the same position and configuration the next time you start. Otherwise, a default directory window in *browse format* will be opened on startup.

There are three directory window display formats—the *directory browser*, or *browse format*, which displays multiple columns of directories along a path; *icon format*, which displays large icons for files with the filenames below them; and *list format*, which displays a miniature icon, the file's name, and additional miscellaneous data. You can change a directory window's view format using the "Browser", "Icon", and "List" commands in the File Manager's View menu.

In browse format, the two arrow buttons at the extreme left side of the directory window scroll the directory columns. Also, the title boxes above the columns are actually buttons—click SELECT to open a list format window for that directory, or Ctrl+SELECT to open an icon format window for the directory. The current column is denoted by a darkened title box with white text.

In addition to the directory windows, the File Manager also can display an optional *directory tree* window, which displays a hierarchical view of your filesystem, in outline format. Branches may be expanded and collapsed, and the tree may be used to select a directory for viewing in the directory window. Use the View|Directory Tree command to bring up the directory tree window.

In all InterDesk dialogs, an indented box is an *edit box*, in which you can enter text. If arrow buttons appear to the right of an edit box, the box can hold more than appears—it can be scrolled using the buttons.

The File Manager differentiates between the *current* file and *selected* files. The current file is the file that appears within an indented box. There is always one and only one current file at any time in a directory window. *Selected* files, on the other hand, appear with a dark gray background. You can select any number of files simultaneously—even all of the files in the directory if you want. It is the *selected* files upon which a file operation is performed. If the current file is not selected, a file operation will not be performed upon it. (There are a few exceptions, however: if no files are selected, the operation is performed on the current file; and single-file commands such as the List, Edit, Open/Run, and Properties commands *always* operate on the current file alone.)

SELECT will select a file and make it current, deselecting all other files. Ctrl+SELECT, or ADJUST, will make a file current and invert its state of selection, leaving the selection state of all other files alone. Shift+SELECT will make a file current, deselect all files, and select the range of files between and including the new current file and the previous one.

Many of the major file operations display a *file operation progress dialog* while they are being performed. This dialog displays the name, location, and destination (if applicable) of each file as it is processed. It also contains a Cancel button, which you can use to abort the file operation.

You can drag and drop files with the File Manager. Dropping files on top of a directory file (whether in the current directory window or in another directory window) copies, moves, or links the file(s) to that directory; otherwise, it copies, moves, or links the file(s) to the directory represented by the window in which they were dropped (or, in the case of browse format, the column in which they were dropped). Files can be dragged from one directory window to another. To drag files, select the files you wish to drag, press one of the selected files with SELECT, drag the files to their destination, and release the mouse button. If no shift-keys are held down when you release the files, they will be moved. If Control is held down when the button is released, they will be copied. If Shift is held down, they will be linked.

InterDesk contains a useful hypertext help viewer. If you are ever confused about something, or wish to know how to do something, press F1, or, in a dialog, click the Help button for context-sensitive help. The help viewer also contains a keyword search facility that you can use to quickly find a topic you need.

That is all that is essential to know about InterDesk. Naturally, this is very brief, and there is quite a bit more to InterDesk than this. For this reason, to be truly productive with InterDesk, it is strongly recommended that you read the overview chapter and the chapters on the various component applications as soon as possible.

Chapter 3—Installing InterDesk

If you have not installed QNX Windows on your system, do so now (consult the QNX Windows User's Guide for the correct procedure).

InterDesk for QNX Windows is supplied in the form of two archives, the electronic form of this document, and a "readme" file. One archive contains InterDesk alone, while the other contains the InterDesk system in addition to all of the source code and other supporting files for the system.

First, change to QNX Windows' applications directory:

```
cd /windows/apps
```

Execute the following command to install InterDesk in the "`InterDesk`" subdirectory.

```
fcat {path}/InterDesk.{archive}.tar.F | pax -rv
```

Replace `{path}` with the location of the InterDesk archives (*e.g.*, `~/ftp`), and replace `{archive}` with "`bin`" or "`all`", depending on whether you want to install just the InterDesk programs, or also the programs and source code.

Once the archive has been extracted, type the following to execute the Setup script:

```
InterDesk/SETUP
```

The following should appear on your terminal:

```
InterDesk Version 1.00.  Copyright (C) 1996 by Scott C. Moonen.
All Rights Reserved.

InterDesk Setup Menu:

1)  Setup InterDesk's Symbolic Links
2)  Configure User for InterDesk
3)  Put Shell in Specific screen.cfg Files
Q)  Exit

Enter a selection:
```

Figure 1. InterDesk Setup Menu

The setup menu contains the following four items, described here briefly:

Setup InterDesk's Symbolic Links This command sets up various symbolic links on your system for InterDesk, and adds InterDesk to your system's `screen.cfg` files in the `/windows/config` directory.

Configure User for InterDesk	This command sets up a user to use InterDesk. It installs the basic InterDesk configuration files in the `windows` subdirectory off of the user's home directory, and modifies the user's `screen.cfg` files so that InterDesk's Graphical Shell is automatically started up when the user starts QNX Windows.
Put Shell in Specific screen.cfg Files	This command places the InterDesk Graphical Shell in specific QNX Windows `screen.cfg` files. This can be used to update `screen.cfg` files distributed over the network.
Exit	This command exits the setup script, returning you to the QNX shell prompt.

The three main commands are described in more detail in the following sections.

Setup InterDesk's Symbolic Links

The "Setup … Links" command on Setup's menu sets up various symbolic links on your system to point to *shadow files* in InterDesk's directory. These files contain icons for various programs. Links are also set up in `/usr/lib` for the InterDesk Graphical Shell interface library (see Chapter 12, "Using Drag-and-Drop Capability in User Programs," on page 74 for more information).

Once the links have been created, Setup will attempt to add the InterDesk Graphical Shell to the system `screen.cfg` files in the `/windows/config` directory, so the Graphical Shell will be started up when you load QNX Windows. You will first be prompted whether to continue; if you do not wish to add the Graphical Shell to the `screen.cfg` files, type 'Q' and hit Enter. Otherwise, simply hit Enter. Setup will process each `screen.cfg` file in the system configuration directory, adding the Graphical Shell to those files that do not already contain it.

At this point, this step is completed, and you will be returned to the main menu. After this, you should configure each of the system's users to use InterDesk by choosing the next command, "Configure User for InterDesk."

Configure User for InterDesk

This command sets up a user to use InterDesk. It is important that you use this command, because several InterDesk initialization files must be installed, and QNX Windows configuration files must be modified, before a user is fully ready to run InterDesk. If you are a system administrator of a large site, you may

wish to look at the setup script to examine the process; it may be easier to devise a small script to perform these commands for all of your users at once.

First, you will be prompted to enter the user's home directory. Setup will then place the configuration files (`InterDesk.ini`, `IDskFm.ini`, and `IDskHelp.ini`) in the `windows` subdirectory off of the user's home directory (the `windows` subdirectory is created if necessary). If the user already has a particular configuration file, the new file will be renamed with a version-specific suffix.

Setup will then prompt you whether to continue to the next step, adding the InterDesk Graphical Shell to the user's `screen.cfg` files. If you do not wish to perform this step, type 'Q' and hit Enter; otherwise, just hit Enter. Setup will then examine each `screen.cfg` file in the `windows` subdirectory off of the user's home directory. The Graphical Shell will be added to those files that do not already contain it.

Once the `screen.cfg` file(s) have been modified, you will be returned to Setup's main menu.

Put Shell in Specific screen.cfg Files

This command places the InterDesk Graphical Shell in specific `screen.cfg` files. This can be used to update `screen.cfg` files distributed over the network. You will first be prompted to enter the directory in which the files are located. All `screen.cfg` files in the directory will then be examined, and the InterDesk Graphical Shell will be added to those which do not already contain it. Unlike the "Configure User for InterDesk" option, this command does not install any initialization files.

Once the addition is completed, you will be returned to the main menu.

Chapter 4—Overview of InterDesk

This chapter is intended to present an overview of the InterDesk Graphical Shell and File Manager to first-time users. It is recommended that you read through and perform this chapter's explanations and examples before continuing to the various chapters about InterDesk's component applications. This chapter relies heavily on examples, requiring you to follow instructions to perform various operations. Please perform all of these instructions. It is assumed that you have already installed InterDesk; if this is not the case, please do so now before proceeding through this chapter.

First, you must start QNX Windows. Do so by typing the following command at the QNX shell prompt:

```
windows
```

When QNX Windows loads, the InterDesk Graphical Shell and an autostarted InterDesk File Manager window[3] should appear.

Click the "Cmd Line" button on the menu bar of the File Manager window. A command dialog will appear on the screen for you to enter a command to be run.

You should notice several things about this dialog. First, there are three buttons in the lower right corner of the dialog. These standard buttons—"Ok", "Cancel", and "Help"—appear in almost every InterDesk dialog, always on the bottom line or in the rightmost column. The "Ok" button accepts the input from the dialog and causes the program to proceed to the next step in the operation. The "Cancel" button cancels the operation and returns you to where you were previously. The "Help" button summons context-sensitive help on wherever you are, from InterDesk's hypertext help viewer. We will explore the help viewer later.

Notice a second thing in the dialog—there is an indented ("depressed") box in the dialog. This indented box is an *edit box*—you can type text in it. In virtually all of InterDesk's dialogs, editable text appears in this indented form. Observe, too, the two small arrow buttons to the right of the edit box. These buttons mean that the edit box is *scrollable*—you can enter text longer than the edit box is wide, and scroll the text left and right by clicking the arrow buttons with the mouse. In InterDesk, every edit box that can hold text wider than the box itself will have these arrow buttons.

Try typing the following command in the edit box:

---

[3] If File Manager windows were left open last time you quit QNX Windows, InterDesk will automatically reopen them the next time you start QNX Windows. If none were left open previously, a File Manager window in the default *browse* format will be opened upon startup.

```
echo Hello, my home directory is $HOME | less
```

Click "Ok"; a terminal window should pop up, and the name of your home directory should be listed on the screen. Press 'Q' to quit the "less" utility. InterDesk can execute any ordinary command or utility in this manner.

The Application Dock

Now let us examine the *application dock*, InterDesk's vertical bar of program icons along the right side of the screen. The application dock is managed by InterDesk's Graphical Shell. Its primary purpose is as a launching pad for several of your most frequently used programs. To see how it works, double-click the Calculator icon on the dock with your mouse. The calculator program appears on your screen. Quit the calculator (there is a Quit button in the lower right hand corner). You can run any of the applications on the dock in this manner; furthermore, you can customize the dock to contain the programs that are most important to *you*. With the application dock, this group of frequently used programs is never more than a few mouse clicks away.

Now click the MENU mouse button (usually the right button) on the application dock, and the Graphical Shell's menu will appear on the screen. This menu contains several useful commands, which we will explore later in the Graphical Shell's chapter.

The File Manager

InterDesk's File Manager presents a *directory window* on your screen—a window that views a directory. It has three different display formats: a *directory browser*, or *browse format*, a multi-column, multi-directory format which should appear now on your screen; *list format*, which displays a miniature icon, the file's name, and other optional miscellaneous information; and *icon format*, which displays a large icon above the file's name. In addition, the File Manager has a *directory tree* window which displays a hierarchical view of your filesystem.

The File Manager has a very large number of file operations and other useful tools, all of which are conveniently laid out in its menu system. Take a moment to look at each of the menus, but do not choose any commands at this point. In addition to the menus and command buttons along the top of the directory window, the File Manager has a *file manipulation menu*, which you can bring up by clicking the MENU mouse button within the directory window. This menu contains some of the most frequently used commands from the File Manager's menus.

You will notice within the directory window's menus that some of the menu commands have keystrokes listed to their right. These keystrokes (e.g., "F1" and "Ctrl+F") are *accelerator keys*. You can call up such menu commands simply by pressing the given keystroke. For instance, if you press F5, the File

Manager will re-read and redisplay the current directory in the directory window. As you become proficient with the File Manager, these accelerator keys will help you work more quickly.

Although the File Manager can perform a wide variety of file operations, there are five core operations that are more important than the others: moving, copying, linking, duplicating, and deleting. The File Manager can perform these operations on both files *and* directories, processing the directories and the files and subdirectories within them. Furthermore, you can perform these and most of the other operations on multiple files and directories at the same time, by *selecting* files and directories on which to perform the operation.

The File Manager differentiates between the *current* file and *selected* files. The current file is the file that appears within an indented box. There is always one and only one current file at any time in a directory window. *Selected* files, on the other hand, appear with a dark gray background. You can select any number of files simultaneously—even all of the files in the directory if you want. It is the *selected* files upon which a file operation is performed. If the current file is not selected, a file operation will *not* be performed upon it. (There are a few exceptions, however: if no files are selected, the operation is performed on the current file; and single-file commands such as the List, Edit, Open/Run, and Properties commands *always* operate on the current file alone.)

To select a file, click on it with the SELECT mouse button (usually the left button). The file will be made current and selected, and all other files will be deselected. To select more than one file, click Ctrl+SELECT (or ADJUST, usually the middle mouse button) on a file. The file will then be made current, and its selection state will be inverted. Furthermore, all other files will retain their current state of selection. If you want to select a contiguous group of files, click on one file at either end of the group. Then move to the other end of the group and click that file with Shift+SELECT. The file you clicked will be made current, all files between and including the two end files will be selected, and all other files will be deselected.

In the bottom of the directory window, you will see some useful information. On the left is shown the total number of files in the directory, followed by the total space they consume on the disk. On the right is shown the number of selected files, followed by the total space they use on the disk.

Now let's explore some of the file operations. Click the "Path" button in the directory window's menu bar. This button brings up a dialog that lets you select the path to view. Type in "`/tmp`" in the dialog, and click the "Ok" button. If you get an error, try "`/usr/tmp`", or whatever else your system's temporary directory is. We are now going to create a temporary subdirectory with which we can experiment. Bring up the "Files" menu. Notice the "New Directory" command—it has the accelerator

keystroke F8 listed to its right. You can now either choose the New Directory command from the menu, or dismiss the menu and press F8.

Type in a nonsense directory name in the dialog, and then click the Ok button. If all goes well, you should see the new directory appear in the temporary directory listing, with a small file folder icon before it, and an indented arrow icon following it. Now perform the same procedure to create a second directory. In the following discussion, we will assume you have named the two directories "`jabberwocky`" and "`cheshire_cat`", respectively.

Now we want to create a file. Double-click on the `jabberwocky` directory to move to it. Now bring up the Utilities menu and select the "Create File" command. This command brings up a dialog in which you can specify the new file's name (such as "`mad_hatter`"). Now click Ok, and your custom editor will be launched to create the file. Type in a few words, save the file, and then exit. Back in the directory window, press F5 to re-read and redisplay the directories. Your new file should now appear.

Now click the "paRent Dir" button in the directory window's menu bar. This should return you to the temporary directory. Notice the capitalized 'R' in the name. This means that you could also press Alt+R to jump to the parent directory (just as you can press Alt+P to choose a path, and Alt+C to run a command).

Select the `jabberwocky` directory by clicking on it. Now bring up the Files menu and choose the "Duplicate" command. Notice that you can also press F6, the duplicate command's accelerator key. A *file operation progress dialog* should pop up briefly, telling you that the `jabberwocky` directory is being duplicated. Each file or directory that is duplicated is shown in the dialog, in addition to the location of the file, and the destination of the file. The "Cancel" button in the dialog permits you to cancel the operation while it is in progress. All of the five major file operations—copy, move, link, duplicate, and delete—display this progress dialog while they are being performed. This not only permits you to see exactly what is going on, but it also allows you to cancel an operation whenever you wish.

The duplicate operation creates a duplicate copy of every selected file and directory, prepending the text "`Copy_of_`" to the file's original name. In this case, you should see a `Copy_of_jabberwocky` directory appear in the listing (its name may be truncated for display, but it is all there). Double-click on it to see what is in it—another `mad_hatter` file, a precise duplicate of the previously created one.

Now, return to the temporary directory. Do this by clicking on the `Copy_of_jabberwocky` file in the `tmp` column (or whatever the name of your temporary directory is). Now, `Copy_of_jabberwocky` should be selected. Now we want to copy the `Copy_of_jabberwocky` directory to the `cheshire_cat` directory. Choose the Files|Copy command, or press F2. In the dialog, you need to type in the destination directory into which the selected files will be copied. Type `cheshire_cat`, and click

Ok. A file operation progress dialog will appear briefly, and then the copying will be complete. Verify that it worked by double-clicking the `cheshire_cat` directory. There should be another `Copy_of_jabberwocky` subdirectory in that. Double-click on it, and you should see a third copy of the `mad_hatter` file you created earlier.

Now return to the temporary directory by clicking on "paRent Dir" (or pressing Alt+R) until you arrive there. Select both the `jabberwocky` and the `Copy_of_jabberwocky` directories in this column (remember how to press Ctrl+SELECT, or ADJUST, to select multiple files?), and then press the "Del" key (the accelerator keystroke for Files|Delete). In a few seconds, the two directories should have disappeared.

The other two major file operations—move and link—behave almost identically to copying, except, of course, that they perform a different operation.

One of the most powerful capabilities of the InterDesk File Manager is its capability to drag-and-drop files to perform three file operations: moving, copying, and linking. To drag-and-drop one or more files and directories, select them, press the mouse SELECT button down on one of the selected files and, without releasing the mouse button, drag the files to their new destination. You can drag them to a new directory in the current directory window, or even drag them across the screen to another directory window. If you drop them on top of a directory file, they will be moved, copied, or linked to that directory. Otherwise, if they are just dropped into a window, they will be moved, copied, or linked to the window's directory. In *browse format* drag-and-drop is particularly useful, in that you can drag files between columns. Remember that, even in dragging between columns, dropping files on top of a directory file places them *in* that directory.

InterDesk's File Manager determines which of the three operations to perform by the *shift-keys* you have held down when you *drop* the files. If you have *no* shift-keys held down when you drop the files at their destination, they will simply be moved. If you have one of the *Control* keys held down when you drop the files, they will be copied. If you have one of the *Shift* keys held down when you drop the files, they will be linked (after you are prompted for the link type). This applies only to directory windows; if you drop files on other applications' windows, the behavior depends on the application. InterDesk's Graphical Shell, for instance, does not care about shift-keys at all—any files dropped on the application dock are added to the dock, until the dock is full.

Now let's try out drag-and-drop. In the directory window, the temporary directory should be in the leftmost column, and its `cheshire_cat` subdirectory should be in the next column to the right. Click on the `Copy_of_jabberwocky` directory in the `cheshire_cat` column to make that column current. Now press SELECT on it, and drag the mouse over to the temporary directory's column,

continuing to hold down the mouse button. You should see a little box, which represents the files being dragged, move across the screen along with the mouse. Now press down the *Control* key, release the mouse button, and release *Control*. The File Manager will ask you whether you want to copy the files to the temporary directory—click "Yes". Now, a file operation progress dialog will pop up momentarily as the files are copied. Finally, you should now see a new `Copy_of_jabberwocky` subdirectory in your temporary directory.

The other drag-and-drop operations behave identically to the copying we just performed here. Keep in mind that you can also drag files between two different directory windows.

Another very useful ability of InterDesk is that it maintains a list of file *associations*. Association entries are stored in InterDesk's initialization files (see Chapter 10, "Format and Contents of InterDesk's Initialization Files, on page 65, for more information), and contain information associating a file matching pattern (such as "`*.c`") with an application or command (such as "`vedit`" or "`$EDITOR`"). In addition, a brief description of the file type is included with the association. The purpose of associations is to permit InterDesk to run the proper program and load the file when you try to "run" the file.

InterDesk has a very flexible facility to open or run files, programs, and directories. When you double-click on a file, program, or directory (or press Enter when the file is current, or choose the Files|Open/Run command), the File Manager attempts to run the file. If it is a program, the program is loaded, possibly running in a terminal emulation window. If the opened file is a directory, the way the directory will be opened depends on the current directory window display format:

Directory Browser: The opened directory is displayed in the next column.

List Format: The opened directory is displayed in the directory window.

Icon Format: The opened directory is displayed in a new directory window, unless the directory is the parent directory ("`..`"), in which case the current directory window is closed. If you instead perform Ctrl+Double-click on the directory (or press Ctrl+Enter), the given directory will be displayed in the current directory window, identical to the list format's behavior.

If the opened file is an associated file, the appropriate program is run to load the file. If, however, the file is *not* associated, your default editor is run to load the file. So, whatever file you double-click on (or press Enter on), it will be run or opened or displayed in some manner.

Let's examine the other two display formats for the File Manager—list format and icon format. First, change back to the temporary directory by clicking the "paRent Dir" button, or pressing Alt+R. Click in

the temporary directory's column in the directory window to make that column current. Now choose the View|Icon command (or press Ctrl+I). After a brief re-reading of the directory, the temporary directory should now appear in the window in icon format.

Now choose the View|List command, or press Ctrl+L. A dialog will pop up, asking you what pieces of information to display in the window. The default is to display all additional information; leave it as such, and click Ok.

Now for a brief test. Remember how to delete files? Select the `cheshire_cat` and `Copy_of_jabberwocky` subdirectories in the temporary directory, and delete them.

Lastly, we will examine the directory tree. Choose the View|Directory Tree command (or press Ctrl+D), and the directory tree will be displayed. Clicking on any directory will change to that directory in the corresponding directory window. Double-clicking on a directory will expand its subdirectories if it is not expanded (such directories have a "+" glyph to their left), or collapse all levels below it if it is already expanded (those which have a "–" glyph to their left). To remove the directory tree, press Ctrl+D again, or simply un-pin the tree window.

The Hypertext Help Viewer

We have now explored most of the main applications in InterDesk, except for the hypertext help viewer. The hypertext help viewer displays a *help file*. A help file consists of a series of *topics*, much like chapters in a book. However, the topics, unlike chapters, are not sequential. They are linked together through *hypertext links—hyperlinks*—to form a vast web of interconnected topics throughout the entire help file. This is why we call it "hypertext"—it is "beyond" normal text.

Don't be daunted by the apparent size and complexity of these help files. Navigating through them is quite simple. When viewing a help topic (we will look at one in a minute), you will primarily find normal text, displayed in black. However, hyperlinks appear as green text. If you click on a hyperlink, you are whisked to the topic associated with it. Most hyperlinks will be used to define terms in a new topic, or to explain some "see also" information.

In the File Manager window, choose the Help|Help command, or press F1. A Help window should appear on your screen, viewing the File Manager's "Table of Contents" topic. If you ask for help in some of the File Manager's dialogs, different topics relating specifically to those dialogs will be displayed.

Notice the hyperlinks in this topic. Click on some of these links, and explore the help file a little bit. You can use the "Back" button in the menu bar to back up to previous topics. The "History" button displays a list of the last 50 topics you have viewed, from which you can jump to any one of them. The "Search"

button lets you search for a particular topic, based on an extensive list of keywords associated with the topics in the file.

You can get help on the Help viewer itself—simply press F1 in Help's main window, or click the "Help" button in one of Help's dialogs. For more detailed information on using Help, see Chapter 9, "InterDesk's Hypertext Help Viewer," on page 61.

When you are finished using Help, press Alt+X in the help window to exit.

You can also now press Alt+X in the File Manager window to close it. Whenever you need a new directory window, you can bring up the Graphical Shell's menu and choose the "New Viewer" command.

You have now completed the overview tutorial of InterDesk. It is strongly recommended that you continue reading the following chapters on InterDesk's component applications. However, the information you have learned here, coupled with the versatile help system that you can use when you are not sure what to do, is enough to get you started using InterDesk with no further delay. So enjoy InterDesk—and use its power carefully and wisely!

Chapter 5—InterDesk's Graphical Shell

InterDesk's Graphical Shell is the centerpiece of InterDesk. Its application dock, a vertical bar of icons along the right side of the screen, permits you to launch frequently-used programs and documents with a simple double-click. It has a convenient clock and alarm. It also performs an important behind-the-scenes job in managing all drag-and-drop operations within InterDesk, and with other applications that use InterDesk's drag-and-drop facility.

The Application Dock

The application dock can contain programs, documents, ordinary files, and directories. Each is launched in the correct manner—programs are run, documents are loaded in the proper program, normal files are loaded in your default editor, and directories are viewed using the InterDesk File Manager. All files or directories in the dock appear with the correct icon according to their file type, or with any specific icon that may be assigned to them through *shadow files*[4] .

To launch a file in the application dock, you should double-click it with the mouse SELECT button.

The topmost space in the application dock is reserved for the shell's icon. If you have the clock turned on (see the "Clock" command in the shell's menu description, on page 26, for more information on the clock), the clock will appear in this location. If not, a small star and the word "InterDesk" will appear here.

To add a file or directory to the application dock, open up a directory window and drag the file into the dock at the point where you want to add the file. If there is room in the dock, the file will be added, though it may push other icons aside. If there is no room in the dock, the file will not be added. You can add multiple files to the dock simultaneously by dragging multiple selected files into the dock; they will be inserted in the order they appeared in the directory window, until they have all been inserted, or until the dock has been filled.

To move an icon around within the dock, drag it from its current position to the intended position. To delete an icon from the dock, drag it out of the dock. It is unconditionally discarded; if you drop it on a directory window, no file operation will be performed.

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[4] See Chapter 8, "InterDesk's Shadow File Editor," on page 56, for more information on shadow files.

The Shell's Menu

The shell's menu can be brought up by clicking the MENU mouse button anywhere within the application dock. It contains the following commands:

New DirWin

This command opens up a new directory window (File Manager window). The window is started up in browse format, in the directory that was current when QNX Windows was started.

Clock

This command configures the Graphical Shell's clock and alarm. Upon choosing it, the clock configuration dialog appears. The three sample icons in the top panel show the three basic clock formats available: digital, analog, and plain. The current clock type is shown in an indented box, while the other two are displayed in a raised box. To choose a clock type, click on the sample clock icon. In addition to clicking "Ok", you can apply the dialog's settings by double-clicking on the sample clock of your choice.

Below the sample clock are two panels. To the left is the clock option panel. It contains the following selections:

Clock On This checkbox determines whether the clock is actually turned on. If turned on, it will appear in the application dock at the top position.

Seconds This checkbox determines whether the clock displays the seconds.

Date This checkbox determines whether the clock displays the current date.

12/24 Hour This two-way setting determines whether the clock displays time in 12-hour format or 24-hour format.

Hourly Beep This checkbox determines whether the clock will sound an hourly beep. If it is turned on, a beep will be sounded every hour on the hour.

As these settings are changed, the sample clock icons in the panel above will change appearance to reflect exactly how the clock will appear on the screen.

The panel to the right is the alarm panel. The settings in this panel control the Shell's alarm. Note that the clock need not be turned on for the alarm to function. The panel contains the following selections:

Alarm This checkbox determines whether the alarm is turned on. If set, the alarm will sound at the time that you specify.

Time This edit box sets the time of day when the alarm is to expire. The time should be entered in 24-hour format, with a colon separating the hour and minute.

Daily/On Date This two-way setting controls whether the alarm will go off at the same time every day, or only at the given time on a specific day.

Date If the alarm is set to go off only on a given day, this edit box will become enabled. You should type the date in this box, in the MM/DD/YY format. A four-digit year is not necessary, though it is permitted. If the year is two digits but less than 80 (e.g., 12), then the date is interpreted as being in the 21st century (in this case 2012).

Beep This checkbox determines whether the alarm will beep when it expires.

Message This checkbox determines whether the alarm will display a custom message when it expires.

Message Text This scrollable edit box contains the message to be displayed when the alarm expires.

Please note that if you have set the alarm, but neither the "Beep" nor "Message" checkboxes are set, you will receive no notification when the alarm expires!

Execute Command

This command brings up an execute command dialog, in which you can type any command you wish to run. Type the command in the scrollable command line edit box in the dialog, and then click "Ok" to run it. Because the command is run through the shell and in a terminal window, you can include output redirection, internal shell commands, shell scripts, file matching patterns, etc.

Help

This command brings up the Graphical Shell's help file in the hypertext help viewer. The viewer displays the table of contents topic for the help file, permitting you to branch off to other topics you want to view.

About

This command brings up a dialog containing version and copyright information for InterDesk and the InterDesk Graphical Shell. The dialog also contains various useful pieces of information about your system and QNX Windows, such as free memory, screen size, etc.

Windows->Text

This command suspends QNX Windows, returning you to text mode. QNX Windows is only suspended, however—the applications are still running in the background. You can return to QNX Windows at any time by typing "`windows`" at the shell prompt.

Exit

This command exits QNX Windows. You are first prompted whether you are sure you want to quit. If you choose to exit, QNX Windows is exited, and all other QNX Windows applications are shut down.

Autostartup

The InterDesk Graphical Shell provides a File Manager *autostartup* facility. By default, when you quit QNX Windows, the Shell saves the configuration of all open directory windows (including all options, such as filter and sort order). When QNX Windows is started up, the directory windows are opened in the same position and format, viewing the same directory. If no directory windows were open when you last quit QNX Windows, it will by default start up a browse format directory window on startup, viewing the startup directory.

You can disable the autostartup facility, however. It can be disabled by adding one of the following parameters to the InterDesk Graphical Shell in your `screen.cfg` file[5]:

`-A` Do not autostartup any directory windows at all.

`-a` Autostartup any directory windows that were left open last time QNX Windows was run; however, if none were left open, do not autostartup the default browse format directory window.

The line starting up the Graphical Shell should look similar to the following:

```
start /usr/lib/windows/apps/InterDesk/shell
```

By tacking on a "`-A`" or "`-a`" parameter to the end of this command, you can change how (if at all) the File Manager is autostarted.

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[5] The Graphical Shell is started up by QNX Windows in a `screen.cfg` file. QNX Windows usually locates these files in one of two places—the `/windows/config` directory, and the `windows` subdirectory off of a user's home directory. See the QNX Windows user's manual for a description on the format of these files, and their naming conventions (e.g., a node number may be appended to them).

Chapter 6—InterDesk's File Manager

The InterDesk File Manager displays the contents of one or more directories in a window on your screen. You can manipulate these files and directories using a wide range of commands.

The File Manager's main window is called a *directory window*, because it displays the contents of one or more directories. The directory window can appear in one of three display formats: *directory browser*, or *browse format*, a format which displays multiple directories along a path in several columns; *icon format*, which displays a large icon above each file's name; and *list format*, which displays a miniature icon, followed by the name of the file and other optional information.

Several standard portions of the window remain unchanged among the various display formats. The title bar always displays the full path of the directory being viewed (including node number), followed by a colon and the current file pattern being viewed. The File Manager's menus and command buttons in its menu bar remain unchanged throughout the formats. In the very bottom of the directory window is shown the number of files in the current directory, the space they consume on the disk, the number of selected files, and the total size of the selected files.

In addition to the main directory window, the File Manager also has the option of displaying a secondary *directory tree* window, which contains a hierarchical overview of your system's directory tree. Tree nodes can be expanded and collapsed as needed to explore the filesystem. The tree window and directory window are automatically "connected"—when you change the current directory in one window, it is automatically reflected in the other.

We will explore each of the formats, including the directory tree, in the following sections, and then proceed to other aspects of the File Manager.

Browse Format

The directory browser format displays each of the directories along the current path in multiple columns. For instance, if the current path (shown in the directory window's title bar) is `//1/usr/lib/windows`, then there will be four columns displaying the contents of each directory along that path.

Obviously, it is not always possible to fit all of the columns onto the screen at once. Therefore, the list of columns is scrollable to the left and right. At the far left side of the directory window, you will notice two arrow buttons. These buttons scroll the columns left and right. If a particular button appears as gray, it is disabled, and the list cannot be scrolled any farther in the given direction.

The lists themselves have above them a raised title box that displays the name of the directory whose contents is displayed in the list. The title box of the current list is displayed in a darkened color. These boxes are more than titles, however: they are buttons as well. If you click a title button with the mouse SELECT button, a new list format directory window will be opened viewing the given directory. If you click a button with Ctrl+SELECT, an icon format directory window will be opened viewing the given directory.

Each list has a scrollbar displayed to its right. The scrollbar shows the relative position within the list, and also permits you to scroll the list up and down.

The files are displayed in the window with a miniature icon shown to their left, followed by the file's name (truncated to fit in the list if necessary; at least 16 characters will be displayed). If the file is a directory, it will have an arrow icon following it. If it is a parent directory, the arrow will be depressed and pointing *left*; if it is a subdirectory, it will be depressed and pointing *right*; if it is the subdirectory displayed in the next column, it will be *raised* and pointing right.

Icon Format

The icon display format displays a large icon for each file, with the file's name underneath it. The icons are arranged neatly in rows and columns, and the entire list can be scrolled up and down with the scrollbar to the window's right. Some icons are hard-wired into InterDesk (*e.g.*, for block and character special files, FIFO's, most directories, etc.), while other icons, for certain applications, associated documents, and certain directories, are user defined.

It should be noted that the icon format's behavior regarding the opening of directories differs from the other two display formats. The primary intended use for the icon display format is as a program launcher, viewing multiple hierarchical program directories[6]. Therefore, when you open a subdirectory, it is displayed in a *new* icon format directory window, rather than the current one (much like other graphical user interfaces' program folders structure). Furthermore, if you "open" the parent directory of an icon format window, the window is closed instead of viewing the parent directory.

---

[6] In fact, it would be a good idea to set up your system with one or more icon format directory windows viewing a base program directory (perhaps set up with symbolic links pointing to actual programs). You can then navigate the folders to run various programs in the hierarchy. If you leave the window(s) open each time you quit QNX Windows, they will reopen the next time you start QNX Windows, permitting you to have a perpetual program launchpad.

This behavior can be changed by holding down the *Control* key when you open a directory. If you press Ctrl+Enter instead of Enter, or hold down *Control* while double-clicking a subdirectory or a parent directory, the given directory will be viewed in the current directory window, like the other display formats do by default.

List Format

The list display format displays a miniature icon for each file, followed by the file's full name and other optional information—the file's size, owner, group, permissions, number of links, modification date, and modification time. The list of files is displayed in columns; if more than one column can fit in the window, then more than one column will be displayed. For instance, if you view the icon, name, and file size, you will likely be able to fit several columns of files into the window. The entire list of files can be scrolled up and down with the scrollbar to the window's right. For list format, only default icons are displayed: the custom icons for programs, directories, and documents are far too large to display in the window.

The various optional information can be chosen by using the View|List command. See the description of the command on page 49 for more information.

The Directory Tree

The File Manager's directory tree displays a hierarchical view of all of the directories in your filesystem. It can be turned on or off using the View|Directory Tree command. It can also be turned off by simply un-pinning or dismissing the directory tree window. The tree is displayed in an outline format, with sub-directories shown underneath, but indented from, their parent directory. Each entry contains an optional plus or minus glyph (explained below), a directory icon (open for the current directory), and the directory's name. The current directory is highlighted.

A directory whose sub-directories are shown in the tree contains a minus glyph to its left, which symbolizes that the directory can be collapsed. A directory that contains subdirectories which are not shown on the tree contains a plus glyph to its left, which symbolizes that the directory can be expanded. If you click on a minus glyph with the mouse, the given directory will be made current (in the directory window, too), and the branch of the tree at that directory will be collapsed. If you click on a plus glyph, the given directory will be made current, and the single level below that directory will be expanded. If you hold down Control while clicking on a plus glyph, the *entire* branch below the given directory will be expanded and displayed in the tree.

Otherwise, if you click on a directory entry in the list, that directory will be made the current directory in both the tree and directory windows. If you double-click on a directory with a plus or minus glyph to its left, that directory will be expanded (one level only) or collapsed.

If you prefer to use the keyboard in the directory window, the arrow keys will scroll the current directory up and down. The page up and page down keys will scroll the current directory up and down by a page at a time. The Ctrl+PgUp and Ctrl+PgDn keystrokes will jump to the top and bottom of the listing, respectively. Tab switches between the tree window and the directory window. To expand a level, type '+'; to expand a branch, type '*'; to expand the *entire* tree (this takes some time), type '!'; to collapse a branch, type '–'. The Enter key behaves just like a double-click of the mouse: it will expand (by one level) or collapse the current branch, depending on the glyph shown to its left.

File Selection

The File Manager differentiates between the *current* file and *selected* files. The current file is the file that appears within an indented box. There is always one and only one current file at any time in any directory window. *Selected* files, however, appear with a darkened gray background. You can select any number of files simultaneously—even all of the files in the directory if you want. It is the *selected* files upon which a file operation is performed—if the current file is not selected, a file operation will not be performed upon it. There are a few exceptions, however: if no files are selected, an operation is performed on the current file; and single-file commands such as the List, Edit, Open/Run, and Properties commands *always* operate on the current file alone.

Files can be selected, deselected, and made current using both the keyboard and mouse; see the following sections for more information on performing this.

Keyboard

The File Manager is designed to permit easy use with the keyboard[7]. You can select files, run programs, change directories, and perform file operations all without touching your mouse.

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[7] The extensive arrow, page, etc. key handling can be disabled for those who want to use their arrow keys to emulate a mouse (or any other QNX Windows default keystrokes). See Chapter 10, "Format and Contents of InterDesk's Initialization Files", on page 65, for more information on the File Manager's configuration file options.

Many of the file operations have *accelerator keys* that you can use to execute them. All accelerator keystrokes are listed to the right of each command in the File Manager's menus. The various keystrokes for the commands are also listed in the section on the File Manager's menus, below.

In a directory window, the Enter key opens or runs the current file. If the file is a program, it is run; a document will be loaded into its program; a normal file will be loaded into your editor; a directory will be viewed in the directory window[8].

If you press Alt+Enter, a properties dialog is displayed for the current file or directory. This dialog displays information such as the file's name, size, permissions, etc., some of which can be edited. See the description of the Properties command on page 36 for more information.

The various arrow keys move the current file selector in the given direction[9]. They change the current file, deselecting all other files, and then selecting the new current file. If the *Control* key is held down when using the arrow keys (Ctrl+Up, Ctrl+Left, etc.), the current file is changed, but without affecting other files that may already be selected. This includes the new current file, which will not automatically be selected.

The PgUp and PgDn keys scroll the list up and down by one page at a time. Ctrl+PgUp and Ctrl+PgDn jump to the top and bottom of the file list, respectively. These four keystrokes do not affect any files that are already selected.

The Space key selects the current file, deselecting all other files. Ctrl+Space inverts the current file's state of selection (selecting it if it is deselected, and deselecting it if it is selected), but no other files are affected.

If the *Shift* key is held down in combination with other direction keys (e.g., Shift+Up, Shift+Left, Shift+PgDn, Shift+Ctrl+PgUp, etc.), a range—contiguous group—of files is selected. On the initial movement, all other files are deselected. Then, as you change the current file (still holding down *Shift*), all files between and including the current file and the original file are selected. As you scroll around, you may pass over the original file; in that case, a group extending in the opposite direction is selected.

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[8] For icon format, the directory is shown in a new directory window or, if it is a parent directory, the window is closed. Use Ctrl+Enter instead to display the given directory in the current window.

[9] In browse format, however, the Left and Right arrow keys move between columns.

Mouse

Although the File Manager can be used with the keyboard, it was designed specifically for use with a mouse. A perfect example is the drag-and-drop capability of the File Manager, which will be discussed in the next section.

To open or run a file, double-click it with the mouse SELECT button. If the file is a program, it will be run; if it is a document, its program will be run with the document loaded; if it is a normal file, it will be loaded into your editor.

Directories, however, behave differently depending on what *shift-keys* you have held down, and what format you are in:

Directory Browser:

Double-click:	View the directory in the next column.
Ctrl+Double-click:	View the directory in a new icon format directory window.
Shift+Double-click:	View the directory in a new list format directory window.

Icon Format:

Double-click:	If the directory is a subdirectory, open up a new icon format directory window to view it. If it is a parent directory, close the current directory window.
Ctrl+Double-click:	View the directory in the current window.
Shift+Double-click:	View the directory in a new list format directory window.

List Format:

Double-click:	View the directory in the current directory window.
Ctrl+Double-click:	View the directory in a new icon format directory window.
Shift+Double-click:	View the directory in a new browse format directory window.

For any file or directory, if you hold down the *Alternate* key while double-clicking with the SELECT button, a properties dialog will be displayed for the given file. This dialog displays information such as the file's name, size, permissions, etc., some of which can be edited. See the description of the Properties command on page 36 for more information.

If you click the MENU mouse button within the directory window's pane, a file manipulation menu is brought up. See the section on the File Manager's menus later in this chapter for more information.

To select a file, click the mouse SELECT button on it. The file will be selected and made current, and all other files will be deselected. If you hold down *Control* while clicking on a file, the file's selection state will be inverted (if it is selected, it will be deselected; if it is not selected, it will be selected), the file will be made current, and all other files will retain their current state of selection. You can achieve the same

effect by clicking the ADJUST mouse button to "adjust" the current group of selected files to include or exclude the clicked file.

If you hold down *Shift* while clicking a file, a contiguous group of files will be selected: the file clicked will be made current, all files will be deselected, and then the group of files between and including the original current file and the clicked file will be selected.

Dragging and Dropping Files

The File Manager has the capability to drag-and-drop files and directories to other locations—both within the same directory window, and to other directory windows. To drag-and-drop one or more files, first select all of the files you wish to drag. Then, press the SELECT button on one of the selected files and, without releasing the mouse button, drag the files to their new location. They can be dragged anywhere on the screen—within the current directory window or to other directory windows.

If dragged files are dropped on top of a directory file—whether in the current directory window or in another directory window—they are moved, copied, or linked to the directory on which they were dropped. Otherwise, they are moved, copied, or linked to the directory being viewed by the window. If a file is dropped in a directory browser column, it is moved, copied, or linked to the directory shown in the column (unless it is dropped on a directory file in that column). You can even use this to drag files from one column to another in a directory browser.

Three different file operations can be performed by dragging and dropping: moving, copying, and linking. If no *shift-keys* are held down when you drop the files at their destination, they will simply be moved. If *Control* is held down when the files are dropped, they will be copied. If *Shift* is held down when they are dropped, a link will be performed (you will first be prompted for the link type).

For each of the operations, you will be prompted whether you are sure you want to perform the operation (unless you have mouse confirmation turned off—see the Files|Options command on page 41 for more information). If you respond affirmatively, the File Manager will open up a *file operation progress dialog*, which displays the progress of the operation. The dialog contains a Cancel button, which you can click to abort the operation midway. When the operation is completed, you will be returned to the directory window.

You may also be able to drag files to other applications' windows if they support it. For instance, the InterDesk Graphical Shell will add to its application dock any files that are dropped on it. Other

applications, such as an editor, may open files dropped on them. Consult an application's documentation if you are unsure whether it supports InterDesk's drag-and-drop protocol[10].

Menus

The File Manager has two rows of menus in its directory window. The first row consists of the menus themselves: Files, Disks, Utilities, View, Tree, and Help. The second row contains three frequently used commands: Path, paRent Dir, and Cmd Line. Furthermore, the file manipulation menu, brought up by clicking the MENU mouse button in the directory window's pane, contains some of the most frequently used commands from the main menus.

Files Menu

Open/Run (Enter, Double-click)

The Open/Run command opens or runs the current file or directory. If the file is a program, it will be run; a document will be loaded in its program; a normal file will be loaded into your editor; a directory will be viewed in the directory window[11].

Properties... (Alt+Enter, Alt+Double-click)

The Properties command displays a properties dialog for the current file or directory. Attempts to view the properties of a parent directory will fail.

Icon This displays the icon for the file. If the file is an application or document, any custom icon will be displayed.

Name This edit box contains the name of the file. If the name is modified, and you click Ok, the file will be renamed.

Path This field displays the file's path, up to 48 characters. If it is too long to be completely displayed, it will be truncated.

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[10] If you are interested in incorporating InterDesk's drag-and-drop functionality into your own programs, see Chapter 12, "Using Drag-and-Drop Capability in User Programs," on page 74.

[11] For icon format, the directory is shown in a new directory window or, if it is a parent directory, the window is closed.

Type This field displays the file's type (Application, Directory, Block special file, etc.). If the file is a document, the description of the document type will be included in parentheses.

Link of If the file is a symbolic link, this field will display the full path of the file to which it points.

Document of If the file is a document, this field will display the command used to load the file in its application.

Created This field displays the time at which the file was created.

Last Modified This field displays the time when the file was last updated.

Last Accessed This field displays the time when the file was last read.

Size This field displays the size of the file, in bytes.

Number of links This field shows the number of hard links to the file.

Owner/Group This field displays the name of the owner and group of the file, respectively.

Permissions These checkboxes display the permissions of the file. If you are the file's owner or the superuser, you can change any of the permissions. Otherwise, these checkboxes will be grayed out.

Edit Shadow File This button permits you to edit the shadow file (or create one) for an application or directory. See Chapter 8, "InterDesk's Shadow File Editor," on page 56, for more information.

Copy… (F2)

The copy command copies the selected files or directories to a new location. When copying, hard links between files in the group of files and directories being copied will be preserved. In other words, if `file1` is a hard link to `file2`, then the new copy of `file1` will be a link to the new copy of `file2`.

Upon executing this command, a copy dialog will appear querying the user for the destination. All files and directories will be copied *into* the destination directory.

Files This field displays the file(s) that will be copied. If more than one file will be copied, it displays the string "Selected files."

Copy From This field displays the directory from which the given files will be copied. It will be the same directory that you are viewing in the directory window.

Copy To In this scrollable edit box, enter the destination directory to which the files should be copied.

Once you have specified the directory to which the files will be copied, the copy operation will begin. A file operation progress dialog will be displayed as the copying is performed, informing you as each file and directory is copied. You can cancel the copying at any time by clicking the Cancel button.

If you have copy confirmation on (see the Files|Options command on page 41), you will be asked to confirm each file or directory as it is copied. If any other errors or problems occur, you will be informed and asked how to proceed.

Copying may also be performed by dragging and dropping—see "Dragging and Dropping Files" on page 35 for more information.

Move… (F3)

The move command moves the selected files or directories to a new location. Cross-device moves are supported (such moves will perform copies followed by deletions of the original files). When moving, hard links between files in the group of files and directories being moved will be preserved. In other words, if `file1` is a hard link to `file2`, then the new copy of `file1` will be a link to the new copy of `file2`.

Upon executing this command, a move dialog will appear querying the user for the destination. All files and directories will be moved *into* the destination directory.

Files This field displays the file(s) that will be moved. If more than one file will be moved, it displays the string "Selected files."

Move From This field displays the directory from which the given files will be moved. It will be the same directory that you are viewing in the directory window.

Move To In this scrollable edit box, enter the destination directory to which the files should be moved.

Once you have specified the directory to which the files will be moved, the move operation will begin. A file operation progress dialog will be displayed as the moving is performed, informing you as each file and directory is moved. You can cancel the moving at any time by clicking the Cancel button.

If you have move confirmation on (see the Files|Options command on page 41), you will be asked to confirm each file or directory as it is moved. If any other errors or problems occur, you will be informed and asked how to proceed.

Moving may also be performed by dragging and dropping—see "Dragging and Dropping Files" on page 35 for more information.

Link… (F4)

The link command links the selected files or directories to a new location. For files, you may choose whether to create hard links or symbolic links, but *all* directory links and *all* cross-device links will be created as symbolic links.

Upon choosing this command, a link dialog will appear querying the user for the destination. All files and directories will be linked *into* the destination directory.

Files This field displays the file(s) that will be linked. If more than one file will be linked, it displays the string "Selected files."

Link From This field displays the directory from which the given files will be linked. It will be the same directory that you are viewing in the directory window.

Link To In this scrollable edit box, enter the destination directory to which the files should be linked.

Once you have specified the directory to which the files will be linked, you will be prompted to specify the link type.

Choose the link type—Hard link or Symbolic link, and the link operation will then begin. A file operation progress dialog will be displayed as the linking is performed, informing you as each file and directory is linked. You can cancel the linking at any time by clicking the Cancel button.

If you have link confirmation on (see the Files|Options command on page 41), you will be asked to confirm each file or directory as it is linked. If any other errors or problems occur, you will be informed and asked how to proceed.

Linking may also be performed by dragging and dropping—see "Dragging and Dropping Files" on page 35 for more information.

Duplicate (F6)

The duplicate command duplicates the selected files and directories, creating exact copies of them. The duplicate copies will be named "`Copy_of_`*`filename`*", where *`filename`* is the

name of the original file. In other words, if `file1` is duplicated, the duplicate will be named `Copy_of_file1`.

Upon executing this command, the duplicate operation will begin immediately. A file operation progress dialog will be displayed as the duplication is performed, informing you as each file and directory is duplicated. You can cancel the duplication at any time by clicking the Cancel button.

If you have duplicate confirmation on (see the Files|Options command on page 41), you will be asked to confirm each file or directory as it is duplicated. If any other errors or problems occur, you will be informed and asked how to proceed.

Rename… (F7)

The rename command permits you to rename the current file or directory (except the parent directory). Upon choosing this command, the rename file dialog will appear.

File This field displays the name of the file or directory to be renamed.

New Name Enter the new name of the file in this edit box. It starts out containing the original name, which you can edit.

When you click Ok, the file will be renamed.

Delete… (Del)

The delete command deletes the selected files and directories. Upon choosing the command, deletion will immediately begin, and a file operation progress dialog will appear to inform you as each file or directory is deleted. You can click the Cancel button in this dialog at any time to cancel the deletion.

If you have delete confirmation on (see the Files|Options command on page 41), you will be prompted to confirm the deletion of each file and directory.

New Directory… (F8)

The new directory command creates a new subdirectory in the currently viewed directory. Upon choosing it, the new directory dialog appears.

Dir Name Enter the name for the new directory in this edit box.

When you click Ok, the new directory will be created.

Select Menu

Select Files (Ctrl+S)

This command permits you to select or deselect files that match a given pattern. It summons the file selection dialog.

Pattern This edit box contains the pattern to match against the files. Files that match the pattern will be selected or deselected, according to your choice.

Associations List This list contains all of the currently defined associations for InterDesk. The association descriptions are listed, followed by their patterns in parentheses. When you select an association, its pattern is entered into the pattern edit box above.

Operation Type This two-way selection controls how the matching files are processed. If you choose select, all matching files are selected. If you choose deselect, all matching files are deselected.

Deselect all other files first If this checkbox is selected, all files that are already selected will be deselected before performing the given operation on the matching files. If it is deselected, all selected files will remain selected.

When you click Ok, the given operation is performed on the files that match the entered pattern.

Select All (Ctrl+A)

This command selects all files in the current directory.

Options…

The options command controls the various operations that the File Manager confirms with the user.

The dialog contains numerous checkboxes. If the checkbox for a given operation is checked, the File Manager will confirm that operation each time it is performed on a file or directory. If the checkbox is *not* checked, the user will not be prompted to confirm the given operation.

Most of the operations are self-explanatory; however, the following will be briefly described here.

Text Conversion Conversion of a file from one text format to another (Utilities|TextTo).

Mouse Operation Any drag-and-drop operation into the directory window. The user will be prompted with a notice that specifies both the type of operation (copy, move, or link), and the destination directory (to confirm whether the user wants the files placed into a subdirectory they were dropped on, for instance).

File Overwrite The user will be prompted any time a file will be overwritten by a new file during a file operation.

When you click Ok, the options will be saved in the File Manager's initialization file.

Disks Menu

Mount…

The mount command permits you to mount a device in your filesystem.

Device Enter the full path of the device to be mounted in this scrollable edit box (e.g., "`/dev/fd1`").

Path Enter the path at which the device should be mounted in this scrollable edit box (e.g., "`/fd1`").

Mount as Read-Only This checkbox determines whether the mounted filesystem will permit writes. If checked, the filesystem will be mounted as read-only; otherwise, the filesystem will be mounted with write permission.

When you click Ok, the File Manager will attempt to mount the device. You will be notified of any errors that occur.

UnMount…

The unmount command unmounts a mounted filesystem.

Device/Path Enter in this scrollable edit box the full path of the device. If the device is currently accessible (e.g., a floppy disk or CD is still in the drive), then you can also enter the path at which it is mounted, and the File Manager will attempt to determine the source device.

When you click Ok, the File Manager will attempt to unmount the device. You will be notified of any errors that occur.

Prefix…

The prefix command permits you to edit your system's prefix tree[12]. Upon choosing this command, the prefix editor dialog appears.

Prefix List This is a sorted list of all of your system's prefixes. Alias prefixes are displayed in the form "path = string", while prefixes assumed by I/O managers are displayed in the form "path = pid, unit".

Add Prefix This button permits you to add a prefix to the prefix list. It brings up the prefix addition dialog.

Path Enter in this scrollable edit box the full path where the prefix assignment should be located.

Target Enter in this scrollable edit box the full path of the location to which the given prefix alias should point.

When you click Ok, the File Manager will attempt to add the entered prefix assignment to the system prefix list.

Delete This button attempts to delete the currently selected prefix from the prefix list. Be careful when you do this!

In this dialog, the Ok button serves no purpose other than to close the dialog when done—all changes to the prefix list are immediate as executed.

Utilities Menu

Touch…

The touch command changes the modification date and time of the currently selected files and directories.

In the various fields, enter the date and time to which you want to set the files. Note that time is specified in 24-hour format. Click Ok to update the files' time. Or, click the "Use Current Date/Time" button to set the files' date and time to the current time.

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[12] See your QNX system documentation if you require more detailed information on prefixes.

WordCount…

The word-count command counts the number of words, lines, and bytes in the currently selected files (it ignores directories and all other non-regular files). Upon choosing the command, the File Manager will begin counting the number of words, lines, and bytes in the files. When it is done, it will present a report.

If only one file was counted, a simple dialog will be displayed, telling the name of the file and the number of words, lines, and bytes contained in it. However, if multiple files were processed, the information will be displayed in a scrollable secondary window in columns: the file's name, number of lines, words, and bytes; with captions above each column. The window can be dismissed by clicking the pin glyph in its title bar; it will be "unpinned" from the screen.

WordCount considers a line to be any set of data followed by a newline character (0Ah). Also, the final (unterminated) line in a file is counted (unlike the "wc" utility).

When comparing the output between WordCount and QNX's "wc" utility, you may notice a difference in the number of words. This is caused by the different sets of characters that are treated as word separators. WordCount considers each of the following characters to be word separators:

NULL (00h)			Tab (09h)				Newline (0Ah)			0Bh
Formfeed (0Ch)			Carriage Return (0Dh)				Space (20h)			
!	"	#	$	%	&	'	(	)	*	+
,	–	.	/	:	;	<	=	>	?	@
[	\	]	^	`	{	|	}	~		

Pseudo-space (FFh)

TextTo…

The TextTo command behaves similar to QNX's "textto" utility. It converts the currently selected files from one text format to another. The three interchangeable formats are as follows: DOS format (CR/LF pairs), QNX 4 format (CR), and QNX 2 format (RF). You also have the option of stripping Ctrl+Z characters from the files.

Conversion Type Select from these radio buttons which text format you wish to convert the files to.

Strip Ctrl+Z chars This checkbox determines whether all Ctrl+Z characters (1Ah) are stripped from the files.

When you click Ok, the File Manager will proceed to convert the selected files. If a file does not appear to be a text file, you will be prompted whether you are sure you want to convert it.

As each file is converted, the results are first copied to a temporary file, and then recopied back into the original file. This preserves the creation date and time of the original file, and permits recovery from errors that may occur.

Change Owner…

The change owner command permits you to change the owner and group of the current file. You will only be permitted to perform this operation if you are the file's current owner or the superuser.

File This field displays the name of the file whose ownership is being changed.

Owner Enter in this edit box either the name of the new owner, or the numeric id of the new owner. Or, leave it unchanged to leave the file's ownership alone.

Group Enter in this edit box the name of the file's new group, or the numeric id of the group. Or, leave it unchanged to leave the file's group alone.

Initially, the Owner and Group edit boxes contain the file's current owner and group. When you click Ok, the file's owner and/or group will be changed according to your specification. If an error occurs (e.g., the File Manager cannot find a username's entry in the password database), you will be notified.

Associate…

The associate command adds an association to InterDesk's *association list*, a list of file matching patterns and the programs with which they are associated. Among other things, InterDesk uses this information to launch document files in the appropriate manner, and display a specialized icon (if any) for a document file.

Pattern Enter in this edit box the file matching pattern for the association (e.g., "`*.myfile`").

Command Enter in this scrollable edit box the complete command to be used to load the file. Since the command is loaded using the QNX shell, you can include things such as output redirection, etc. If the command is not on your search path, be sure to include the full path to the command.

Place an asterisk (‘*’) in any place(s) within the command where the file’s name should be inserted. If no asterisk is specified, the filename is appended to the command.

A backslash preceding any character inserts that character verbatim into the command. This can be used to explicitly include an asterisk or another backslash in the command.

Description Enter in this edit box the description for the file type (e.g., “Myapp’s files”). The description may not start with the characters ‘[’ or ‘#’, and it may not contain the character ‘=’.

Add to config file This two-way selection determines the file into which the association will be placed. If “System” is chosen, the association will be added to the system initialization file (`/windows/apps/InterDesk/InterDesk.ini`). If “User” is chosen, the association will be added to the current user’s own association file.

“System” may only be chosen if you are the superuser.

Create File…

The create file command uses your default editor to create a new file in the current directory.

File Name Enter in this edit box the name of the file to be created.

When you click Ok, your default editor will be run in a terminal window with the file on its command line. It will create the file, which you can then edit and save.

List… (F9)

The list command runs the QNX “less” utility in a terminal window to view the current file.

Edit… (F10)

The edit command runs your default editor (specified in the “$EDITOR” environment variable) in a terminal window to edit the current file.

Execute Command… (Alt+C)

This command can be invoked by choosing Utilities|Execute Command, or by clicking the “Cmd Line” button in the File Manager’s menu bar.

In the scrollable edit box, type in the command you wish to run, and then click "Ok" to run it. Because the command is run through the shell in a terminal window, you can include output redirection, internal shell commands, shell scripts, file matching patterns, etc.

For convenience, the File Manager defines the "$FILES" environment variable to contain the list of selected files in the current directory window. If no files are selected, it is instead set to the name of the current file. This permits one to select a group of files and then perform a specific command on them:

```
do_something -xyZ $FILES
```

The standard QNX shell expands the environment variable to the list of selected files.

Usage Menu

Disk Usage…

The disk usage command displays a dialog containing usage information and other miscellaneous data for the filesystem in which the current directory resides.

Dir Usage…

The directory usage command determines how much space is consumed by the current directory and all of its subdirectories. It traverses filesystem boundaries. When it is finished, it displays the total—in kilobytes—in a dialog.

Print Menu

Print Files…

The print files command prints the currently selected files to the printer. You will first be prompted to enter the command that should be used to print the files.

The default command is displayed in the dialog; change it or replace it as needed. Place an asterisk ('*') in the place(s) where you wish the file's name to be included; if no asterisk is included, the filename will be appended to the command. A backslash preceding any character will insert that character verbatim into the command.

When you click Ok, the files are each printed using the entered command.

Print Dir…

The print directory command prints a listing of the current directory to the printer. You will first be prompted to enter the command that should be used to print the directory.

The default command is displayed in the dialog. Normally, it is a "ls" command piped to an "lp" command, to queue the directory listing to the printer; however, you may edit it or replace it as needed. Place an asterisk ('*') in the place(s) in the command where you wish the file's name to be included; if no asterisk is given, the filename will be appended to the command. A backslash preceding any character will insert the given character verbatim into the command.

When you click Ok, the directory listing is printed using the given command.

Search… (Ctrl+H)

The search command launches InterDesk's file search utility, which permits you to search for files matching a given set of patterns. The utility will start up displaying a dialog prompting you to enter the search base path and pattern(s). See Chapter 7, "InterDesk's Search Utility," on page 54, for more information on using the search utility.

View Menu

Filter… (Ctrl+F)

The filter command permits you to choose a file *filter pattern*. You can enter a file matching pattern to specify what files should be displayed in the directory window. The current filter pattern appears in the directory window's title bar, after the directory name.

All directories and applications are *always* displayed in a directory window; and all other files that match the filter pattern are also included.

Pattern Enter in this edit box the filter pattern you want to use.

Associations List If you choose an association from this list of InterDesk's associations, its pattern will be entered into the pattern box above. Each entry in the list includes the file type description, followed by the pattern in parentheses.

Display Hidden Files If this checkbox is checked, hidden files (files that match the pattern ".*") will be displayed in the directory window. Otherwise, they will not appear.

Display Shadow Files If this checkbox is checked, InterDesk shadow files ("`.*.idsh`") will appear in the directory window. It is not recommended that you select this checkbox; shadow files will unnecessarily clutter your directory windows.

When you click Ok, the filter pattern and options will be applied, and the directory window will re-read and redisplay its files according to the filter pattern.

Sort…

The sort command specifies the sort options for the directory window.

Sort By Select which criterion you want to sort the files by—their names, sizes, or times.

Descending Choose whether the sort should be in descending (inverse) order. If checked, files will be sorted in descending order; otherwise, they will be sorted in ascending order.

Directories First This checkbox determines whether directories will be sorted at the top of the list of files. It is often desirable to have the directories grouped together at the top of the listing.

Save as Default This button saves the current sort order configuration specified in the dialog to the File Manager's initialization file. All new directory windows that are opened up thereafter will have the given sort order as their default sort order.

When you click Ok, the sort order is applied, and the directory is re-read and redisplayed using the new sort order.

List… (Ctrl+L)

This command changes the view format to list format. You are first prompted as to which information you wish to display in the listing.

Icon, Name These two checkboxes are disabled—the files' icons and names are *always* shown.

Size File size.

User ID The owner's name or, if unable to determine it, the numeric user id.

Group ID The group name or, if unable to determine it, the numeric group id.

Permissions The user, group, and world permissions for read, write, and execute, in the form used by the POSIX "ls" command.

Number of Links The number of hard links to the file.

Date The file's modification date.

Time The file's modification time.

Save as Default This button saves the current list view settings in the dialog to the File Manager's initialization file. All new list format windows that are opened up thereafter will have the given information displayed.

Icon (Ctrl+I)

This command changes the current view format to icon format.

Browser (Ctrl+B)

This command changes the current directory window to a directory browser, displaying the files in browse format.

Directory Tree (Ctrl+D)

This command turns the File Manager's directory tree on or off.

Update (F5)

The update command re-reads and redisplays the current directory window.

New Viewer (Ctrl+N)

The new viewer command opens up a new directory window in the current display format. If the current file is a directory, the new directory window will be opened up viewing the given subdirectory. Otherwise, if the current file is not a directory, it will be opened up viewing the current directory.

Tree Menu

Expand One Level ('+')

The Expand One Level command expands a directory in the directory tree. If a directory has a plus symbol listed to its left, then it contains subdirectories that are not displayed in the tree. This command reads those subdirectories and displays them in the tree.

Expand Branch ('')*

The Expand Branch command expands an entire branch of the directory tree. The File Manager reads in the directory and all of the subdirectories below it, and displays that entire branch of the filesystem in the tree.

Expand All ('!')

The Expand All command reads in the entire filesystem directory tree and displays it in the tree window. Note that this operation, depending upon the size of your filesystem, will likely take a long time.

Collapse Branch ('–')

The Collapse Branch command collapses an entire branch of the directory tree. If a directory has a minus sign listed to its left, then it can be collapsed. All the directories under it will be removed from the tree, and a plus sign will be shown to the left of the directory, to show that it can be expanded.

Switch Windows (Tab)

The Switch Windows command switches between the directory window and the tree window. Its keyboard equivalent, Tab, is somewhat more convenient. Besides, if you're in the tree window, you have to make the directory window current anyway to execute this menu item with the mouse!

Tree on by Default

The Tree on by Default command determines whether a directory tree window should be opened up every time a File Manager is started. If it is turned on, then a checkmark will appear beside it.

Help Menu

Help (F1)

The help command brings up the File Manager's help file in the hypertext help viewer. The viewer displays the table of contents topic for the help file, permitting you to branch off to other topics you want to view.

About InterDesk FM

The about command summons a dialog containing version and copyright information for InterDesk and the InterDesk File Manager.

The dialog also contains various useful pieces of information about your system and QNX Windows, such as free memory, screen size, etc.

Path… (Alt+P)

The path command sets the currently viewed path.

Enter in the scrollable edit box the path to the directory you want to view. It can be a path relative to the current directory.

paRent Dir… (Alt+R)

The parent directory command changes to the parent directory. This has been provided to facilitate changing to the parent directory from an I/O manager-remapped pathspace, such as `/dev`, whose directory contains no "`..`" entry.

Cmd Line… (Alt+C)

The cmd line command brings up a command line dialog. See the "Execute Command" menu item on page 46 for more information.

The File Manager also has a file manipulation menu, which can be brought up by clicking the MENU mouse button in the directory window's pane.

For more information on the various commands in this menu, see their equivalents in the File Manager's main menu structure:

Open/Run	page 36
Properties…	page 36
Copy…	page 37
Move…	page 38
Link…	page 39
dUplicate	page 39
Rename…	page 40
Delete…	page 40
lIst…	page 46
Edit…	page 46
print Files…	page 47

Chapter 7—InterDesk's Search Utility

InterDesk's Search utility searches for files in your filesystem that match a given set of patterns. It then displays the files it finds in a window. You can drag-and-drop the files from the window, and perform new searches with different criteria.

The Search utility can be run from within the File Manager by selecting the Utilities|Search command, or by pressing Ctrl+H. The utility will then run and present its search options dialog to the user.

Options Dialog

In the Search options dialog, you can enter a search path and up to five search patterns.

In the scrollable path edit box, enter the base path for the search. Search will search this directory and all of its subdirectories for files.

In the five edit boxes below, enter the search pattern(s) for you wish to search. These are standard file matching patterns. Any file that matches at least one of the given patterns will be included in the list.

When you click Ok, Search commences its search. As the search is being performed, the names of the directories that are being examined are displayed at the bottom of Search's main window.

Main Window

Search's main window contains a simple menu bar, a pane that lists the files that it found, and an informational bar along the bottom of the window.

Search's Menu

Search… (F2)

This command brings up the Search options dialog for another search to be performed. See above for more information on the Search options dialog.

Help Menu

Help on Search (F1)

This command brings up help for the search utility using InterDesk's hypertext help viewer.

About Search…

This command brings up a dialog containing version and copyright information for InterDesk and the InterDesk Search Utility, in addition to some useful miscellaneous information about your system.

Search's Pane

Search places in its main window all of the files that it has found. The files' complete pathnames are displayed, preceded by a small icon that denotes their type. The list can be scrolled up and down using the scrollbar to the window's right.

Selection of files and dragging of files with the mouse behaves identically to that of the InterDesk File Manager; see the relevant topics in the File Manager's chapter for more information. Keyboard use is not supported in the Search utility, however.

Files can be dragged *out* of the Search window, but no files can be dragged in. No file operations other than drag-and-drop are supported.

Running Search From the Command Line

Search can be run from the command line. Its usage is as follows:

```
search [path [pattern ... ] ]
```

If neither a path nor a pattern is specified, Search will start up displaying its Search options dialog. If a path is given—and up to five patterns—Search will begin its search immediately. If a path is specified, but no patterns are given, Search will begin its search using a default pattern of "*".

Chapter 8—InterDesk's Shadow File Editor

InterDesk's Shadow File Editor permits you to edit and create shadow files. Shadow files contain various pieces of information that InterDesk uses. Shadow files may be associated with programs and directories. The format for their names is "`.`*`filename`*`.idsh`", where *`filename`* is the name of the program or directory with which they are associated. In addition, document types in InterDesk's associations list may have custom icons defined for them. See Chapter 10, "Format and Contents of InterDesk's Initialization Files," on page 65, for more information on the associations list.

Shadow files contain two pieces of information: the type of program—not applicable for directories—such as terminal-based, QNX Windows-based, etc.; and icons to display for the program or directory. Two icons are included in shadow files: a QNX Windows icon, and a Photon/X Windows icon[13]. The QNX Windows icon is a 16-color 55x55 pixel icon; the Photon/X Windows icon is a 24-bit color 64x64 pixel icon.

Using shadow files, you can set up directories and programs to appear within InterDesk's File Manager and the Shell's application dock with customized icons. The possibilities are endless. Users' home directories could appear as a miniature picture of them, programmers can define icons for their programs, and more.

The Shadow File Editor edits the data in these shadow files. It even contains two icon editors to edit the QNX Windows and Photon/X icons.

The Main Window

The Shadow File Editor's main window contains three panels. The left panel contains the control buttons, that load and save shadow files, etc. The right two panels operate the icon editing facilities, and convert icons from one format to another.

The left panel contains the following buttons:

Application Type The application type button sets the type of the application: terminal, QNX Windows, X, Photon, or Unknown (for directories). This is a menu—click it with the MENU mouse button and choose the

[13] A Photon version of InterDesk does not yet exist, nor do I have any immediate plans to write one. If there is sufficient demand for a Photon version, however, I may consider porting InterDesk to Photon. Nevertheless, Photon programs may use the Photon icon in the shadow files if they wish.

application type from the list that appears. The current application type is displayed in the button.

Load This button loads a shadow file. A QNX Windows file selection dialog will appear. You can use the dialog to scan through the directories and choose a shadow file to load.

Save This button saves the current shadow file to disk. If the current shadow file has no name, you will first be prompted for a name as with the "Save As" command, below.

Save As This button saves the current shadow file under a name that you specify. A QNX Windows file dialog appears, which lets you choose the directory in which to save the file. Then, type the file name in the edit box at the bottom of the dialog, and click the "Save" button in the dialog.

Help This button brings up the Shadow File Editor's help file in InterDesk's hypertext help viewer.

About This command brings up an about dialog containing version and copyright information for InterDesk and the Shadow File Editor. It also contains miscellaneous useful information on your system.

Quit This button quits the Shadow File Editor, prompting you first whether you wish to save the shadow file.

The top panel on the right in the main window is the icon editor panel. It contains the following two buttons:

Edit QNXWin Icon This button brings up the QNX Windows icon editor, which lets you edit the QNX Windows icon in the shadow file. See below for more information.

Edit Photon Icon This button brings up the Photon/X Windows icon editor, which lets you edit the Photon/X Windows icon in the shadow file. See below for more information.

The lower panel on the right is the icon conversion panel, which contains commands to convert between the various icon formats. It contains the following two buttons:

QNXWin−>Photon This button converts the QNX Windows icon into the Photon/X Windows icon. You are first prompted whether you are sure you want to perform the conversion.

Photon−>QNXWin This button converts the Photon/X Windows icon into the QNX Windows icon. You are first prompted whether you are sure you want to perform the conversion. It is not recommended that you perform this conversion, due to the truncation in icon size and color corruption that will necessarily occur.

QNX Windows Icon Editor

The Shadow File Editor's QNX Windows icon editing dialog permits you to edit the 16-color 55x55 pixel QNX Windows icon in a shadow file. It contains a number of tools and colors from which you may choose.

The icon editor consists of several areas. To the very left are the color and tool selection regions. You can select a color (including the transparent color) by clicking on it. Likewise, click on a tool to use it. The current color and tool appear indented.

The large central area in the dialog is the editing panel. This contains a magnified view of the icon, with each box representing a pixel in the icon. Each pixel appears in its respective color, with transparent pixels appearing in a unique striped white and gray pattern.

On the right side of the dialog, to the top, are four buttons. Ok and Cancel accept or reject the editing done to the icon. Undo undoes the last operation that was performed to the icon; successive undo's will alternately redo and undo the given operation. The Help button summons help for the QNX Windows icon editor.

In the lower-right corner of the dialog are two sample images of the icon. The top image is a facsimile of the icon in InterDesk's application dock. The bottom image shows the icon as it might appear in InterDesk's File Manager.

The various drawing tools are as follows:

Brush The brush tool draws dots of the current color in the drawing area. You can click various pixels to draw single dots, or press the mouse down and drag it around to "paint" a swath of dots, releasing the mouse when you are finished.

Line This tool draws a line in the current color. Press the mouse in the drawing area at one end of the desired line, drag it to the opposite endpoint, and release.

Rectangle There are two rectangle tools: a plain rectangle and a filled rectangle. The filled rectangle is similar to the plain rectangle, but it fills the rectangle with the current color. Press the mouse button in the drawing area at one corner of the rectangle, drag the mouse to the opposite corner of the rectangle, and release.

Ellipse There are two ellipse tools: a plain ellipse and a filled ellipse. The filled ellipse is filled with the current color. Press the mouse button in the drawing area at one of the ellipse's corners, drag to the opposite corner, and release.

Floodfill The floodfill tool fills a contiguous area with the current color. Click the mouse button in the drawing area in the place to be filled, and the given region is painted in the current color.

Copy The copy tool copies a region of the icon. In the drawing area, press the mouse button, drag, and then release to define a rectangular region to copy. The region will be outlined in a heavy box. Then, click the mouse in the location where you wish to copy the image. The image will be copied with its upper-right corner at the clicked location.

Photon/X Windows Icon Editor

The Shadow File Editor's Photon/X Windows icon editing dialog permits you to edit the 24-bit color 64x64 pixel Photon/X Windows icon in a shadow file. It contains a number of tools and colors from which you may choose.

The icon editor consists of several areas. To the very left are the color and tool selection regions. You can select a color (including the transparent color) by clicking on it. In addition to the 28 standard colors and the transparent color, you can choose a custom color with which to draw. Click the "Custom…" color rectangle, and the custom color selection dialog appears.

Adjust the red, green, and blue components of the color until you have the desired color. A sample of the color is shown to the right of the number bars (though this may not be very accurate, depending on the color capabilities of your system). When you have selected a color, click "Ok". The custom color rectangle will change to that color and will be indented as the current color.

Below the colors are the tools; click on a tool to use it. The current color and tool always appear in an indented box.

The large central area in the dialog is the editing panel. This contains a magnified view of the icon, with each box representing a pixel in the icon. Each pixel appears in its respective color, with transparent pixels appearing in a unique striped white and gray pattern.

On the right side of the dialog, to the top, are four buttons. Ok and Cancel accept or reject the editing done to the icon. Undo undoes the last operation that was performed to the icon; successive undo's will alternately redo and undo the given operation. The Help button summons help for the Photon/X Windows icon editor.

In the lower-right corner of the dialog are two sample images of the icon. The top image is a facsimile of the icon in InterDesk's application dock. The bottom image shows the icon as it might appear in InterDesk's File Manager.

The various drawing tools are as follows:

Brush The brush tool draws dots of the current color in the drawing area. You can click various pixels to draw single dots, or press the mouse down and drag it around to "paint" a swath of dots, releasing the mouse when you are finished.

Line This tool draws a line in the current color. Press the mouse in the drawing area at one end of the desired line, drag it to the opposite endpoint, and release.

Rectangle There are two rectangle tools: a plain rectangle and a filled rectangle. The filled rectangle is similar to the plain rectangle, but it fills the rectangle with the current color. Press the mouse button in the drawing area at one corner of the rectangle, drag the mouse to the opposite corner of the rectangle, and release.

Ellipse There are two ellipse tools: a plain ellipse and a filled ellipse. The filled ellipse is filled with the current color. Press the mouse button in the drawing area at one of the ellipse's corners, drag to the opposite corner, and release.

Floodfill The floodfill tool fills a contiguous area with the current color. Click the mouse button in the drawing area in the place to be filled, and the given region is painted in the current color.

Copy The copy tool copies a region of the icon. In the drawing area, press the mouse button, drag, and then release to define a rectangular region to copy. The region will be outlined in a heavy box. Then, click the mouse in the location where you wish to copy the image. The image will be copied with its upper-right corner at the clicked location.

Chapter 9—InterDesk's Hypertext Help Viewer

The InterDesk Hypertext Help Viewer permits you to browse through hypertext help documents, traversing through the various topics in such files. A topic can be thought of as a chapter in a book, with the entire Help file serving as the book. Unlike chapters, however, Help topics are not intended to be read in order; rather, they are interconnected with a web of hypertext links—hyperlinks—which you can click on to jump from one topic to another. A hyperlink might jump to another topic that defines a highlighted term or phrase; it might refer you to a topic that explains an issue, rather like a footnote; or it might lead you to a "see-also" topic that explains a related subject.

The hyperlinks are highlighted words or phrases, which appear in a light green color. When you click on a hyperlink, you are transported to the topic to which the hyperlink points. The topic will either be displayed in Help's main window, or possibly in a secondary Help window.

Help's Menus and Buttons

Help contains a brief menu, with a row of buttons below it. The menus and buttons are as follows:

File Menu The File menu contains only one command, Open, used to open Help document files.

Open… The Open command opens a Help document file. It displays a QNX Windows file selection dialog. You can traverse through directories with the dialog and select files to open.

Bookmark… The Bookmark command permits you to define *bookmarks* for the current help file. A bookmark can be used to quickly locate a topic. See the section on Bookmarks, below, for more information.

Help Menu The Help menu contains two commands:

How to Use Help This command brings up a Help file for InterDesk's Help viewer in a new Help program. This command can be accessed by pressing F1 within Help. You can view the help file to obtain information on using Help.

About Help… This command brings up a dialog with copyright and version information for InterDesk and InterDesk Help. It also contains some useful miscellaneous information about your system.

Contents The Contents button in Help's button bar transports you to the current Help file's table of contents topic. Every Help document has such a contents or index topic, which generally presents a list of important topics for the help file.

Search The Search button permits you to search for a topic with a given keyword. See the section on Searching, below, for more information.

Back The Back command backtracks to the previous topic you viewed. Help maintains a list, or stack, of the last 50 topics you have viewed. The Back button backtracks through this list of topics. If there are no topics in the backup list (e.g., you have backed up to the list's beginning), this button is grayed and disabled.

History The History button presents a list of the last 50 topics you have viewed. You can select any topic from the scrolling list and view it. Topics in the current file merely list the topic description; topics included in other files you may have viewed have the file's description prepended to the topic's description.

Once you have chosen a topic to view, you can double-click it or click Ok to view it.

<– The backwards arrow button moves you to the previous topic in a *browse list* of topics. Some related Help topics are associated into a browse list of help topics (multiple such browse lists may be included in a Help file). These topics are organized in the list in a logical sequence. The backwards arrow moves to the previous topic in the current browse list. If you are at the beginning of a browse list, or if the current topic is not in a browse list, this button will be grayed and disabled.

–> The forwards arrow button moves to the next topic in a browse list of topics. If you are at the end of a browse list, or if the current topic is not in a browse list, this button will be grayed and disabled.

Glossary The Glossary button displays the glossary topic in the current Help file. Some help files—not all—may have a glossary topic that contains a list of terms and phrases used in the Help file. Each term or phrase will be a hyperlink to a topic that defines the word or phrase, and is displayed in a secondary window. If the current help file does not have a glossary topic, this button is grayed and disabled.

Searching for a Help Topic

Almost all Help topics have *keywords* defined for them; in fact, most have multiple keywords defined. Keywords are brief words or phrases that describe in some way the contents of a particular topic. You can search for topics based on their keywords.

To search for topic(s) that match a particular keyword, click the Search button in Help's button bar. A search dialog will pop up, containing a list of all keywords in the Help file, and an edit box where you can enter a keyword.

You can select a keyword by scrolling through the list, or, if the list is very long, by typing in the keyword in the edit box. As you type, the keyword that closest matches your entry will be selected.

When you have chosen a keyword, click Ok or double-click the keyword entry in the list. If only one topic has the keyword defined, you will be immediately transported to the topic. However, if multiple topics have the keyword defined, a list of all of such topics will appear in a new dialog. Choose a topic that interests you from the list, and double-click it or click Ok. You will then be transported to the topic you selected.

Bookmarks

Help permits you to define *bookmarks* for a help file, that you can use to remember important topics in the file and quickly jump to them. Up to 16 bookmarks can be defined for any help file. Bookmarks are stored in a binary file in the same directory as their associated help file. The format for their name is "`filename.bmk`", where `filename` is the base name of the help file.

To add, delete, or jump to a bookmark, choose the Bookmark button in Help's menu bar. The bookmark dialog will appear, listing the currently defined bookmarks (if any).

The command buttons in the dialog are as follows.

Add Topic This button adds the current topic to the bookmark list. If the list is full—there are already 16 topics in the list—you will not be permitted to add the current topic to the list.

Delete This button deletes the currently selected bookmark from the list.

Goto This button transports you to the topic of the currently selected bookmark. You can also perform this by double-clicking a bookmark entry in the list. The dialog will be closed, and the bookmark list will be saved.

Ok This button saves the current bookmark list and closes the dialog. You are left in the same topic you were viewing before.

Cancel This button cancels the bookmark dialog. All changes made to the list will *not* be saved.

Help This button summons help for the bookmark dialog.

Chapter 10—Format and Contents of InterDesk's Initialization Files

InterDesk has three initialization files (with extensions of "`.ini`"). There are two levels of initialization files. The first level is the user initialization file. User initialization files are located in the `windows` subdirectory off of each user's home directory. System initialization files are located in InterDesk's own directory (`/usr/lib/windows/apps/InterDesk`). Except for associations, the system initialization files will only in extreme cases be used by InterDesk, and will only normally serve as examples or templates.

Initialization files are in the following format:

```
[Group1]
key1=abc
key2=TRUE
key3=FALSE
key4=72

# Comment...
[Group2]
key1=xyz
```

Initialization files are structured into *groups*, sections of the file that contain data for a specific purpose. Groups are begun by specifying the group name in brackets on a line.

Within groups are *keys*, individual pieces of data. A key consists of a key name, followed by an equals sign, followed by the key's value—the string or number that is associated with it. A key value may be a number (2, 5, 72, −1), a string ("Hello, world!"), or it may be a Boolean value (`TRUE/FALSE`, `ON/OFF`, `YES/NO`, or `1/0`). The type of each key (numeric, string, Boolean) is determined by the application.

Comment lines are preceded with a pound symbol ('`#`'), and are ignored by InterDesk.

InterDesk has three initialization files: `InterDesk.ini`, for the Graphical Shell and other general InterDesk information; `IDskFm.ini`, for the InterDesk File Manager; and `IDskHelp.ini`, for the InterDesk Help viewer.

General Initialization File (`InterDesk.ini`)

The general InterDesk initialization file has the following groups, with the given keys. A sample copy of the initialization file follows the description.

[Associations] This group defines all InterDesk associations. This is the only group for which InterDesk reads both the user and system initialization files. Associations are read from both, and a user's own associations override any system default associations.

description=pattern shadow-file command

The keys in this group are the association descriptions themselves. Each entry is a file type description, followed by a file matching pattern, a shadow file, and a command used to load the document.

The description may not be longer than 32 characters, and it may not start with a pound symbol ('#') or an open bracket ('['), lest it be interpreted as a comment or a group. It may not contain an equals symbol ('='). Each association entry must have a unique description—no description may be used twice. Descriptions may have trailing spaces.

The pattern, shadow file, and command are each separated by whitespace. Because the command is last, it may contain whitespace. The pattern may be any standard file matching pattern.

The shadow-file field specifies the full path of a shadow file that contains an icon that may be used to display the document. If no shadow file is desired, place an asterisk ('*') in this field. In this case, the icon, if any, for the application will be used. Otherwise, a generic document icon will be displayed.

The command specifies the full command that should be used to run the application and load the file. Since it is executed by the shell, you can include environment variables, output redirection, etc.

Place an asterisk ('*') in any places in the command where the filename should be inserted. If no asterisk is specified, the filename will be appended to the end of the command.

A backslash preceding any character except a newline will insert that character verbatim into the command.

If the program has a shadow file, InterDesk will automatically launch it in the proper manner. If the program does not have a shadow file,

InterDesk will run it using Wterm, as though it were a terminal application.

An explicit path need not be given for the command, although it is preferred. If a command which is not a program is given (e.g. `$EDITOR` as the command, instead of `/bin/vedit`), InterDesk will be unable to locate the shadow file (if any) for the program, and will display a generic document icon (unless the document type has an shadow file defined).

[AppDock] This group specifies the contents of the application dock.

NumFiles=*x* This key specifies the number of entries in the application dock. If more entries are given than can fit on the dock, empty spaces will first be eliminated. If the list is still too long, it will be truncated.

File*x*=path These keys specify the files and programs themselves. The "*x*" in the key should be replaced with the entry number, which starts at 1. This should be a *full path* to the file or program in the dock. The command may also contain options.

[Clock] This group specifies the options for the Graphical Shell's clock.

ClockOn=*x* This key specifies whether the clock should be turned on. *x* is a Boolean value—TRUE or FALSE.

Type=*x* This key specifies the clock type. It is a numeric value from 0-2. The three clock types are, respectively, digital, analog, and plain.

ShowSeconds=*x* This Boolean key specifies whether to display the seconds in the clock.

ShowDate=*x* This Boolean key specifies whether to show the date in the clock.

HourlyBeep=*x* This Boolean key specifies whether to sound a beep every hour on the hour. The beep will only sound if the clock is running.

24Hour=*x* This Boolean key specifies whether the clock should display time in 24-hour format. Not applicable for the analog clock.

AlarmOn=*x* This Boolean key specifies whether the alarm should be turned on.

AlarmTime=*x* This key specifies the time of day when the alarm will expire. It should be entered in 24-hour format, with a colon separating the hour and minute.

AlarmDaily=*x* This Boolean key specifies whether the alarm will go off every day. If TRUE, the alarm will sound every day. If FALSE, it will only go off on the date specified under the key "AlarmDate".

AlarmDate=*x* This key specifies the date the alarm will go off. Enter this in MM/DD/YY[YY] format.

AlarmBeep=*x* This Boolean key specifies whether the alarm will beep when it expires.

AlarmShowMsg=*x* This Boolean key specifies whether the alarm will display a message box when it expires.

AlarmMsgText=*x* This key specifies the message text to display when the alarm expires.

A sample InterDesk.ini initialization file follows. Note that two association definition lines are wrapped across multiple lines. This is only to fit them in the page—all keys are on one line only in the actual files.

```
# InterDesk general initialization file.

# The following group specifies file associations.
[Associations]
InterDesk Help File       = *.hlp       * /windows/apps/InterDesk/Help *
InterDesk Shadow File     = .*.idsh     * /windows/apps/InterDesk/shadow *
Initialization File       = *.ini       * $EDITOR *
"C" Source Code File      = *.c         * $EDITOR *
"C" Header File           = *.h         * $EDITOR *
C++ Source Code File      = *.cpp       * $EDITOR *
Makefile                  = [Mm]akefile * /bin/make -f *
WLink Directive File      = *.lnk       * /bin/wlink @*
QNX Windows Picture = *.pict /windows/apps/InterDesk/shadow_files/.pict.idsh
       /windows/apps/Iedit/iedit *
QNX Windows Window = *.wnd /windows/apps/InterDesk/shadow_files/.wnd.idsh
       /windows/apps/Iedit/iedit *
GIF Picture               = *.gif       * /windows/apps/Image/gifw *
PAX Archive               = *.pax       * /bin/pax -f *
TAR Archive               = *.tar       * /bin/pax -f *
CPIO Archive              = *.cpio      * /bin/pax -f *
Slideshow                 = *.slide     * /windows/apps/slideshow *
Vedit Macro               = *.vdm       * /bin/vedit -x *

# The following group specifies the configuration of the application dock.
[AppDock]
NumFiles=9
File1=/windows/bin/wterm
File2=/windows/apps/Iedit/iedit
File3=/windows/apps/Sedit/sedit
```

```
File4=/windows/apps/Calc/qwcalc
File5=/windows/apps/loadmon
File6=/windows/apps/Mandel/mandelq
File7=/windows/apps/puzzle
File8=/windows/apps/Solitaire/solitaire
File9=/windows/apps/Vpoker/vpoker

# The following group specifies the clock's options.  The options given here
#  are the default ones used if an initialization file does not have a given
#  entry.
[Clock]
ClockOn=TRUE
Type=0
ShowSeconds=TRUE
ShowDate=TRUE
HourlyBeep=TRUE
24Hour=TRUE
AlarmOn=FALSE
AlarmTime=12:00
AlarmDaily=TRUE
AlarmDate=01/01/1996
AlarmBeep=TRUE
AlarmShowMsg=TRUE
AlarmMsgText=The alarm went off!
```

File Manager Initialization File (`IDskFm.ini`)

The InterDesk File Manager initialization file has the following groups, with the given keys. A sample copy of the initialization file follows the description.

[Keyboard] This group specifies how the File Manager should handle the keyboard.

HandleKeys=*x* This Boolean key specifies whether the File Manager should grab keystrokes (such as the arrow and page keys) for its own use, or if it should leave such extra keystrokes to QNX Windows to handle. Set this to TRUE if you want to use the arrow keys to scroll within a File Manager window. Set it to FALSE if you want the arrow keys to emulate a mouse in the File Manager window. If it is set to FALSE, the File Manager's accelerator keystrokes will still function.

BackKey=*x* This key specifies what keystroke should be used to send the File Manager to the back of the screen. This only works when you have HandleKeys set to TRUE. The keystroke can be used to cycle through the windows. It is a numeric QNX Windows keystroke value. The

default value of 65445 specifies the '5' on the numeric keypad, QNX Windows' default window cycle key.

[View] This group specifies defaults for view-related settings in the File Manager.

SortBy=*x* This key specifies what to sort by. 1 is file names, 2 is file size, and 3 is file date/time. If the values are negative, the files are sorted in descending order instead.

DirsFirst=*x* This Boolean key specifies whether to sort directories first in the listing.

ListDisplay=*x* This key specifies the default list format display information. Its numeric components will not be given here.

[Confirmation] This group specifies defaults for confirmation.

FileOverwrite=*x* This Boolean key specifies whether the user should be notified before a file is to be overwritten.

Copy=*x* This Boolean key specifies whether to confirm file copying.

Duplicate=*x* This Boolean key specifies whether to confirm file duplication.

Delete=*x* This Boolean key specifies whether to confirm file deletion.

Move=*x* This Boolean key specifies whether to confirm file moving.

Link=*x* This Boolean key specifies whether to confirm file linking.

Mouse=*x* This Boolean key specifies whether to confirm a mouse drag-and-drop operation.

TextTo=*x* This Boolean key specifies whether to confirm a text conversion.

[Print] This group specifies the default commands used to send files and directories to the printer. The commands can be modified to suit your system's configuration.

Place asterisks in the locations where the directory or filename should be inserted. If no asterisks are specified, the name will be appended to the end of the command. A backslash preceding any character will insert that character verbatim into the command.

Because the command is executed by the shell, you can include environment variables, output redirection, etc.

File=*x* This key specifies the default command to be used to send a file to the printer. The default value for this is as follows:

```
lp -P txt *
```

which prints the file on the "txt" queue.

Dir=*x* This key specifies the default command to be used to send a directory listing to the printer. Its default value is as follows:

```
ls -alhqvF * > /dev/spool/txt
```

which redirects a directory listing to the "txt" queue.

A sample copy of the IDskFm.ini initialization file follows. All key values shown are the default values for the keys, which are used when the key is not defined in the user's initialization file.

```
# InterDesk File Manager initialization file.

# This group specifies keyboard-handling options
[Keyboard]
HandleKeys=TRUE
BackKey=65445

# The following group specifies defaults for view-related settings.
[View]
SortBy=1
DirsFirst=TRUE
ListDisplay=127

# The following group specifies defaults for confirmation settings.
[Confirmation]
FileOverwrite=TRUE
Copy=FALSE
Duplicate=FALSE
Delete=TRUE
Move=FALSE
Link=FALSE
Mouse=TRUE
TextTo=TRUE

# The following group specifies the default cmds used to print files and dirs.
[Print]
File=lp -P txt *
Dir=ls -alhqvF * > /dev/spool/txt
```

Help Viewer Initialization File (`IDskHelp.ini`)

The InterDesk Help Viewer initialization file has the following groups, with the given keys. A sample copy of the initialization file follows the description.

[Window] This group (the only one) specifies the default location, size, and attributes of Help's main window.

WinX=*x* This key specifies the x-coordinate, in tips, of the window's upper left corner.

WinY=*x* This key specifies the y-coordinate, in tips, of the window's upper left corner.

WinW=*x* This key specifies the window's width, in tips.

WinH=*x* This key specifies the window's height, in tips.

WinMax=*x* This Boolean key specifies whether the window is maximized to its full size on the screen.

The default, if no options are present in an initialization file, is to open up a Help window at the center of the screen. Whenever Help is exited, its size and position are saved in the initialization file.

A sample copy of the IDskHelp.ini initialization file follows.

```
# InterDesk Help initialization file.

# These options specify the location of the main window on the screen.
[Window]
WinX=1000
WinY=1000
WinW=6650
WinH=3650
WinMax=FALSE
```

Chapter 11—Contacting the Author

If you want to report a bug, problem, or difficulty in InterDesk; if you have a question; or if you want to suggest changes or additions to InterDesk, you can contact the author in one of the following ways:

- By telephone. This is discouraged, except for users who have made a contribution.
- By mail. The address is:

  Scott Moonen
  104 Brunner Street
  Hummelstown, PA, USA
  17036–1203

- Through QSSL's QUICS e-mail system. Send e-mail to userid "`scmoonen`". This is probably the best and fastest way to contact me. Since I don't log in every day, there may be a response delay of a few days or so, particularly over a holiday.
- I don't yet have an InterNet connection. Stay posted for an e-mail address.

The latest version of InterDesk (both with and without the source code) should always be available for download on QUICS. The latest version of this documentation should also be available, along with a text file that describes changes to both InterDesk and the documentation.

Chapter 12—Using Drag-and-Drop Capability in User Programs

You can implement InterDesk's drag-and-drop capability in your own programs. Not only can files be dragged, but other data formats as well—text, QNX Windows pictures, and any other user-specified format you can think of!

The InterDesk Graphical Shell serves as the drag-and-drop clearinghouse, or mediator, between programs that support InterDesk's drag-and-drop protocol. The Graphical Shell is actually two programs that are created by a fork at run-time—a drag-and-drop server, and the "shell" portion that manages the application dock. The "shell" portion registers with the drag-and-drop server using the same drag-and-drop protocol that the File Manager and other user applications use.

A drag-and-drop interface library and documentation are supplied in the "lib" subdirectory off of InterDesk's base directory. Consult this documentation for information on incorporating drag-and-drop into your own programs. All that you need to implement drag-and-drop is right there.

Also included in the Graphical Shell interface library is a function, `IDAutoStart()`, which can be used by programs when QNX Windows shuts down to ensure that they are loaded the next time QNX Windows starts up. This is the same function used by the File Manager to implement its own autostartup feature. Documentation for this function is in the aforementioned "lib" subdirectory.

Use, Distribution, and Disclaimer

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The information in the code and documentation is subject to change without notice. I reserve the right to update or change such information at my discretion and without the consent of or any obligation to any users.

Chapter 13—InterDesk's Source Code

If you chose to install InterDesk's source code, then it was placed in the "`source`" subdirectory off of InterDesk's directory (usually `/windows/apps/InterDesk`). The source code for each application is contained in subdirectories off of this directory. Each application has its own makefile, so to rebuild an application, you need only change to its directory and type "`make`". The "`source`" directory, however, contains two scripts, "`make_all`" and "`build_all`", which can be used to re-make, or unconditionally re-build, respectively, all of the InterDesk applications.

Within the "`source`" directory are three important files: `wcc_cmd`, `wcc_flags`, and `wlink_flags`. These files are referenced by all of the makefiles, and contain the appropriate commands and flags to compile and link all of the InterDesk programs. With appropriate substitutions, it is possible to recompile all of the InterDesk applications with new optimizations or processor targets. The default files go for substantial optimization, in 32-bit mode. There are, however, two sets of alternate files, one with a "`.16`" suffix, and the other with a "`.32`" suffix. The "`.32`" files are merely the default settings; the "`.16`" files, on the other hand, contain all necessary settings and optimizations to compile and link InterDesk's programs as 16-bit binaries. All you have to do is a "`cp` *`xxx`*`.16` *`xxx`*" followed by a "`build_all`", and your copy of InterDesk will then be 16-bit.

InterDesk actually started life as a 16-bit system. It was eventually changed over to 32-bit midway into the project, but was configured so that it could be returned to 16-bit. InterDesk has therefore been tested quite well in both configurations, and you shouldn't encounter any surprises when changing over to 16-bit. In particular, it makes no difference for the drag-and-drop system whether the InterDesk Graphical Shell and any client applications have the same word size.

As mentioned in Chapter 1, you may *not* use any of InterDesk's source code in your own software, or distribute any of InterDesk's programs as part of a software package, without my permission. Please contact me to arrange for a license.