

# *Servant*

*A New Shell for the  
Macintosh*



Program by *Andy Hertzfeld*

Documentation by *Scott Kronick*

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*A New Shell for the  
Macintosh*



Program by *Andy Hertzfeld*

Documentation by *Scott Kronick*

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## **Introduction to Servant**

When you turn on a Macintosh and insert a disk, you expect to see a desktop and its icons. This is the starting point for you to work with disks and launch applications.

Servant replaces the old starting point (created by the Finder program in the System Folder) with a more powerful desktop that is an accessible part of your work environment at all times. As the central application between you and your disks, Servant will:

- Perform desktop tasks faster, more conveniently, and more informatively.
- Allow you to keep open numerous applications and disk windows at the same time, and to switch from one to another instantly by clicking in an application or disk window.
- Give you the ability to modify an application by directly accessing and editing its resources.

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### *On the Impetus for Servant*

*Servant is a replacement for Apple's Finder program. A lot of programs like spreadsheets, word processors, and database programs are constantly improving. Every month there's a new one coming out that ups the ante a little bit and forces all*

*the people who have the other ones to improve their product to make it better and better and better. That's just the best side of capitalism, of a free open market causing products to improve.*

*Well, I think the Finder is the most important single program in the Macintosh environment. It's the one program that everyone really has to use. And that one wasn't improving enough. The Finder, in the end of 1985, was almost identical to the Finder when the Mac first came out. The reason it wasn't improving was no one was really challenging it. No one was pushing it to evolve in newer and better directions. That's what I tried to do with my Servant program.*

\* \* \*

### **How is this manual organized?**

This manual shows you how to use Servant with four tutorial chapters and a reference chapter indexed graphically and by topic.

Interspersed through the tutorial chapters (and the introduction) are excerpts, shown in italics, of a Servant talk and demonstration given by program author Andy Hertzfeld. Even without the benefits of a live demonstration, you will find that these excerpts are a fun and insightful way to learn about Servant. You'll also discover, as I did, that the program author often speaks more instructively than the manual writer writes.

- Chapter 1 shows you how to use the new desktop.

- Chapter 2 shows you how to add special touches to the desktop.
- Chapter 3 shows you how to use the desktop and multiple applications at the same time.
- Chapter 4 shows you how to explore and manipulate the resources of applications and system files.
- Chapter 5 contains an annotated list of Servant features indexed both graphically and by topic.

If you want to start using Servant with as little reading as possible, or are already familiar with Servant and want to learn more about specific features (for instance, what does that *eye* do?), use the graphic index to point you to the annotated list of features in Chapter 5. The graphic index uses example desktop windows, pull-down menus, and familiar Macintosh terms to make the correspondence between what-you-see and what-you-need-to-do simple.

### **What hardware and system versions does Servant require?**

Servant works on any Macintosh with 128K or 256K ROMs. This includes the 512e, Mac Plus, Mac SE, Mac II, and older machines that have been upgraded with 128 ROMs and at least 512K of memory.

Disks initialized with either HFS (hierarchical file system) or MFS (Macintosh file system) are supported. All types of disk drives are supported, though the current version of Servant does not recognize AppleShare volumes.

Servant ought to be used with the latest System version 4.1 (or version 3.2 for 512e users).

### **How is Servant being released?**

Current versions of Servant are free of charge and can be distributed freely. The program is undergoing testing and should be used with caution. *As with all software, always make backup copies of your programs and your documents-in-progress. Save your work often and on separate disks so that a program or disk crash will not cause you undue grief. For example, save to disk every fifteen minutes and save to a backup disk every hour.*

Servant no longer has a built-in expiration date. If a message box appears saying that the version has expired, you should obtain a current version.

\* \* \*

### ***On Expiration Dates***

*I put this little feature into Servant making it self-obsolete because my experience with my Switcher program was such*

*that I had, like, Version 2.0 circulating around while I was on Version 4.0. And people were giving me bugs that I couldn't care less about because it was three months old which, to me, seemed like a lifetime. So anyway, the idea I had was: "Well, why don't I make the versions of Servant self-obsolete themselves."*

*I built in an expiration date so that the version released, say, in the end of November would expire in the end of January. I thought, "Sure, I'll have a much better one available by then." And, of course, I had to work on other things. It turned out to be a bad idea because I wasn't fast enough with my new versions. But, I don't know if I'll continue doing that or not.*

\* \* \*

### **Where can I send feedback about Servant?**

When running Servant, the Apple menu offers the item Print Bug Report. If you have a printer attached to your Macintosh, selecting this item will print a form for sending bug reports and comments about Servant and its documentation. You can order additional copies of the documentation with the bug report form or the form at the front of this publication.

Servant Bug Report  
370 Channing Avenue  
Palo Alto, CA 94301

Servant Documentation  
1442A Walnut Street, Suite 278  
Berkeley, CA 94709



## **Chapter 1: Exploring the New Desktop**

### **Contents**

- **Starting Servant**
- **Using the Cursor to Push and Select**
- **Selecting More than One Icon or Selecting None**
- **Bringing the Entire Desktop into View**
- **Viewing Size and Information Formats**

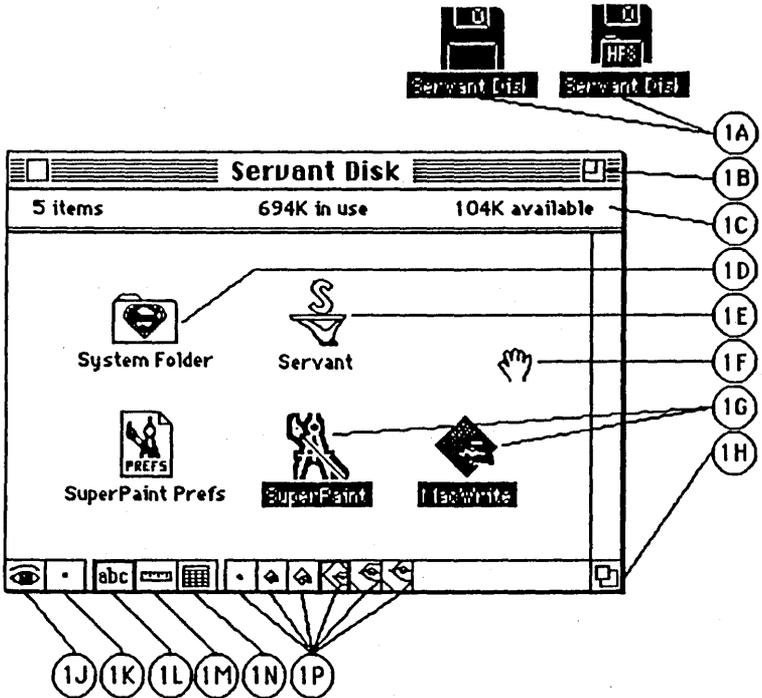
### **Starting Servant**

To begin using Servant:

1. **Insert a disk containing Servant into a drive. If you have not done so already, you should make backup copies of Servant by dragging the Servant application icon onto backup disks. You can do this from the Finder. Servant is not copy-protected.**
2. **Double-click on the Servant icon (or select the icon and choose Open from the File menu.**

After a few seconds, the disk window reappears in a slightly different format. The most noticeable difference is that a set of small icons has replaced the bottom scroll bar.

The following illustration shows a disk window after you have started Servant. (The circled codes index the annotated list of features in Chapter 5. The more basic of these features are discussed the tutorial chapters.)



### Using the Cursor to Push and Select

On the Servant desktop, the cursor is usually one of two shapes: a hand or an arrow. In the previous illustration, you see the hand (1F). When the cursor lies within the white space of a disk window, its shape is a hand.

When the cursor lies over an icon or outside the disk window, its shape is an arrow. You can move the cursor around the desktop to see how the cursor automatically changes between hand and cursor depending on what it covers.

Here's how to scroll with the hand:

1. Move the cursor onto the white space of a disk window so that it becomes a hand.
2. Hold down the mouse button and drag a short distance.

The hand pushes all the icons in the disk window as if they were on a sheet of paper. If you have used a graphics program with a hand cursor in order to push around your drawing area, you will see that Servant uses the hand in the same way. Most of your simple scrolling needs can be performed with the hand.

Here's how to select and drag (or launch) with the arrow:

1. Move the cursor over an icon inside a disk window so that it becomes an arrow.
2. Hold down the mouse button and drag a short distance.  
(Double-clicking on an icon will launch the icon's application just like the Finder.)

The icon under the arrow is selected and repositioned just as it would have been using the Finder. (Well, not exactly the same.

In Servant, the outline of a dragging icon retains its unique shape. In Finders 5.5 and earlier, the outline is always a simple rectangle.)

Dragging icons is the primary method for copying files. Servant uses icon animation to show the file copy in progress. When copying is initiated—either by dragging or by using the Duplicate command from the File menu—the cursor becomes a question mark for a moment while Servant determines if the copy can be performed. If the copy cannot be performed, a dialog box occurs. Otherwise, the copy begins by producing the outline of the icon that is being created. As the source file is read into memory, the icon outline fills with grey. Finally, as the destination file is written to disk, the grey area fills with its final shape.

Servant also allows icons to be selected from the keyboard. Pressing the Tab key selects the next consecutive icon, moving right to left and top to bottom. Pressing the Command-Tab key combination selects icons in the reverse order. You will find out more about this option in the next chapter in a section describing Servant's speech option.

Here's how to scroll continuously with the hand:

1. Move the cursor back onto the white space so that it becomes a hand again.
2. Hold down the mouse button and, instead of dragging, gently push the mouse, letting go of the mouse button as you push.

You will see that this sets the desktop icons in motion (in the direction of and at a speed relative to your push). You can stop the rolling scroll by pressing the mouse button or hitting any key.

Note: The command Rearrange... from the Special menu is not yet implemented. In a later version, this command will expand the functionality of the Finder's Clean Up command.

\* \* \*

### *On Scrolling (Part 1)*

*The first thing that everyone says when they see Servant is: "Hey, where are the scroll bars?"*

*I got rid of the scroll bars because I believe the scroll bars are only effective in one dimension at a time. A scroll bar is essentially a one-dimensional input device because it allows you to go up or down but not left or right. And there's a different scroll bar to go left and right, but not up and down.*

*Since viewing in Servant is fundamentally a two-dimensional operation, its just as easy for me to go diagonal as it is in any other direction. I really felt the hand was a better approach to scrolling and I really had to work hard to be able to make it fast enough to be able to scroll like that. As you can see, the performance is pretty good at scrolling around.*

*"What did I do to replace the scroll bars?" It's subtle when you start thinking about it. The scroll bars perform a number of different functions, not just incremental scrolling. When I first started Servant, I had a picture of a hand and a picture of an arrow at the bottom of the window. And the way I conceived of it, you click on the hand and, just like in MacPaint, you would get in scroll mode. And click on the arrow to get back the arrow.*

*But I quickly found a problem with that when I implemented it. Because what you always wanted to do was scroll an icon into view, then immediately click on it. What I came up with is obvious in hindsight, but wasn't initially: You make it be the hand as long as you're over white, but the arrow as long as you're over an icon. You can easily scroll no matter where you are. Give it a push and it moves.*

\* \* \*

## **Selecting More than One Icon or Selecting None**

The primary function of the cursor in a disk window is the same as in the Finder: You select icons by pointing and clicking (and can launch applications by pointing and double-clicking).

Using the cursor when it is a hand gives you an additional scrolling function without the inconvenience of scroll bars. But perhaps you are wondering how to select more than one icon at a time. You can do this with a selection rectangle (for a contiguous group of icons) or individually.

In the Finder, you click in the white space and drag a selection rectangle around the icons you want selected. In Servant, there are two ways to create a selection rectangle starting from the white space of the disk window:

- Double-click and drag. Holding down the button on the second click turns the hand cursor into the arrow cursor.
- Hold down the Option key and drag. Holding down the Option key turns the hand cursor into the arrow.

To select a group of icons individually, hold down the Shift key (this prevents previous selections from becoming unselected) as you select each icon of the group.

Servant also deselects icons differently than the Finder. In the Finder, clicking in the white space of a disk window will deselect all icons (leave no icon selected). In Servant, clicking anywhere inside the disk information bar (1C) will deselect all icons. The disk information bar is the area in the top of the window frame that contains the number of items, amount of memory in use, and amount of memory available.

### **Bringing the Entire Desktop Into View**

Whenever your active directory window is sized such that some icons are hidden, you have four options to bring the hidden icons into view. Using the Finder, the only alternative was scroll bars. (To see how the latter two features work, hide a

few of the icons by pushing them out of view with the hand or by making the window smaller.)

1. Push with the hand cursor (1F). As you saw in a previous section, the cursor is a hand whenever it lies over white space in an active directory window.
2. Hold down the button while pointing in the "eye" iconette (1J). The active desktop window is shown in a "Show Page" view where all icons, in shrunken form if necessary, are visible. Whenever there are hidden icons, a rectangular outline will be present to indicate the current window view.

By holding down the button on the "eye" iconette and dragging the mouse into the rectangular outline, you can move the current view of the window. The outline can be dragged to any position on the desktop to encompass a set of icons.

3. Hold down the button while pointing in the "arrows" iconette (1K). This scrolls the icons. The icons move in the direction that the cursor lies with respect to the center dot of the iconette. For instance, if the cursor is bottom-left of the center dot, the icons will move to the bottom-left. When the cursor is moved farther from the center dot, the speed of scrolling increases.

In addition to scrolling, the "arrows" iconette changes form to indicate the desktop position of icons in relation to the viewing window. When the iconette shows a single dot, all icons are within view of the current window. When the iconette points with one or more little arrows, off-screen icons are present in the directions shown.

4. Double-click in the "arrows" iconette. This automatically centers the icons within the viewing window. The little arrows will indicate if icons remain outside the view of the centered window.

\* \* \*

### *On Scrolling (Part 2)*

*Other scrolling things in Servant are: There's this eye that you shows you everything. The hand allows you to incrementally scroll, replacing the scroll bar arrows, but it doesn't replace the scroll bar thumb because the scroll bar thumb allows you to go from the beginning of the document to the end of the document without going in-between.*

*So what Servant does to replace the thumb: It has this little eye-con, so to speak, where when you click on it, it reduces—no matter how small your window is or no matter how many files you have—it down so all the information fits. And just like "Show Page" in MacPaint, you can drag a box around to scroll to exactly the point where you want to scroll.*

*These arrows (the "arrows" iconette) replace the scroll bar shading in the sense that they show you, not only that there is hidden information, but the direction of the information. When only the right arrow is on, it is saying, "Hey, all the information is over to the right". When I make the window real big, there're*

*no arrows at all because I am seeing everything.*

*Another function of the arrows—the arrows actually have three functions—is that when you click on the arrows, they act like a joystick. By moving a few pixels, I can change the direction. And it goes very fast if you move far away. That replaces all four scroll bar arrows in one little area.*

*One of the things I objected to, especially on a large screen, is to get from the top arrow to the bottom arrow, you had to traverse the whole scroll bar, which seemed a little silly because you always overshoot. So I give you all four arrows within a few pixels of each other for fine scrolling control.*

*Sometimes you can get lost. I can give it a push here and it tries to keep all the information on the screen, but you can force it off the screen. And I hate looking at a blank screen. You think, "God, where am I? I'm lost."*

*The solution for that is: If you double-click on the arrows—no matter how lost you are—it will always center you where the action is. So you can never feel really lost because you can double-click on the arrows.*

\* \* \*

## **Viewing Size and Information Formats**

Servant allows you to see icons in a variety of size and information formats. To switch from one to another format requires only that you point and click in an iconette.

1. Click on any one of the six "zoom" iconettes (1P). The graphic image of the icons will shrink or expand in scale. The iconette's image reflects the relative size of the desktop icons. The currently selected iconette is shown with a thick border. The iconette fourth from the left is the default setting. The same feature can be implemented by choosing Zoom Out (for shrunken icons) or Zoom In (for expanded icons) from the View menu.

2. Click on the "ruler" iconette (1M). The number of bytes each file occupies on disk is listed below the file's name. A file's size is measured in K (1024) bytes or, if under 10K, B (single) bytes. The same feature is offered by choosing Size from the View menu. Be aware that this feature may take a few moments when the window contains a large number of embedded folders because Servant is determining the size of each component file.

3. Click on the "calendar" iconette (1N). The date each file was last modified is listed below the file's name. The same feature is offered by choosing Date from the View menu.

4. Click on the "abc" iconette (1L). Only the name of each file is listed below the icon. This is the default setting. The same feature is offered by choosing Name Only from the View menu.

5. Close the disk window by clicking in the Close box. The selected disk icon will show whether or not the disk has been initialized with HFS, the hierarchical file system. Floppy disks formatted with HFS will show the letters HFS embossed on the

disk icon. Floppy disks formatted with MFS (Macintosh file system) have plain disk icons.

Two other viewing features of Servant:

1. When you open a folder, the size of a folder is given in the information bar (1C). This contrasts with the Finder which gives you the size of the entire volume in each folder window.
2. Servant remembers the iconette settings between sessions. Whenever you open a directory window, it displays the window icons in the same format as when the window was last closed. The default format is Names Only with the same size icons as the Finder.

\* \* \*

### *On Viewing*

*Another view aid in Servant is zooming. Right now, the nominal way to display the icons is just like the Finder: 32 by 32 pixel icons. But it turns out, when you have a lot of information on your disk, you might want to make the icons a little smaller. So I have this little construct here called the Zoom bar (the "zoom" iconettes). I can click and it makes them a little smaller.*

*You can make these smaller yet when you have lots of information, or smaller yet. Notice, even at these small sizes, fonts are surprisingly readable. The reason for that is: They*

*are not shrunken fonts like you'd normally see on the Mac, but actually tiny, teenie-weenie little fonts designed by an artist to be as good as they can be at that small size. Teenie-weenie little fonts allow you to see more information at once.*

*I feel the next smaller size is the most useful alternate size and other smaller sizes are also useful. But just for fun, I said, "Well, what will it look like if you made them a little bigger. So the largest size, scaled up twice the size, is the Sesame Street Macintosh. It's actually useful for people who are visually impaired to some degree. It's nice to have alternative bigger sizes in addition to smaller sizes. Certain people appreciate that. It's great for doing a demo. You can really see things very clearly.*

*Another thing to show you here is view level. One of the neat things Servant will do for you is display the sizes of objects. So when you click on the ruler, it shows you under the name the sizes of things. So, in a glance, you can see how big things are.*

*In a similar fashion to the size, if you click on this little calendar, it displays the modification dates. Because you often have a few versions of a document and you want to see which one is the latest or whatever.*

\* \* \*



## **Chapter 2: Adding Special Touches**

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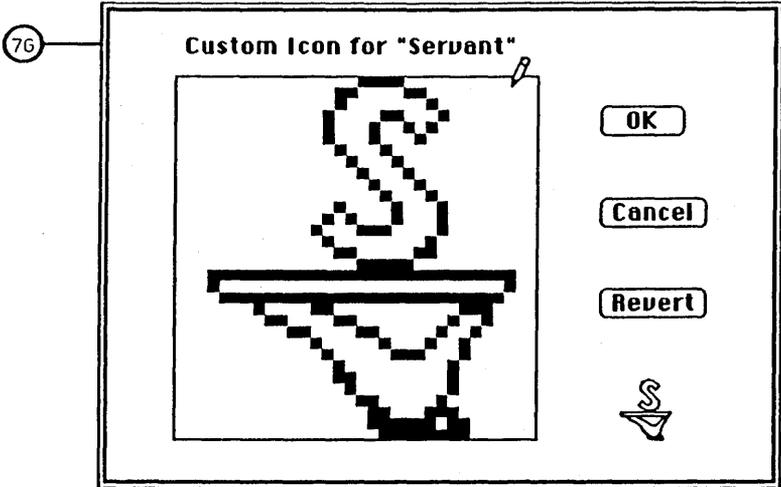
- **Making Custom Icons and Using Folder Tricks**
- **Setting the Background and the StartUp Application**
- **Making Servant Talk**

### **Making Custom Icons and Using Folder Tricks**

In this section you will see how to make custom icons for applications, folders, and disks. You can use existing icons to help create custom ones.

Here's how to draw your own custom icon:

1. **Select a single icon.**
2. **Choose Custom Icon from the Special menu. This will produce a dialog box containing the selected icon enlarged in fat bits.**



3. Use the cursor (it's a pencil when inside the fat bits square) to draw the icon in whatever way you wish. As you are drawing, you can see the custom icon in its actual size at the bottom-right of the dialog.

4. If you want to install your customized icon, click in the Okay button. This exits the dialog and the icon will retain its new form until you wish to change it again.

5. If you do not want to install your customized icon, click in the Cancel button. This exits the dialog without any changes made.

6. If you want the icon in the dialog box to be redrawn the same as it was before your current changes, click in the Revert button.

7. If you want the icon in the dialog box to be redrawn the same as it was originally created by the program (before any customization), click in the Revert button while holding down the Option key.

In addition to letting you draw custom icons, Servant has a feature that allows you to shrink an icon and stick its image onto a plain folder icon. You will find this is a nice way to create a folder that illustrates the folder's contents.

Here's how to create a custom folder icon with a shrunken icon.

1. Select the icon you want to appear shrunken on the folder icon.
2. Choose Copy from the Edit menu. This puts the text of the icon onto the Clipboard.
3. Select the folder you want the shrunken image to appear on.
4. Holding down the Option key, choose Custom Icon from the Special menu.

The Custom Icon dialog box appears with the shrunken icon inserted on the folder. At this point, you can click in the Okay box to install the folder as you see it or further customize the icon with the pencil.

Servant also allows you to replace a folder icon with an existing icon. Use the same four steps for shrinking an icon onto the folder except instead of holding down the Option key (in step 4),

hold down the Command key. The selected icon becomes the folder icon. You might find that folders that no longer use the folder image are confusing, but Servant gives you the option of making any of your icons look any way you wish.

Another folder feature of Servant [Caution: sometimes buggy] allows you to create a new folder with selected files automatically inserted inside the folder. Ordinarily, selecting New Folder from the File menu creates an empty folder the same as it does in the Finder.

Here's how to create a new folder that automatically has selected files inserted within the folder:

1. Select the icons you want inserted in the new folder you are about to create.
2. Holding down the Option key, choose New Folder from the File menu.
3. Give the "empty" folder a name. When you open the newly created folder, you will find that it is not really empty; inside are the selected files.

\* \* \*

### *On Little Touches*

*Some of the other little touches... I believe in putting a lot of detail into a program. Some people think, "Oh, you shouldn't put that feature in; it's too much fun." I get told that all the*

*time. "Business computers shouldn't be fun." But I like making my applications fun because business people are people and they enjoy fun things.*

*So I'll show you one of the fun little features that are in here. Well, I don't know how fun this is: Notice that when I drag something, it has the outline that is identical to the way the icon looks. The Finder only has a square outline. But since this application icon is diamond-shaped—it has a diamond-shaped outline. Or if I drag the Servant icon around, it'll have the S-shaped outline. That just helps to reinforce the metaphor. I can tell at a glance what I am dragging around without having to think about it like you do in the Finder. So that's kind of a useful thing.*

*Here's the other thing I wanted to show you is: When you drag something to the trash, the lid pops open. Just another little fun thing. That's the one that business people hate. "You can't do that; that's stupid." Yeah, it's fun to be stupid.*

\* \* \*

## **Setting the Background and the StartUp Application**

Like the Finder, Servant allows you to specify an application that is to be automatically launched each subsequent time that the Macintosh is started. The specified application remains the startup application until you specify another application to be the startup.

By default, the Finder is the default startup application. Here's how you can make Servant (or any other application) the startup:

1. Select the icon of the application that you want to be the startup one.
2. Choose Set StartUp from the Special menu.

Be careful not to rename the new startup application. This will cause the current version of Servant to not recognize the application as the startup.

Servant also give you the ability to make a MacPaint or Thunderscan document be the background pattern of your desktop. The picture in your document becomes the background screen. This feature supplements the Control Panel desk accessory that allows you to set the background to any 8 by 8 pixel pattern.

Here's how to set the background to a MacPaint or Thunderscan document:

1. Select the MacPaint or Thunderscan document that you want to be set as the background.
2. Choose Set Background from the Special menu.

If you select any icon other than a MacPaint or Thunderscan document and then choose Set Background, the background pattern will be set to the default gray pattern.

\* \* \*

## *On User Flexibility*

*I have been working on this program so long that, and there's so many features I always forget to demonstrate them. But I'll show one of the other ones that I consider to be a fun feature, which is: You can select any MacPaint document or Thunderscan document and say Set Background. So instead of the desktop being something grey, it can be one of the your heroes, like one of my heroes—Woody Allen.*

*Actually, I gave a talk earlier—late last year at Princeton—and they don't like Woody Allen so much at Princeton. They like this guy more (Einstein). Just click on anything that's not a MacPaint document or a Thunderscan document and you get back to the boring old desktop.*

*This gives you a finer level of control over the machine. It's kind of interesting: different people have different philosophies and I'm basically an anarchist-type person. I like giving everyone the flexibility to do whatever they want.*

*Bill Atkinson, who I worked very closely with on developing Macintosh, is kind of the opposite. He feels he knows the right way and he wants to tell the user because the user will do it a worse way than he can think of. And so one of the big fights I had with Bill Atkinson was over the Control Panel—one of the features in the Control Panel—which allows you to customize the desk pattern.*

*I wrote the Control Panel and I put in this feature that allows you to put in any pattern you like, and Bill just hated that. He thought, "Oh no." He wanted to be in control of the aesthetics of his screen. So anyway, since I wrote the Control Panel, I kind of won on that. But Bill aced me out because he made it that MacPaint is always gray, no matter how you set the background. I guess we both had it our own ways.*

*Since I like things to be as customizable as possible, the next step with Servant was to allow, instead of just a pattern, any kind of image you like.*

\* \* \*

## **Making Servant Talk**

Servant has an option that will let you hear the name of each icon as it is selected and each command as it is chosen. To use the speech option, you must have the MacinTalk file (a system file that comes on Apple's System disk) in the System folder.

Here's how to make Servant talk:

1. Make sure the MacinTalk file is in your System folder (or in the same directory as Servant). You need this file for speech to work.
2. Choose Options... from the Special menu. This will produce the Options dialog box.

3. Click on the Speech On button so that the option is checked.
4. Click inside the OK button to install the option. If you click inside the Cancel button, your Options changes will not be installed.

With the speech option turned on and the MacinTalk file in your System folder, your Macintosh will now speak the name of each icon as it is selected and each menu command as it is chosen. You may notice the responsiveness to tasks like dragging is slightly slower as the computer is speaking. Heck, they're some people who can't move and speak at the same time.

Servant provides an adjunct feature that makes speech more useful. As an alternative to using the mouse, icons can be selected using the Tab key. Pressing the Tab key selects the next consecutive icon, moving right to left and top to bottom. Pressing the Command-Tab key combination selects icons in the reverse order.

Using keyboard selection and command key menu commands along with Servant speech provides a means of interacting with disks without any visual needs.

\* \* \*

### *On Speech*

*Believe it or not, Servant will even talk if you want it to. It started in 1985. I'm an aficionado of CompuServe and some*

*person put up a very nice note saying he and his wife are both Mac fanatics. They both love the Macintosh, but they're visually impaired. They had a partial vision problem. They said, "Is there any way to enlarge the cursor. We love the Macintosh even though we're partially sighted because we can use very large fonts."*

*But they felt constrained by the fact that the cursor was really tiny and so they put up a message: "Is it possible to make the cursor larger?"*

*And another programmer, whose very knowledgeable about the Macintosh, answered, "No, I'm sorry. It's impossible to make the cursor larger because it's hard-wired in the operating system."*

*So I was reading that and I love reading things that are impossible. It's not fun to do things that are possible. And so, I saw that, and I wrote a big cursor routine that made the cursor 32 by 32 pixels. Eventually that got incorporated in the Radius full page display. It's one of the features in it.*

*But anyway, I put that up on Compuserve, and the people who originally requested it, I never heard from. But I got three letters from other people saying, "Oh yeah, we're partially sighted and having this big cursor made a real difference in us enjoying the Mac."*

*So that made me feel good. And when I was doing Servant, I thought, "Well gee, what other things can I do to help people who are a little visually impaired. One of them is being able to*

*make things big like that. I thought, "But gee, what if you can't really see at all. What if I turn off the screen of the Mac." I didn't want Servant to be the bottleneck to using your machine if you couldn't see very well. So, to that end, I implemented this feature where you can turn speech on.*

*So basically, you can get it to talk any command that you're giving. Even if your screen is off, at least... the other thing that goes along with that is you can use the Tab key to advance between the different programs. And Command-Tab makes it go backwards.*

*So you can go Tab-Tab-Tab, get to the program you want, say Command-Open, and being totally blind still will let you run your Macintosh. Well, I admit, most people who are blind won't really get that much use out of the Mac, but...*

\* \* \*



## **Chapter 3: Using the Desktop and Applications Together**

### **Contents**

- **Launching Applications**
- **Switching Between an Application and the Desktop**
- **Adding Another Application**
- **Switching Tips**

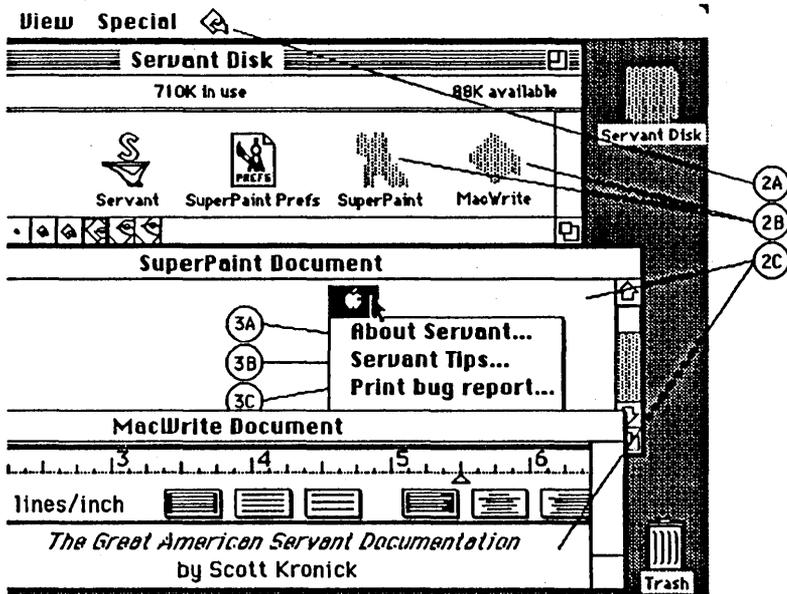
### **Launching an Application**

**Servant allows you to keep open numerous applications and disk windows at the same time, and to switch from one to another instantly by clicking in an application or directory window. As a result, desktop management is easily accessible even after an application has been started. The Servant desktop remains as an inactive window in the background.**

**In this chapter you will experiment by opening two different applications in addition to the Servant directory window. The example applications used in this manual are MacWrite and SuperPaint (in Andy's excerpt below, he uses MacWrite and MacDraw), yet you could substitute nearly any application that uses resizable windows (windows with a size box).**

For example, WriteNow, Word, FullPaint, PageMaker, and Excel work fine. On the other hand, MacPaint, though it works under Servant, doesn't offer the same versatility because it lacks a resizable window.

One of the best ways to see how Servant supports multiple applications at the same time is to look at the following screen shot. Below the illustration, you will find a series of steps necessary for you to create a similar setup. Remember, the circled codes 2A-2E serve as an index to the annotated list of features in Chapter 5.



Here's how to open up your first application along side of Servant:

1. **Resize the Servant directory window so that it looks like the one in the illustration (wide and short). This will give the screen room for the windows of the next two applications you will open.**
2. **Click on the MacWrite icon. As the program opens, the window will take up the entire screen.**
3. **Resize and reposition the MacWrite window so that it looks like the one in the previous screen shot.**

**Here are some fundamental aspects of Servant that you see:**

- **Two windows are open at the same time. One is Servant's directory; the other's MacWrite. The MacWrite window—the last one opened—remains the current active window.**
- **The menu bar contains MacWrite's (not Servant's) menu titles. Since MacWrite is the active application, it controls the menu bar.**
- **Appended as the last title of the menu bar is the Servant application icon (same as 2A). You can use this pull down menu to view and switch to the open applications. The active application is dimmed.**
- **At this point, MacWrite will function just as it always should. The only significant difference while working in the Servant environment is that the inactive directory window remains in the background (and easily accessible).**

## **Switching Between an Application and the Desktop**

Switching is as easy as clicking in an inactive window. Try it.

1. Click anywhere in the directory window. The window becomes active plus the menu bar changes to the Servant menu bar. The previous screen shot was taken with the directory window active and the Servant menu bar in control.
2. Perform any Servant task such as choosing Size from the View menu. This reaffirms that Servant's desktop management is your active application, while MacWrite remains visible as an inactive application.
3. Pull down the application menu from Servant's menu bar (2A) and choose the MacWrite item. MacWrite becomes active. The application menu is an alternative method of switching among applications. This is particular useful when an application's window is hidden.

Before going any further, you should experiment with your open application and the Servant desktop. Try switching between the two using both the click-in-the-window method and the application menu switcher.

It takes a little getting used to having multiple applications on the screen. By playing around, you will soon convince yourself that the active application has complete control of the Macintosh, including the menu bar. The inactive, background applications simply offer you an exceptionally fast and easy way to go from one application to another.

## **Adding Another Application**

Now you should try opening another application along side of Servant and MacWrite. In the illustration of this chapter, the third open window is a SuperPaint document. SuperPaint takes good advantage of Servant's abilities because (unlike MacPaint 2.0) its drawing window can be resized.

Here are the necessary steps to make your screen look like the one in the illustration:

1. Click in the directory window to make Servant active.
2. Double-click on the SuperPaint icon (or substitute another application that uses resizable windows). At this point, SuperPaint is the application in control.
3. Resize the Drawing window so that it looks like the one in the illustration. The SuperPaint drawing palettes still overlap the directory and MacWrite windows in the background.
4. Click in the MacWrite window to switch from SuperPaint to MacWrite. Click in the SuperPaint window to switch back to SuperPaint. Click in the Servant directory window to make Servant active. (If SuperPaint is active yet the palettes are missing, try choosing Hide Palettes/Show Palettes from the Windows menu.)
5. Try using the application menu to perform the switching. The effect is the same as clicking in a window.

6. Finally, use the Edit menu commands to cut, copy, and paste between SuperPaint and MacWrite. With the greatest of ease, you can draw in SuperPaint, select the drawing, copy it to the Clipboard, click in the MacWrite window, and paste the Clipboard image into MacWrite.

Now that you have your screen looking like the illustration shown at the beginning of this chapter, you might want to flip to the graphic index in Chapter 5 for a summary of its elements.

\* \* \*

### *On Switching and the Wristwatch*

*A lot of people think the main thing of Servant is what I'm about to show you. I think the main thing is what I've already shown you: the second generation Finder. But Apple thinks it's this little feature: when I launch a program, instead of the desktop...*

*Notice the hands of the wristwatch, by the way, always move. Apple copied that from me in the latest release of the Finder. And I copied it from a shareware program by Bob Finch. Under Servant, it does that in any program you're in, not just the Finder.*

*When I launch a program, instead of the desktop disappearing, the desktop is still there. Servant is underneath it. I can just click back so that switching between programs is just as simple as that.*

*I'll launch MacWrite here. MacWrite's a good one because it leaves the watch up the whole time so, you'll notice, the hands of the wristwatch spinning away, even while it's in MacWrite.*

*It's kind of a very subtle psychological thing why it's a good idea to spin the hands of the wristwatch. If you just leave the wristwatch up there, people get frustrated because nothing's happening. And they think, "Gee, why's the Mac so slow. It's wasting my time and not only is it wasting my time, it has the audacity to remind me that it's wasting my time by putting up this watch.*

*But now when they see the hands spin, they kind of think: "Oh gee, it's working its little heart out for me." And you're more apt to appreciate it. It's kind of subtle, but it really is true. When it's doing something, you think it's not just sitting there. Of course, it's doing work all the time, but it's just invisible to you.*

*So anyway, let's say I want to get an image from MacDraw into MacWrite. Well, all I have to do is draw the image into my horrible way here—my self portrait—and say Copy and then just click on MacWrite. And it's simple as that. Servant knows to do the extra work. There's no more of this "always convert Clipboard" stuff that Switcher does. Servant just does it because it's smarter about that. Just say Paste and it's in MacWrite.*

*Other things to notice: When MacWrite came up there, its window was very large, filling the entire screen practically.*

*You can feel lost. You think, " Uh gee, it's covering something else. I know its down there, but where is it?"*

*That's why there's this little application menu in the upper-right. I think of it like a bookend. The apple's all the way on the left and the application is on the other side. The application menu shows you all the applications you're running and where to go. So even though I'm in MacWrite here, if I want to go to MacDraw, it's as simple as selecting MacDraw from the Application menu. If I'm in MacDraw and I want to get back to Servant, it's as simple as selecting Servant from the Application menu.*

*The desktop knows that MacWrite has created some temporary files, so it sticks them up there. When I quit from an application—you'll notice that it gives me all the normal confirms—it does the reverse zoom rect, shrinking back down into its icon. Just to reinforce the metaphor.*

\* \* \*

## **Switching Tips**

Here are some tips for working with two or more open applications under Servant:

- Look at the menu bar if you forget which is the current active application. You can't always rely on finding an active window.

For example, close the MacWrite text window by clicking in the Close box or choosing Close from the File menu. Though the

only open window on the screen is the inactive directory window, MacWrite is still the active application and the menu bar contains MacWrite's menu titles. Choose New from the File menu to reopen a blank text window.

- After an application has been opened, the subsequent opening and closing of its existing documents will not be automatically reflected by the dimming and undimming of the document icons in the directory window. Document icons will be updated only after the application has been exited.

For example, if you open a MacWrite document by double-clicking on its icon, the icon is dimmed (the same as the Finder). However, closing the document will not undim its icon in the directory window until MacWrite is quit.

- Many programs such as MacWrite use internal temporary work files. Ordinarily, you would not see icons for these files. (You might have seen these temporary files appearing in the Finder if you ever turned off the Macintosh or crashed before properly exiting a program.)

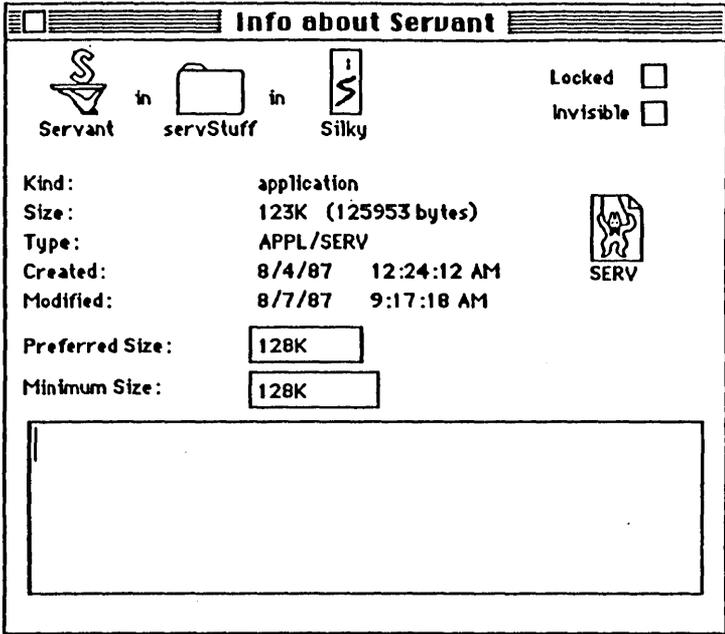
Since Servant is operating visually beneath your application, you will see these temporary work files appear on the desktop. When an application is exited, the application will remove the temporary files from the desktop just as it does from the Finder. At no time are you required to deal with these temporary files; the applications take care of them.

- From the desktop, select an icon then choose Get Info from the File menu and examine the resulting dialog box. Every application has its own Get Info dialog. Servant provides much more information about an application than does the Finder and provides a method for the user to allocate memory.

The Servant application's Get Info box is shown on the next page. In addition to the resource information and text input area are:

1. The folder location of the application, nested up to four folders deep. In the illustration, Servant is in the folder servStuff on the hard disk Silky.
2. Two check boxes that allow you to change an application's Locked and Invisible attributes.
3. Two input boxes that allow you to specify the memory you want allocated to the application. Most applications provide preset preferred and minimum memory requirements. Servant gives you the opportunity to change those values.

Memory allocation is particularly important when running multiple applications and available memory is scarce. If you are having difficulty running a set of applications, you may want to reallocate memory to optimize the performance of your programs.



The menu item Show Memory from the Special menu produces a dialog box that shows graphically the portion of memory currently being used by an application (the dark gray region) and the additional memory available to the application (the light gray region). The number to the right of the bar graph region shows the total memory allocated to an application.



## **Chapter 4: Exploring Resources**

### **Contents**

- **Understanding Resources**
- **Opening a Resource file**
- **Playing with the System and its Desk Accessories**

### **Understanding Resources**

Applications written for the Macintosh are made up of components called resources. An application's resources are stored in internal resource files that are intended to be invisible to the application user, yet accessible to those who wish to modify the application.

Resource files contain the specifications for such program entities as menus, windows, dialog boxes, fonts, icons, and program code. By having each of these (and many more) entities specified as separate resources, they are more easily accessed and modified.

Servant lets you open resource files and see the resources inside. Also implemented are resource duplication and most kinds of resource moving (though not fonts and desk accessories, yet). Resource copying and moving work just like file copying and moving

The current version of Servant allows you to edit three types of resources: ICN, ICN#, and STR\_. In addition, the current version lets you browse PICT and snd\_ resources. Note: Servant will only play sounds if the sound manager is installed. The sound manager is always installed on the Mac II and can be installed in the System Folder of other Macs (but not by Servant).

Servant represents all resources using icons. (The Custom Icon item from the Special menu works with resource icons, too.) You can use Servant to explore and manipulate resources using the same desktop techniques that you use to manipulate disk files.

The System file makes particularly important use of resources. Icons, fonts and desk accessories are examples of System resources. Using Servant, you can easily open up the System file to look at its resources.

In the case of desk accessories, you can even move these resources out onto the desktop. The icons representing desk accessory resources can be opened and run just like applications. An upcoming version of Servant will allow you to copy fonts and desk accessories among disks in the same manner as you copy ordinary application and document files. A new kind of box called a bundle will handle fonts and DA's.

If you are new to the concept of resources, Servant will provide your best first glimpse. Up till now, resources have been in the domain of the hacker. Servant gives anyone, hackers to the

meek, a way to explore resources with methods as simple as "opening up an icon to see what's inside."

You will not find a technical discussion of resources here, but in the following steps you will see how an application such as MacWrite is made up of a hierarchy of resource files and, ultimately, the resource data that helps define its nature.

When working with resources, you should be extra careful about making changes only on backup copies of your disks. Both the editing and moving of resources can produce unforeseen results among even experienced programmers..

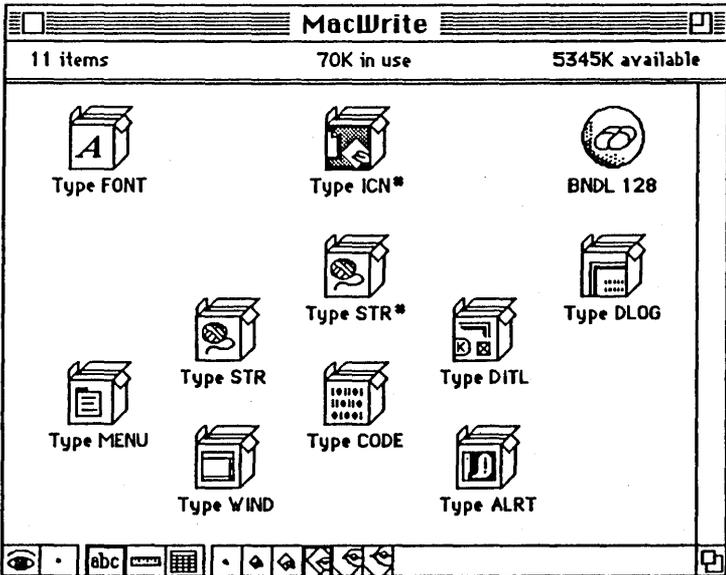
### **Opening a Resource File**

Here's how to open up an application to look at its resources:

1. Select (single-click on) the MacWrite icon.
2. Choose Resource Open from the File menu.

Alternatively, the Resource Open command can be performed by double-clicking on an icon while holding down the Option key.

The following is a snapshot of some MacWrite resource icons:



When you open a resource file , the window does not show you all its resources, but rather a subset of the common ones as determined by the file. However, by holding down the Command-Option keys and double-clicking on the file icon (or choosing Resource Open from the File menu with the Command key down), the window will show all of a file's resources.

The resource icons that are pictured as boxes contain multiple resources of the same type. If a file has only one resource of a

given type, the resource is shown alone without a box. Also, you can take resources out of their box and drag the box to the trash if you wish, but you can't rename Type boxes.

You can look inside some of MacWrite's resource files by double-clicking on their icons. (Or by selecting the icon and choosing Open from the File menu.)

Try the following steps:

1. Open the resource file named Type ICN# by double-clicking on it. Inside you will find a window with three numbered icons.
2. Double-click on each of the numbered icons. Each of these open up with a window that contains one of the desktop icon images used by MacWrite.

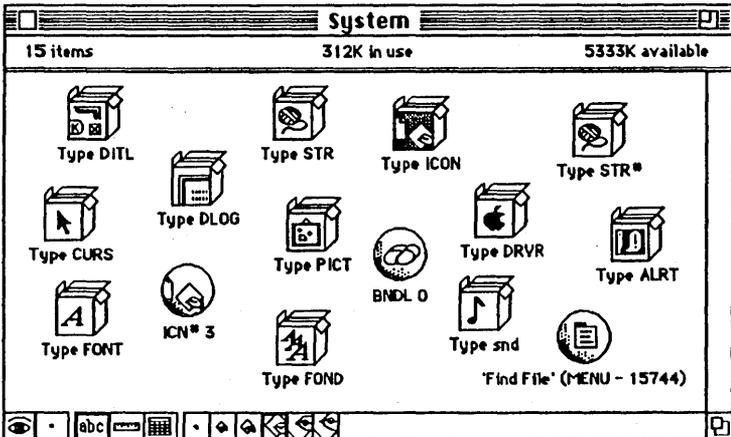
You ought to recognize MacWrite's desktop icons as the application icon, standard document icon, and text-only document icon. They are 32-by-32 bit images that are stored in a icon resource file. These images can be editing with the cursor that becomes a fat bits pencil when it lies over the icon.

You can close each layer of windows by clicking in the window's Close box (or selecting Close from the File menu). Try opening other MacWrite resource files. If you hear the Macintosh tone and nothing else happens, the resource file cannot currently be opened to any deeper level.

## Playing with the System and Its Desk Accessories

After closing all of MacWrite's resource windows, you should try opening the System file's resources. Here's how to do that:

1. Open the System Folder. (See item 1D in Chapter 5 if you want a brief explanation of the S symbol on the System Folder.)
2. Select (single-click on) the System icon. The System file is not an application that can be run by double-clicking on it.
3. Choose Resource Open from the File menu. The System file opens to a window full of its component files. Some of these can be opened further.



4. Double-click on the resource file icon named Type DRVr.
5. Double-click on some these icons with desk accessory names. Now you have an alternative to the Apple menu for opening desk accessories.
6. Try dragging one or more of the desk accessory icons out of its window and onto the desktop. Now you have the versatility to put desk accessories wherever you want them.

By exploring resource files, you notice that they are identified by type, creators, and ID numbers. Resources use three- or four-letter names plus important punctuation marks like parentheses and single quotation marks. If you want to change a resource's name or number, you must be careful to follow rules such as giving each resource a unique ID number and using the left parenthesis to end a file name.

You also have available the Get Info box from the File menu to examine and change certain resource features. A sample Get Info box was shown in the last chapter.

More information on resource editing will be provided in a documentation update.

\* \* \*

## *On Resource Editing*

*So far I've showed you the two aspects of Servant: One of which is the second generation Finder with advanced browsing capability; another is the second generation Switcher with the windows on screen. Well, a third part to Servant is what I call "the Resource Editor for the rest of us."*

*What I think has happened over the last one and a half years or so is: The Mac System has become more complicated than we ever intended it to become. When we were designing Mac, we thought, "God, we're making the ultimate computer, the perfect computer that will be usable by everyone. The first computer that you didn't have to be an expert to use."*

*But it turned out, as the System got more complicated, we didn't really plan on extending it. Apple began introducing products such as the LaserWriter, AppleShare, new System files and, all of a sudden, the System became more complicated.*

*It turns out, there are these installer programs that let the Macintosh use the LaserWriter, they add files to your disk, they change stuff in your System file. But the disk looks pretty much the same to you after the Installer program has run so there's some mystery. The normal user doesn't understand what's going on beneath the surface of their Macintosh.*

*I really think there is a very boldly defined dividing line between the Mac user and the Mac expert. The dividing line is a program called ResEdit. If you know how to use ResEdit,*

*you're one of the Mac elite as opposed to just an ordinary user. Because ResEdit is an awkward program to use—everyone knows it is very dangerous—one of my goals with Servant is to turn every Macintosh user into a Macintosh expert by making the resource editing features accessible to everyone.*

*My approach to doing that was, basically, leveraging the Finder metaphor which everyone is already familiar with. Everyone already knows that a little disk icon is a picture of a disk. When I open it up, there's little icons representing pieces of the disk called files. So in Servant, you can open up any file by saying Resource Open and you'll see that the file is made of little icons whose pieces are called resources.*

*By saying Resource Open with MacWrite, we have a representation of the resources inside of MacWrite. We're now looking at the insides of MacWrite, just like when we opened the disk icon we're looking at the inside of the disk.*

*There's these little boxes with the resources. In the one called Menus all the menus inside MacWrite. You can see the Format menu, the Font menu, the Edit menu. So its kind of fun. It's almost like you're a voyeur, looking at places you're not supposed to be looking at to see the real insides of things.*

*For example, you can look at the icons in MacWrite. And we can double-click on the icon and it will show you its document icon. That one's a custom icon. Where's the MacWrite icon? It's probably number 178. Yeah, there it is. That's the MacWrite icon.*

*We can drag these resources around just like you can drag around any things. But resources really becomes clear when you look at the System files stuff. One of the things I didn't mention is: Notice on the desktop is a little icon like this little calculator icon. Where did that come from? I wonder what would happen when I double-click on the calculator icon. Let's try it. It opens up into the calculator. It's representing a desk accessory. Desk accessories are just resources.*

*Here's the scrapbook. Let's click on the scrapbook. It opens up into the scrapbook. This one here's the control panel. But now, if we look at the Apple menu, we notice that there's the alarm clock, and key caps and the notepad and the puzzle. Where are those? I don't see the icons for those.*

*Well, the reason those are out there are is just because I chose to put them there. And I'll show you how to do that. If I don't want the control panel to be on the desktop anymore I can just take the control panel and drop it into the System file. I can open up the System file, see what's inside there—the System file is usually pretty complicated so it might take a little while, especially on a floppy disk—but we'll notice here we have the puzzle. So if I want the puzzle to be on the desktop, just drag that to the desktop.*

*So basically, what this does is replace the program called Font/DA Mover. To me, that's a very non-Macintosh program. It doesn't feel intimate. You're not touching things. Why don't you copy desk accessories just like you do files? Well, with*

*Servant you can. If I want to get rid of the puzzle, I drop it into the trash. I don't really want to get rid of it, so bring it out of the trash.*

*If I want to copy a desk accessory from one disk to another, I just copy it like I do in the Finder. So that makes things more intimate and more Mac-like which was sort of my goal with this thing. As you can see, one of the things we had to do here was create a lot of icons for these different resources to make them accessible for everyone. Like, here's the picture resource. If we double-click on that we see the picture. That happens to be a picture used by the alarm clock. It's really fun with Servant just to go exploring around and see the little pieces that the software you use everyday is made up that you're not usually aware of.*



## **Chapter 5: Servant Reference**

### **Contents**

- **Annotated List of Features**
- **Topic Index to Features**
- **Graphic Index to Features**

### **Annotated List of Features**

#### **1A. To see if a floppy disk is formatted with HFS or MFS...**

Insert a disk with the Servant program on it into a drive and double-click on the Servant icon. Close the disk window if it is open.

When Servant has been installed and the disk window is closed, the disk icon will show whether or not the disk has been initialized with HFS, the hierarchical file system. Floppy disks formatted with HFS will show the letters HFS embossed on the disk icon. Floppy disks formatted with MFS (Macintosh file system) have plain disk icons.

#### **1B. To quickly resize the desktop to full size and back...**

Click in the Zoom box in the upper-right corner of the window. The first click will resize any single window to the full size of the screen. A second click will resize the window to its size before the zoom.

To close the active window, click in the Close box in the upper-left corner of the window or chose Close from the File menu. Closing a directory window causes the window to zoom back into its disk or folder icon.

**1C. To undo the current selection (and find directory information)...**

Click anywhere in the information bar. Any selected icon or icons will become unselected. The information bar lies just below the window title and contains the item number, directory space in use, and disk space available.

You can also undo the current selection by holding down the Option key and clicking anywhere in the window other than on top of an icon.

The information bar shows the number of items in the window in the left corner, the amount of disk space in use by the directory items, expressed in K bytes, in the center, and the amount of disk space available for use, expressed in K bytes, in the right corner.

The ruler iconette provides information about the disk space in use by individual items.

**1D. To find the currently active System Folder...**

Look for the folder embossed with the big S symbol. Other System Folders will be embossed with a little Mac symbol. The little Mac designates an HFS System Folder that does not contain the currently active System.

Whenever a folder is selected, the Set Startup menu item from the Special menu becomes Set System Folder. This command can be used to switch the active System.

#### 1E. To start Servant...

Insert a disk with the Servant program on it into a drive and double-click on the Servant icon. This installs Servant in place of the Finder until you quit Servant or shut down your Macintosh.

You can tell that Servant has been installed if you see a row of small icons along the bottom of the directory window. Servant does not use scroll bars. Also, the cursor in Servant is a hand when it's located over the desktop window's white space and the pull-down menu items are different than the Finder's.

You can copy Servant to one or more of your disks by dragging the Servant application icon onto your new disk. You can do this from the Finder, or if Servant is already running, from Servant itself. Servant is not copy-protected.

Servant cannot run under the Switcher, MultiFinder, or itself.

#### 1F. To scroll along the desktop by pushing...

Hold down the mouse button while the cursor is a hand and drag. The cursor is a hand whenever it lies over a blank area within a window. When the cursor lies over an icon, it is an arrow.

All icons within the window will scroll as a single unit. If you

think of a desktop window as a magnifying glass, the hand works like your own hand pushing a piece of paper beneath the lens.

By giving the hand cursor a "push", the icons within a window will continue to scroll through the window in the direction of, and at a speed determined by, the push. A push begins by clicking the button and dragging the mouse, then letting up the button before the dragging has ended. Clicking the mouse will halt the automatic scrolling started by the hand push.

By holding down the Command key, the hand cursor performs "high gear" scrolling. The "high gear" effect makes scrolling more responsive to mouse movement (an equivalent movement scrolls a greater distance).

The "eye" and "arrows" iconettes also serve the purpose of positioning icons within the desktop window.

1G. To select (or drag or copy) an icon...

Click on top of the icon. The cursor is an arrow when it lies over an icon. Clicking will select the icon. Dragging will select and move the icon.

To select a contiguous group of icons, first make sure the cursor is not on top of any icon. Now, double-click and drag the mouse (the hand cursor turns into an arrow when the button is held down on the second click). This creates the selection rectangle with which to encompass the group of icons. Alternatively, you can press the Option key (this turns the hand

cursor into an arrow) and drag the mouse to create the selection rectangle.

To select a noncontiguous group of icons, hold down the Shift key (this prevents previous selections from becoming unselected) as you select each icon of the group.

The applications of selected icons can be opened by choosing Open from the File menu. Double-clicking on an icon will also open the application.

The resources of selected icons can be opened by choosing Resource Open from the File menu. Double-clicking on an icon with the Option key held down will also open the application's resources.

In Servant, an icon that is being dragged retains the outline shape of its icon. This contrasts with the Finder which always shows a square outline when dragging.

Servant displays a file copy in progress with icon animation. When copying is initiated—either by dragging or by using the Duplicate command from the File menu—the cursor becomes a question mark for a moment while Servant determines if the copy can be performed. If the copy cannot be performed, a dialog box occurs. Otherwise, the copy begins by producing the outline of the icon that is being created. As the source file is read into memory, the icon outline fills with grey. Finally, as the destination file is written to disk, the grey area fills with its final shape.

**1H. To resize the desktop...**

Hold down the mouse button in the Size box in the bottom-right corner of the window and drag the mouse. The outline of the window shows you what the size of the window will be when you let go of the button. Changing the size of a window only affects the viewing area, not the window's contents or the position of the contents.

**1J. To view all icons on the desktop...**

Hold down the button on the "eye" iconette. The active desktop window is shown in a "show page" view where all icons, in shrunken form if necessary, are visible. Also visible, if necessary, is a rectangular outline that indicates the portion of the desktop that represents the current default view of the window.

By holding down the button on the "eye" iconette and dragging the mouse into the rectangular outline, you can move the current default view of the window. The outline can be dragged to any position on the desktop to encompass a set of icons.

**1K. To scroll the view of icons on the desktop...**

Hold down the button with the cursor in the "arrows" iconette. The arrows iconette changes form to indicate the desktop position of icons in relation to the viewing window. When the iconette shows a single dot, all icons are within view of the current window. When the iconette points with one or more arrows, off-screen icons are present in the directions shown.

Holding down the button within the iconette will move the icons as a unit. The icons move in the direction that the cursor lies with respect to the center dot of the iconette. For instance, if the cursor is bottom-left of the center dot, the icons will move to the bottom-left.

Double-clicking on the arrows iconette will automatically center the icons within the viewing window. The iconette's arrows will indicate if icons remain outside the view of the centered window.

The "eye" iconette provides a method of viewing the entire desktop in shrunken form along with an outline of the current default window.

**1L. To view icons with name only...**

Click on the "abc" iconette. This is the default setting. The same feature is offered by choosing Name Only from the View menu.

**1M. To view icons with name and size...**

Click on the "ruler" iconette. The size of the file represented by each icon is displayed below the name. A file's size is a measure of the disk space in K (1024) bytes or, if under 10K, B (single) bytes necessary to store the file. The same feature is offered by choosing Size from the View menu.

**1N. To view icons with name and date...**

Click on the "calendar" iconette. The modification day, month, and year of the file represented by each icon is

displayed below the name. The same feature is offered by choosing Date from the View menu.

1P. To shrink or expand icons in scale...

Click on one of the six "zoom" iconettes. The iconette's image reflects the relative size of the desktop icons. The currently selected iconette is shown with a thick border.

The iconette fourth from the left is the default setting. The default size is 32-by-32 pixel icons, the same as the Finder's. The smaller size icons use fonts internal to Servant; they are not scaled-down from a larger point size.

The "zoom" feature can also be implemented by choosing Zoom Out (for shrunken icons) or Zoom In (for expanded icons) from the View menu.

2A. To switch among applications using a menu...

Choose the application that you want to become active from the Application menu. Each application that has been opened, yet is not currently active will be listed as an available menu item. The current active application will be a dimmed item.

The Application menu is appended as the rightmost menu title to all applications running under Servant. Servant, itself, contains the Application menu whenever a background application exists. As an alternative to switching using the Application menu, you can switch among applications by clicking in a window of the background application.

The Application menu is particularly useful when an application is open, yet has no visible window. For instance, you may have opened MacWrite, then closed the current MacWrite document. MacWrite remains open even though it has no visible document window. If you switch to another application, then want to return to MacWrite, selecting the MacWrite item from the Application menu will make it the active application (giving you the MacWrite menu bar).

In the simplest case, an inactive application window may be completely covered over by other windows. Choosing the application name from the Application menu will make the application window active and bring its window to the top.

See feature 2C for more information on switching using a window. See feature 8A for an example of a pulled-down Application menu.

**2B. To launch (and exit) one or more applications and their documents...**

Double-click on the application's icon. You can also open an application by selecting its icon, then choosing Open from the File menu.

Unlike the Finder, Servant does not close the directory window after launching an application. Instead, the directory window moves to the background and functions (in most applications) like an inactive window. Servant's directory window can be made the active window by clicking on it or by choosing Servant from the Application menu.

After an application has been launched, it controls the Macintosh the same as if the application had been started from the Finder. Servant lies dormant beneath the application. The only difference is that, under Servant, an Application menu for application switching is appended as the rightmost menu title of the application's menu bar (the menu title is represented by the generic application icon). Servant should not affect the way the application performs.

Servant allows one or more additional applications to be opened without first closing a previous application. The previous application remains in the background, usually shown as an inactive window. Like Servant, an inactive application can be made the active one by clicking on its window or by choosing the application name from the Application menu.

To launch additional applications, first bring the Servant window to the top by clicking on it or by selecting Servant from the Application menu. Once the Servant desktop is topmost and active, you can launch a new application by double-clicking on its icon.

You can also open more than one application by selecting the icons you want opened (drag with the Option key down to make a selection rectangle or hold the Shift key down to make noncontiguous selections), then choosing Open from the File menu. Servant will open each application; the last one to open remains active.

To quit an application, use whatever method the application provides to exit. In most applications, you will choose Quit from the application's File menu.

When you quit an application, the topmost Servant directory window becomes the active window and the application title is removed from the Application menu.

In the event that an application inexplicably ceases to function (the application hangs such that you cannot even quit), pressing the four-key combination Command-Shift-Option-Period will perform an emergency exit to the Servant desktop.

To close an application's document use whatever method the application provides to exit. In most applications, you will click on the application's close box or choose Close from the application's File menu.

When an application is running, the application (not Servant) controls the opening and closing of its documents. When you close a document without quitting its application, the running application retains control of the menu bar.

This can be confusing if the underlying window is the Servant desktop or a second application. The Servant desktop or the second application's window are inactive even though it may be the only window you see on the screen. Yet you can count on the menu bar to always reflect the currently running application.

Since Servant provides the ability to see more than one application on the screen, the concept of an active window

becomes even more important. An active window still has its window frame highlighted, reflects the currently running application, and, *if one exists*, is always the topmost window.

Under Servant, inactive windows from other applications or the desktop window itself remain visible even when the running application's active window is closed. To avoid confusion about which is the currently running application, remember that any active window, as well as the menu bar, belong to the running application. But in some circumstances, there will be no active window visible—only inactive windows from non-running applications or the Servant desktop.

Finally, when opening and closing documents within an application, the Servant desktop is not automatically updated. As a result, the document icons might not be appropriately dimmed or highlighted until Servant becomes the running application.

#### **2C. To switch among applications using a window...**

Click on the window of the application you wish to become the active application. The window becomes topmost and application is ready to use. The menu bar is always set by the current active application, though Servant adds the Application menu as the rightmost menu title.

As an alternative to clicking in an inactive window, you can switch among applications using the Application menu. The Application menu lists the open applications. The current active application is a dimmed menu item.

The Application menu is particularly useful when an application is open, yet has no visible window. If an inactive application window is closed or covered over by other windows, choosing the application name from the Application menu will make the application active and bring its window, if any is open, to the top.

See feature 2C for more information on switching using a window. See feature 8A for an example of a pulled-down Application menu.

**3A. To learn about Servant...**

Choose About Servant from the Apple menu. A window of information about Servant including author, version number, and release terms is displayed. Clicking the mouse button will close the window.

**3B. To learn quick tips about Servant features...**

Choose Servant Tips from the Apple menu. A window of select instructions and shortcuts is displayed. Clicking the mouse button will close the window.

**3C. To send a preformatted bug report to the program author...**

Choose Print Bug Report... from the Apple menu. A standard print dialog box will appear. Click on the Okay button to print the bug report form on your printer. Once printed, follow the instructions on the form for documenting bugs and ordering documentation. (You should explain how someone else can reproduce a bug you have found.)

**3D. To switch to Servant from another application...**

Choose Servant from the Apple menu. The Servant menu item is appended to the Apple menu only when Servant is not the currently active application. A Servant menu item is also available from the Application menu (8A).

**4A. To open a new empty folder or one filled with selected icons...**

Choose New Folder from the File menu. A folder with the name Empty Folder is created in the active window. The empty folder can be filled, renamed, and moved like any other folder. If the desktop has no active window, the New Folder item is dimmed.

In addition, Servant allows you to create a new folder with selected files automatically inserted inside the folder. To create a new folder that is automatically filled, first select the icons you want inserted, then hold down the Option key and choose New Folder from the File menu. Though the newly created folder is still given the name Empty Folder, the selected files have been put inside.

**4B. To open a new blank file...**

You will choose New File from the File menu, however this feature is not yet implemented. If a resource is the topmost window, the menu item is New Resource, also not yet implemented.

**4C. To open a selected icon...**

Choose Open from the File menu. Alternatively, an icon can be opened by double-clicking on it.

More than one icon can be opened at the same time by selected the icons and choosing Open. Servant will open the icons in alphabetical order (to the extent memory allows). Each application or document will be represented as an item in Application menu. The last opened icon will become the current application (in control of the menu bar).

If the icon represents an application, the application will be run. If the icon represents a document, the application that created the document will be run (a dialog box will indicate if such an application cannot be found on disk), then the document opened. If the icon represents a folder, the folder window will be opened.

**4D. To open the resources of a selected icon...**

Choose Resource Open from the File menu. Resources will be displayed as resource icons. Each resource type has a unique icon.

You can also open the resources of a icon by holding down the Option key and double-clicking on the icon.

The icon of a resource type can be selected and opened (double-clicking on the icon will also open it) to reveal resource file information. Servant's resource editing features are discussed in greater length in Chapter 4..

**4E. To print the contents of a selected document...**

Choose Print from the File menu. The application that created the selected document must be on the disk. Servant

opens the application and printing takes place in the same manner as it does from within the application. Most applications provide a dialog box before printing for the user to select printing options.

More than one document can be printed at the same time by selected the icons and choosing Print. The documents will be printed in alphabetical order.

**4F. To close an active window...**

Choose Close from the File menu. The active window closes and the immediately preceding window, if any, becomes active. As a window closes, its outline zooms back into the selected icon that created it.

**4G. To open an information window about an icon...**

Choose Get Info from the File menu. The window states whether the icon represents an application, an application's document, or a folder. The window also states the item's size, type, date of creation, date of last modification, and the folder location of the item, nested up to four folders deep. .

A check box allows the user to observe or change the Locked and Invisible status of applications and documents. A checked Locked box prevents a file from being put in the trash or having its name changed.

Two input boxes allow the user to specify the amount of memory to be allocated to the application. Most applications provide preset preferred and minimum memory requirements which can be changed to optimize the performance of a set of programs.

#### **4H. To duplicate a selected icon...**

Choose Duplicate from the File menu. A copy of the items represented by the selected icons is saved onto the same disk. The name of each duplicate is prefixed with "Copy of."

If a folder is duplicated, a copy is made of the folder and its contents, and all items are prefixed with "Copy of."

Servant displays a file copy in progress with icon animation. When duplication is initiated, the cursor becomes a question mark for a moment while Servant determines if the copy can be performed. If the copy cannot be performed, a dialog box occurs. Otherwise, the copy begins by producing the outline of the icon that is being created. As the source file is read into memory, the icon outline fills with grey. Finally, as the destination file is written to disk, the grey area fills with its final shape.

#### **4J. To set options for printing a disk or folder directory...**

Choose Page Setup from the File menu. A dialog box allows you to determine the page size, orientation, and special effects for directories that are printed with the File menu's Print Catalog option.

To set options for printing documents, you must use the Page Setup command offered within the document's application. Though documents can be printed from Servant's desktop windows, the Page Setup options work only with directories printed by the Print Catalog command..

4K. To print a disk or folder directory...

You will choose Print Catalog from the File menu, however this feature is not yet implemented. The contents of the active disk or folder window will be printed using Page Setup options in the same view as they appear in the window.

4L. To quit from Servant...

Choose Quit from the File menu. Quit exits Servant and causes the startup program to be installed.

All open applications must be quit in order to exit Servant. To quit an application, make the application active, then choose Quit from its File menu. If you attempt to quit Servant while an application is open, a dialog box will tell you to first quit the application.

When Quit is chosen, the Macintosh system installs the designated shell. By default, the shell is the program named Finder.

The command Restart from the Special menu quits Servant and causes the system to reboot (equivalent to turning the Macintosh off then on again). The command Shut Down from the Special menu quits Servant, ejects floppy disks and unmounts hard disks, and produces the Shut Down dialog box. (On the Mac II, Shut Down ejects floppies and turns off the computer.) The command Eject Disk from the Special menu causes the current disk to be ejected. All open applications must be quit in order to use these commands.

**5A. To undo certain desk accessory actions...**

Choose Undo from the Edit menu. The specific actions that can be undone depend on the desk accessory. Often, the command is limited to text-editing actions.

**5B. To cut a selection and make it the Clipboard's current contents...**

Choose Cut from the Edit menu. The command works on icon names, text from the Get Info window, and desk accessory text and pictures. However, the files represented by icons are not subject to the Cut command; they must be dragged to the Trash Can.

**5C. To copy a selection and make it the Clipboard's current contents...**

Choose Copy from the Edit menu. The command works on icon names, text from the Get Info window, and desk accessory text and pictures. However, the files represented by icons are not subject to the Copy command; they must be manipulated by dragging or File menu's Duplicate option.

**5D. To paste a copy of the Clipboard's current contents...**

Choose Paste from the Edit menu. A copy of the contents are placed at the insertion point; the original contents remain unchanged.

**5E. To clear a selection without affecting the Clipboard...**

Choose Clear from the Edit menu. The command works the same as the Cut command except the selection is not placed onto the Clipboard.

5F. To select all the icons in the active window...

Choose **Select All** from the **Edit** menu. If no window is open, all desktop icons are selected.

5G. To display the Clipboard window and its contents...

Choose **Show Clipboard** from the **Edit** menu. The Clipboard contains the most recent selection that was used in a **Cut** or **Copy** command. The Macintosh system creates and maintains a clipboard file (represented on the desktop by a generic system icon) to handle clipboard activity within and among applications.

6A. To shrink icons in scale...

Choose **Zoom Out** from the **View** menu. The desktop is scaled so that icons are displayed in their next smallest size. Servant offers six views. The command has the same effect as clicking on the "zoom" iconette to the left of the currently selected one.

6B. To expand icons in scale...

Choose **Zoom In** from the **View** menu. The desktop is scaled so that icons are displayed in their next largest size. Servant offers six views. The command has the same effect as clicking on the "zoom" iconette to the right of the currently selected one.

6C. To view icons with name only...

Choose **Name Only** from the **View** menu. This is the default setting when Servant is started. The same feature is offered by clicking on the "abc" iconette.

**6D. To view icons with name and size...**

Choose Date from the View menu. The size of the file represented by each icon is displayed below the name. A file's size is a measure of the disk space in K (1024) bytes necessary to store the file. The same feature is offered by clicking on the "ruler" iconette.

**6E. To view icons with name and date...**

Choose Date from the View menu. The creation day, month, and year of the file represented by each icon is displayed below the name. The same feature is offered by clicking on the "calendar" iconette.

**7A. To erase from disk the contents of the Trash Can...**

Choose Empty Trash from the Special menu. The files in the Trash Can are erased from the disk and their disk space is made available.

The contents of the Trash Can can be viewed in a window by clicking on its icon. When Empty Trash is chosen, the icons will disappear. Also, the disk information line of the active window will be updated.

Servant will empty the Trash Can automatically whenever a new application is launched or the space is needed.

**7B. To eject a disk from a disk drive...**

Choose Eject Disk from the Special menu. The command ejects the selected disk or disks. If no disk is selected, the

command will eject the first disk found among the following: the disk that contains a selected item, the startup disk, or another inserted disk. Alternatively, a nonstartup disk can be ejected by dragging its icon to the Trash Can.

7C. To initialize a selected disk, thus erasing all previous contents...

Choose Erase Disk from the Special menu. A dialog box will appear asking if you really want to erase the selected disk and, if so, should it be initialized as one-sided or two-sided.

The command will not work on the current startup disk. If you have only one disk drive, insert a startup disk, eject the startup disk, then insert the disk you want erased.

Pressing the one-sided button will initialize a disk with MFS (Macintosh file system). To initialize a one-sided disk with HFS (hierarchical file system) hold down the Option key as you press the one-sided button and keep the Option key down until the initialization is complete. Pressing the two-sided button will always initialize a disk with HFS.

7D. To make a selected application launch immediately upon startup (and designate the active System Folder)...

Choose Set StartUp from the Special menu. This allows you to bypass the Finder or Servant desktop when starting the Macintosh.

To make Servant or the Finder the startup application, select the Servant or Finder icon from the directory window, and choose Set StartUp.

Whenever a folder is selected, the Set Startup menu item from the Special menu becomes Set System Folder. This command can be used to switch the active System. The currently active System Folder is embossed with the big S symbol. Other System Folders are embossed with a little Mac symbol. The little Mac designates an HFS System Folder that does not contain the currently active System.

**7E. To make a selected MacPaint or Thunderscan document become the background for the desktop...**

Choose Set Background from the Special menu. The picture represented by the selected icon will automatically be installed as the background screen. You can use the Control Panel desk accessory to return the background to one of the standard Macintosh patterns.

**7F. To rearrange the icons in a particular order...**

You will choose Rearrange from the Special menu. A dialog box will ask you to choose an order for arranging the icons. This feature is not yet implemented.

**7G. To create a custom icon or special folder icon...**

Select an icon (even a disk icon), then choose Custom Icon from the Special menu. A dialog box will appear containing the selected icon enlarged in fat bits.

Within the icon image, you can use the pencil cursor to manipulate each dot of the 32-by-32 pixel grid. The lower-right corner of the dialog box shows the icon in its actual size.

Clicking on the Okay button will return to the desktop with the custom icon installed. The custom icon will be used instead of the previous one until you change it again.

Clicking on the Cancel button will return to the desktop without the custom icon installed. The icon that was previously used is retained.

Clicking on the Revert button will redraw the icon in the dialog box the same as it was before your current changes. This does not return you to the desktop, but reverts the fat bits image to the last icon that was used.

Clicking on the Revert button while holding down the Option key will redraw the icon in the dialog box the same as it was originally created by the program. This does not return you to the desktop, but reverts the fat bits image to the original program icon before any customization.

In addition to self-customized icons, Servant can create special folder icons that contain a shrunken image (of the image itself) of another icon. To create a custom folder icon takes four steps:

First, select the icon you want to appear shrunken on the folder icon. Second, choose Copy from the Edit menu. This puts the text of the icon onto the Clipboard. Third, select the folder you want the shrunken image to appear on. Finally, choose Custom Icon from the Special menu while holding down the Option key. (If you hold down the Command key instead of the

Option key, the selected icon will become the folder icon rather than shrink onto the folder image.)

The Custom Icon dialog box appears with the shrunken icon inserted on the folder. At this point, you can click in the Okay box to install the folder as you see it or further customize the icon with the pencil.

7H. To install the options...

Choose Options... from the Special menu. A dialog box with five check boxes allows you to configure Servant. After clicking the OK button, the checked configuration will remain in effect for all Servant sessions, including the current one, until the Options menu item is reselected and the options reconfigured.

The Switcher On box, when checked, enables the switching function between applications. When unchecked, switching is disabled, thus only one application can be opened at a time and the Application menu is not appended to the menu bar. By default, the Switcher On box is checked.

The Show Invisibles box, when checked, will result in the icons of invisible files (for example, the desktop file) to be displayed. When unchecked, these icons remain invisible. By default, the Show Invisibles box is unchecked.

The Speech On box, when checked, causes the Macintosh to speak the names of files after they're selected and menu items after they're chosen. To use the speech option, the MacinTalk file must be in the system folder or on the desktop. When the

Speech On box is unchecked or the MacinTalk file is not available, speech does not occur. By default, the Speech On box is unchecked.

The Save Screens box, when checked, stores the screens contents in RAM memory so that switching between applications can be performed faster and more smoothly. When unchecked, screens will not be stored, slowing switching time but saving 22K of RAM memory space (even more on large screens and up to 300K on the Mac II). The option has effect only when the Switcher On box is checked. By default, the Save Screens box is checked.

The Auto-Center Dialogs box, when checked, centers dialog boxes for applications run on large screen displays. Servant dialogs are always auto-centered.

7J. To display memory allocation information about an application...

Choose Show Memory Info from the Special menu. The graphic display shows the portion of memory currently being used by an application (the dark gray region) and the additional memory available to the application (the light gray region). The number to the right of the bar graph region shows the total memory allocated to an application.

The Get Info menu item from Servant's File menu offers the user the option of allocating preferred and minimum memory to an application

**7K. To reboot the Macintosh...**

Choose **Restart** from the **Special** menu. Rebooting is equivalent to turning the Macintosh off, then on again. The default shell is reinstalled.

All open applications must be quit in order to use **Restart**. To quit an application, make the application active, then choose **Quit** from its **File** menu.

To exit **Servant** and return to the **Finder** without rebooting the Macintosh, choose **Quit** from the **File** menu. **Quit** exits **Servant** and causes the System's startup program to be installed.

**7L. To turn off the Macintosh...**

Choose **Shut Down** from the **Special** menu. The **Shut Down** dialog box appears stating that the Macintosh can now be safely turned off. A **Restart** button allows you the option of rebooting instead of turning off the Macintosh. On the **Mac II**, **Shut Down** ejects floppies and turns off the computer

All open applications must be quit in order to use **Shut Down**. To quit an application, make the application active, then choose **Quit** from its **File** menu.

To install a new startup disk, you can use the **Shut Down** command. However, an alternative method (one that's easier on the power supply) is to hold down the **Option** key and double-click on the disk icon you want to be the startup disk. (If your disks use different **System** and **Folder** versions, use the **Shut Down** command.)

**8A. To make a background application the active application...**

**Pull down the Application menu and choose from among the application items. Each application that has been opened, yet is not currently active will be listed as a menu item. The Application menu is appended as the rightmost menu title to all applications running under Servant. Servant, itself, contains the Application menu whenever a background application exists.**

**You can also make a background application the active application by clicking in a window of the background application.**

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