Specular's Infini-D is an integrated modeling, shading, animating and rendering environment, whose main competitors are Ray Dream Designer ($200 US) and Strata's StudioPro ($850 US). (See MacSense 2/96). Infini-D is well constructed, operates smoothly and offers a good cross section of tools.

Objects in Infini-D are spline-based (polygonal surface mesh objects are not supported), with a central spine and four rails that define the size and shape of the cross section at each point along an object's length. The spine and rails can be manipulated to animate an object over time—imagine bouncing balls and dancing bottles. Objects are designed in the modeling workshop, where the opacity of imported templates can be adjusted, making tracing easier. Objects' ranges of motion can be constrained in relation to each other, allowing the construction of complex working models. (Infini-D does not offer inverse kinematics, however.)

Infini-D's surface painting tools are commendable. Choose from useful procedural surfaces (tile, noise, marble, wood, and fractal) and effects (wave, bump, and corrosion), or layer PICT and QuickTime files onto surfaces. Texture maps can be applied as decals, a technique that allows the surface map to stretch and bend along with the object during animation. While applying texture maps is very flexible, it can be difficult to achieve precise placement using Infini-D's miniature preview in the texture workshop.

Infini-D's animation sequencer has become an industry archetype. Each object is represented by a timeline with markers that indicate actions. By double-clicking an object's name, individual timelines appear to allow control of the object's rotation, scale and location. This split control makes it possible to change an object's rotational velocity vectors without affecting the rate at which it travels, for example.

Infini-D comes with a rudimentary set of animation extensions: smooth velocity, align motion to direction, auto-banking, and explode (which scatters the components of a hierarchically built object, but does not break it into facets). Rendering options are limited to Gouraud, Phong and ray tracing.

A major stumbling block in learning to use Infini-D is the fact that multiple objects cannot be selected simultaneously, and objects cannot be grouped. In order to move, rotate or scale objects as a group, you must link the objects together in a hierarchy. Then, when you manipulate the parent object, all children will follow. You still cannot duplicate, delete, or apply a surface to more than one object at a time without first linking the objects into a hierarchy. In the same vein, there is no select all command. Furthermore, there is no object alignment feature—all alignment must be done visually, or by entering coordinates in the Object palette.

nfini-D was not designed to create accurate models of real objects. Although the modeling workshop's status bar displays the x and y position of your cursor in inches, these numbers are nearly useless because they display only tenths of an inch, and are not updated as you drag points. You cannot edit points numerically, and the rulers displayed in the window are no help—no tic marks are displayed to indicate the cursor location. To align points to one another or to a specific coordinate, you must place guides—a practice that quickly becomes tedious. Furthermore, you can't cause the window to scroll by dragging a point out of the work area (this is a real annoyance when working at high magnification). Finally, while objects on the scene can be nudged with the arrow keys, no nudge feature is available in the modeling workshop.

The lack of looped animations is a glaring omission in Infini-D's capabilities. This feature of other animation programs allows you to define repeating or cyclical animations, such as the rotating blade of an airplane. These looped events are then automatically performed throughout your movie. In Infini-D, you must manually copy and place the object's event markers over the entire length of the movie to achieve the same effect.

We also found a rash of minor annoyances in Infini-D. When rendering a QuickTime movie using ray tracing, Infini-D sounds a system beep after each frame is finished. Infini-D can't play QuickTime movies—you must use the utility Movie Player. Although the Shift key works to constrain motion to 45-degree angles in the modeling workshop, motion and rotation cannot be constrained in Infini-D's scene window. This means you must enter coordinates manually to achieve axis-constrained movement. You can't drag and drop surfaces onto objects.

hile Infini-D looks sophisticated and operates smoothly, the more you use it, the more it feels like cramming your hand into a three-fingered glove. Not being able to select multiple objects is hobbling, and forcing users to define object hierarchies in lieu of simply grouping

objects is irksome. This startling quirk in operation forced us to discard working habits and adapt to suit Infini-D. We don't mind learning new tricks, but Infini-D's mode of operation offers no benefits in return.

Infini-D is the type of tool best used when you are starting with roughly conceived ideas. It is intuitive and easy to use, and you'll like what you get if you're in an experimental mood. However, if you are after precise results, Infini-D can be frustrating because of its lack of accurate rulers in the modeling window, omission of an object alignment feature in the scene window, and inability to constrain object motion by using the shift key.

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leiades Research, $300 US.   Requirements:
serial port, microphone jack, speaker jack, 1MB
RAM, 2MB hard drive space (10MB recommended),
System 7 or higher, FaxSTF 3.0 or higher for faxback.
Contact Pleiades Research at (213) 259-1727.

It wasn't long ago when the most economical way of auto-
matically taking phone messages was with an answering
machine that used little cassette tapes. Millions of these
machines are still used today. Of course, most big com-
panies and corporations have sophisticated voice mail
systems costing thousands of dollars, their price putting them
out of reach for most individuals.

Now Macintosh users can copy the big boys. Digital Storefront from Pleiades Research is an automated voice mail system for the Macintosh that's packed with impressive features usually associated with voice mail systems costing thousands.

Digital Storefront easily attaches to the Macintosh. Just plug the serial, speaker and

microphone cables into their respective ports, plug a telephone line into the back of the Digital Storefront module, install the software and away you go. Installation is very straight forward, taking only five minutes.

Digital Storefront is overflowing with neat features. Because of its exclusive dedication to voice mail, the Digital Storefront module produces superb audio quality. This is a clear advantage over data/fax/voice modems that produce less than stellar sound.

Digital Storefront also supports an unlimited number of mailboxes. This means it easily handles the voice mail needs of small businesses, households and large corporations. Besides unlimited mailboxes, it supports user-selectable incoming message lengths. Incoming messages can be as short or as long as the user feels is necessary. Outgoing messages can be a maximum of eight minutes.

The Call Attendant feature is quite convenient. If, during the playing of an announcement message, the user wants to speak to a live human, they simply push 0#. Digital Storefront will then display a message on the user's screen asking them to pick up the phone. If the user declines, Digital Storefront tells the caller no one is available, and offers an opportunity to leave a message.

Other neat features include pager support. If a mailbox owner has a pager, they can instruct Digital Storefront to forward messages to the pager number. Remote Message Notification, another highly useful feature, calls mailbox owners at predesignated phone numbers upon receiving a predetermined number of messages. The messages are then played back to the owner, or handled in a number of other ways, all at the owner's discretion. This means a mailbox owner will never be late receiving important communiques.

Along these same lines, the Call Forwarding feature allows for the transfer of incoming calls to remote locations. This is especially nice if you're expecting an important phone call, but won't be at home or the office to receive it.

The Faxback feature is also cool. Using FaxSTF, included with Digital Storefront, users can configure Digital Storefront to automatically fax documents to callers. The caller leaves the phone number they want the information faxed to and Digital Storefront takes care of the rest. Digital Storefront faxes any document that's printable with the Macintosh.

Digital Storefront comes with a bevy of announcement messages installed in its software, but allows users to record custom announcement messages as well. Unfortunately, the recording feature did not work well on our test Macintosh 6100/66. The microphone supplied with Digital Storefront did not record at either an acceptable volume or audio quality. Pleiades Research stated the microphones shipped with Digital Storefront do not work properly with certain Macs, ours being one of them. This is due to a design change in the Mac's microphone jack by Apple. The fix, however, was quite simple and worked great.

By plugging a PlainTalk mike into the Power Mac's microphone jack, and then recording the desired announcement messages, we were able to obtain crystal-clear, high quality audio, and at a perfect volume level. Once the recording session was complete, we unplugged the PlainTalk mike and reinstalled the Digital Storefront cable. While perhaps not the most convenient fix, it does the job nicely.

Creating mailbox hierarchy trees with Digital Storefront is extremely simple. By clicking the "Add" button in the Digital Storefront Database, users create new mailboxes. From there, custom announcement messages may be created and a password set. That's all there is to

it. Also, an established mailbox hierarchy can be edited as needs arise.

Overall, the Digital Storefront system is exceptional. It provides a wealth of great features, each being very easy to configure and use. Additionally, the system works seamlessly with other Mac software, including the system software.   Digital Storefront will run in the background, only disturbing the user when a caller asks that someone pickup the line. Moreover, Digital Storefront never seems to freeze, hang or otherwise fail to operate properly. This is quite noteworthy considering all the different tasks it is capable of performing.

The user's manual   brims with information regarding the features found in Digital Storefront. Descriptions are provided in a step-by-step fashion and they're easy to understand. Technical support from Pleiades Research is high in quality and easy to obtain. Best of all, it's free.

ith our lives as hectic as they often are, it's almost a necessity to have some type of message-taking device hooked to the telephone. We all receive important calls requiring our quick response. Digital Storefront elevates message-taking to a new level. Not only does it do a fine job taking messages, but it can process an unlimited number of telephone communications in a variety of ways. It's literally like having a secretary screening and handling your incoming calls.   Additionally, Digital Storefront can make a small business sound much larger and more impressive than it really is. As we all know, if such an exaggeration wins business, then it's worth it. And, let's not forget, Digital Storefront has a fantastic price, especially considering all it can do.

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rchard Software, $79 US. (Special introductory $49.94 for a limited time). Requirements: any Mac from a Mac Plus to the latest PowerPC line. Contact Orchard Software Inc. at (617) 876-4608 or 02670.1653@compuserve.com.

When I first heard about CPU Doubler, I was excited.
The thought of my Power Mac 8500 suddenly running at
240 MHz instead of 120 MHz was tantalizing. Could it be possible?
After all, RAM Doubler doubles my RAM, for all practical purposes.

Time for a reality check. Orchard Software's innovative new utility will make your Mac faster, but won't double its overall CPU speed.

CPU Doubler is a "performance enhancement utility" that makes your Mac's processor more efficient. For the technically-minded, a brief explanation follows. Those who don't care why CPU Doubler works can skip the next three paragraphs.

According to Orchard Software, a computer wastes time two ways. It may sit idle, wasting valuable cycles that are not used to execute application code.   Or it may spend too much time swapping processes in and out. The overhead associated with swapping causes the computer processor to spend valuable cycles setting up registers and memory for each process swapped in, and cleaning up registers and memory for each process swapped out.

CPU Doubler speeds things up by properly managing your Mac's throughput. Throughout is the time the processor spends executing the process instructions. A process is any software that performs some function on your computer, independent of the system. All applications, such as word processors and spreadsheets, are processes. Some extensions, such as file sharing, are also processes,   although they work invisibly.

The Mac operating system has a basic scheduling algorithm that gives each processes equal time. Each software application can increase or decrease the amount of processor time it gets. However, there is no sophisticated load management scheduling for optimal throughout. CPU Doubler provides optimal throughout with a proprietary scheduling algorithm. Basically, CPU Doubler gives the bulk of the computer's processing time to the program you are working on (the foreground application).

Enough technical stuff. CPU Doubler is a control panel, not a system extension, so it should be less crash-prone. I tested CPU Doubler on a Power Mac 8500 with 48MB of RAM, System 7.5.3, 23 control panels and 89 extensions loaded without the slightest conflict. (Also, the control panel requires just 128K of memory and has an on/off switch so you do not have to reboot to disable CPU Doubler.)

And just what kind of speed boost does it offer? I ran CPU Doubler through several tests. Here is what I found.

With Netscape and Stickies running in the background, I opened a large ReadySetGo! GX document. The document was nine pages with a lot of graphics.   With CPU Doubler off, it took 10 seconds for the document to load. With CPU Doubler on, it took six.

With Photoshop and Stickies running in the background, I ran Disinfectant. The virus checker had 2,990 files to examine on a 2 gigabyte hard drive. With CPU Doubler off, the examination took 2 minutes, 10 seconds.   With CPU Doubler on, it took one minute, 50 seconds.

Similar results were found when I logged onto the Internet or used my word processor, or opened files in Photoshop with at least two other applications running in the background. Time was always saved in the foreground application, though never by 50 percent.

Orchard Software says, "because CPU Doubler speeds up the Macintosh by more efficiently managing multiple processes, using general purpose benchmark software that tests the speed and performance of the processor cannot be used to test the performance improvement that is gained." I took them at their word and didn't use MacBench or other

benchmarking software. Instead, I did the tests the old-fashioned way: I used a stopwatch.

So CPU Doubler does speed things up, although the amount of time seems to vary from application to application.   Additionally, there are many other things to like about this utility.

It is extremely customizable.   You can select speed options ranging from "Best Performance" (giving maximum processing time to the foreground application) to "Good Performance" (giving a little extra speed to the foreground application while only slightly slowing background applications). You can also choose a "Custom Performance" option to manually determine which applications get what percentage of your Mac's processing time.

A really sweet feature is CPU Doubler's "Special Settings", where you can select which processes are not affected by the utility. For example, my fax machine is the Global Village Fax Center. I want all faxes to come through quickly and cleanly, so I tell CPU Doubler to leave the fax center out of its throughput management.

There are some downsides to CPU Doubler. As mentioned, despite the name, do not expect it to actually double your CPU's overall speed. It can also cause problems on networked systems by causing file sharing software to be swapped out for long periods.

CPU Doubler also slows background printing to a crawl. Although you can exclude the Print Monitor from the utility's throughout management, I was unable to find a way to exclude QuickDraw GX printing. (With GX, you no longer need Print Monitor.)

verall, CPU Doubler is a welcome utility to the Macintosh market, though it is not for everyone. Orchard Software admits that anyone using few extensions and running only one application at a time will see little benefit from CPU Doubler. But for those who run multiple applications and who want to squeeze every ounce of speed out of non-networked Macs, this utility is worth a look. Though not as revolutionary as RAM Doubler, it is stable, well designed and reasonably priced. Version 1.0 is a solid beginning. Further refinement could place CPU Doubler on the "must-have" list.

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