Nomadic computing

Sun's modern space saver stays put

So far, there have been two kinds of workstations: the kind that sits on your desk and weighs a ton, and the kind that is custom-made to travel. On March 15, Sun Microsystems Computer Corp. announced a new hybrid category: a "nomadic" computer that sits on your desk and doesn't weigh a ton.

Nor does it take up as much space — which is really the main point, according to Greg Munster, SMCC's product-line manager for nomadic-systems marketing. "It's not a SPARC portable or a SPARC-pad or a SPARC-thing," Munster said. "We don't see people taking this to meetings. It's not a casual mobile machine." The Voyager takes up 65 percent less room, Sun claims, than other SPARCstations. The thin, flat-panel display was created expressly for those who need to save on space, such as financial-services workers with half a dozen tubes on their desks, other scrunched American office workers, and the even more overcrowded Japanese office workers. Despite the footloose product name, Sun considers the Voyager primarily a "compact workstation" rather than a competitor to portable devices such as the RDI PowerLite (see "RDI's Mac-like SPARC portable," December 1993) and the Tadpole (see "Tadpole's 7-pound wonder, battery included," March 1994). As Sun describes it, the 12-pound Voyager is intended to spend most of its time on a desktop.

The age of memory cards

Only 5½ inches thick, 15 inches wide, and 15 inches tall, the Voyager consists of a unit that doubles as a display-panel holder, a compact keyboard (standard Type 3 keyboard is optional), and a mechanical mouse (because the trackball version of the mouse takes up less space than the traditional Sun optical mouse). Internal RAM starts at 16 megabytes and goes up to 80; the internal disk drive is a 2½-inch, 340-megabyte unit. Additional RAM and peripherals such as modems and even spare disk drives can be added in the form of PCMCIA cards — credit-card-size removable devices that, along with the flat-panel display, helps the Voyager trim its SPARCstation bulk. Two such slots on the Voyager can handle two Type 1 or Type 2, or one Type 3 PCMCIA device. Sun is offering memory cards in capacities of 16 to 32 megabytes, manufactured by Mitsubishi in Japan, each using 16-megabit chips.

An infrared serial interface on the front of the system allows communication with "palmtop" computers, such as those made by HP. On the rear of the machine, the standard Sun I/O interfaces all appear: twisted pair Ethernet, audio, ISDN, SCSI, an external monitor, and parallel and serial ports.

The active-matrix flat-panel display comes in 12-inch color at 1024 by 768 pixels, or in 14-inch monochrome, at

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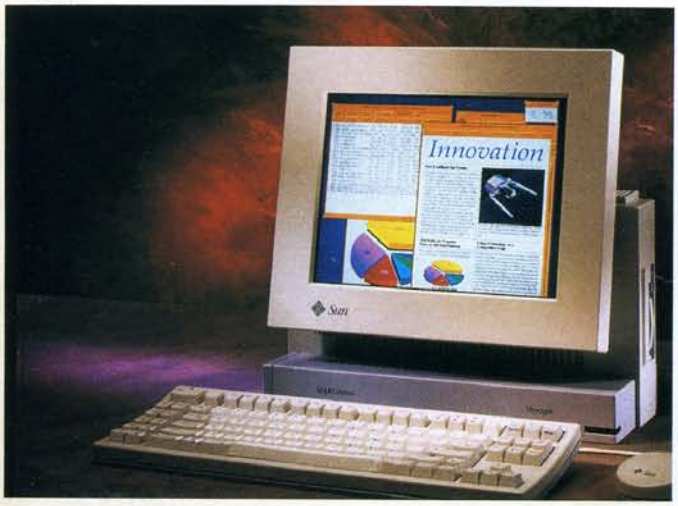

The SPARCstation Voyager is not meant to be portable, SMCC said, although it weighs just 12 pounds. Its purpose is to perform efficiently while conserving desk space.

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Sun's standard resolution of 1152 by 900 pixels. Color is driven by a TurboGX 8-bit graphics accelerator.

SPARCstations 5 and 20

The SPARCstation Voyager gets its fuel from the 60-MHz microSPARC II, which Munster said delivers about twice the performance of the SPARCstation LX, Sun's low-end graphics workstation. He puts the Voyager's performance in the 40 SPECmark range for both integer and floating point, about equal to the SPARCstation 10/41.

In fact, the SPARCstation 10 line is soon to be phased out and replaced by the SPARCstation 20, code-named Kodiak. Similarly, the lunch-box form-factor LX will be replaced by the new pizza-box-style, one-CPU SPARCstation 5 line, which will feature TurboGX graphics capabilities. It can be upgraded (with a motherboard swap) to a SPARCstation 20 and will run either a 70- or an 85-MHz microSPARC II.

Software capabilities

The software in the Voyager is tailored for the peculiarities of the semi-permanent workstation. Along with remote networking (using PPP) and disconnected/remote Mailtool capability, the Voyager features suspend/resume, which is much faster than restarting the system. Sun says this feature will prove popular in Japan, where computer users prefer to shut down these consumers of expensive electricity each night. Fax software is available with an optional PCMCIA card modem, like Tadpole's new SPARCbook 3's PCMCIA modem-in-a-card; it sells for overseas customers.

Although they look a little thin and delicate, Sun declares the Voyager actually rugged and sturdy. A universal A/C power supply is available, as well as an optional rechargeable battery (about $300) which weighs around a pound and gives two hours of use, Sun said. A software tool shows how much battery power is left.

The Voyager runs Solaris 2 only, due to the added demands of nomadism, said Sun. The newer operating system is required to accomodate the Voyager's advanced agenda. It comes with a half-sized, 98-megabyte version of Solaris 2.3, which includes advanced features like Jumpstart for system administrators.

Ergonomically correct

Energy conservation and health care are everywhere in the news today— and Sun is no exception. The active-matrix LCD, though expensive, offers many advantages, such as low power consumption — in the 25- to 50-watt range, compared to a few hundred watts for a typical desktop system. Other safety/comfort features are reduced heat, which eliminates the need for a system fan, and a flicker-free display to reduce eye fatigue while creating no hazardous emissions computer users worry about.

The Voyager comes in three models. The 12-inch color LCD model will be available in the $15,000 price range. The monochrome 14-inch model will be priced around $10,000. Also available for people who want the power but are sensitive to price is a 17-inch color CRT monitor configuration that will cost around $9,000.

Turn to page 78 for an exclusive hands-on **First impression** tour of the SPARCstation Voyager by the Advanced Systems Test Center.

— Shalini Chatterjee

Systems modeling

Design environment for trial runs

Designing power-plant control systems may not be your cup of tea, but if you were to undertake such a bold venture, you might want to have MatriXx 4.0 in your kit bag of tricks. MatriXx 4.0 is the latest release of Integrated Systems' design environment for control and embedded systems. It is a software tool chest that models how systems will behave under varying inputs and environmental conditions.

Systems include three basic components: the process being controlled, the controller, and the sensor. For example, the energy output of a fission power plant would be the process under control (hopefully), the fuel-rod assembly would be the controller, and temperature sensors would monitor the process. MatriXx would step in and model how these components work together to achieve an effective system design. Integrated Systems is banking (literally) on the fact that fiddling with changes in a system's design is cheaper to simulate in software than implement with physical prototypes.

New in version 4.0 is AutoDoc, a tool that automatically generates documentation for MatriXx-modeled systems. Also new is Xmath, a mathematical-analysis package that previously existed outside the MatriXx fold but was brought in to interact more closely with three other modules that round out MatriXx's tool set: SystemBuild, AutoCode, and AC-100.

SystemBuild is a modeling and simulation tool. Its graphical environment and over 70 predefined building blocks model complex interactions between a system's different components. Designers can bring in additional, custom

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