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OpenNT

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TurnYour NT machine into a fully compliant UNIX system

Get the most out of your UNIX investment by extending UNIX capabilities to your Windows NT environment. OpenNT, from Softway Systems, creates an enhanced POSIX/UNIX subsystem within your NT system. The product includes applications and utilities that comply with UNIX, X/Open Portability Guide (XPG), and POSIX.2 standards. These applications and utilities operate within the POSIX/UNIX subsystem and interact with their NT counterparts. For example, on UNIX systems, Berkeley Software Distribution (BSD) sockets provide network support. OpenNT provides an interface between BSD sockets and NT's Winsock library. If you compile and operate a UNIX program written for BSD sockets (such as a gopher search utility) on an OpenNT-enabled system, the program will make the appropriate socket call, and OpenNT will transfer the call to the Winsock system.

Adhering to standards is important in the UNIX world, and OpenNT conforms to most UNIX standards, including the POSIX.1, POSIX.2, and ANSI C interfaces. At the application layer, OpenNT's libraries support all POSIX and UNIX APIs.

The Core

OpenNT consists of eight core components: the UNIX shells and utilities, X11 runtime clients and applications, X11 display server, Open Software Foundation (OSF)/Motif window manager, remote logon Telnet service, UNIX software development tools, X11

software development tools, and OSF/Motif software development tools. Available OpenNT packages contain combinations of these core components.

Only the UNIX shells and utilities component is necessary to run OpenNT. This component includes the OpenNT system files, networking support for UNIX-style sockets, interprocess communications (IPC) message queues and semaphores, shared memory, memory-mapped files, and components that facilitate OpenNT's integration with NT subsystems, such as file systems, security model systems, and services. OpenNT's UNIX shells and utilities component also includes more than 100 character-based UNIX utilities, such as awk, sed, and perl. UNIX aficionados will appreciate this component's full versions of C shell and Korn shell, two popular UNIX shells that support command aliasing, job control, and history. And UNIX enthusiasts will enjoy editing files using OpenNT's full version of vi.

The optional X11 display server component includes an X11R6-compliant X server, which lets you run any X application on your NT machine. If you work in a multiplatform UNIX environment and your UNIX hosts have X administration utilities, OpenNT's X11 display server lets you run those utilities on your NT machine to remotely perform administrative functions. **Screen 1** shows the X11 Server Control Panel, which lets you configure a connection to a remote X client program.

If you install OpenNT's X11 runtime clients and applications component, you can run your NT server's applications on the X servers on your network. The X11 runtime component contains more than 50 applications, including a port of xterm, which you can use to establish a shell session on your NT server.

OpenNT's software development tools help you build applications on your NT machine that are compatible with their UNIX counterparts. The tools supplement Microsoft's Visual C++ 4.0, which you must install on your system before you can use OpenNT for software development. The UNIX software development tools, which include utilities such as yacc, lex, make, and cc, let you compile generic text-interface utilities such as the trn USENET newsreader popular on many UNIX systems. The X11 development tools include additional utilities, such as xmkmf and imake, which supplement the UNIX utilities that produce X-related applications. The OSF/Motif development tools include utilities that help you build

Motif applications. Each development system comes with a set of header files and function libraries you can link to your application.

The Installation

OpenNT's installation is simple. I installed OpenNT on my NT server, a Digital Prioris HX-590 with 96MB of RAM. First, I installed the base OpenNT product, which consists of the software's runtime components. I ran the Setup program in the X86 directory, and the installation proceeded smoothly. I had to select an installation location for my files and provide activation keys so that the program would install the proper components. When the installation was complete, I returned to Windows Explorer. I had to log off and then back on before I could use the software, but I didn't have to reboot my computer. After installing OpenNT's runtime components, I reran the Setup program to install the software development kit. Again, I had to answer questions regarding where to install certain files and provide a license key.

When I finished both steps in the installation process, I tested the software. Using OpenNT was a joy. I launched a Korn shell prompt through Explorer, and I ran shell scripts from my UNIX system after modifying them slightly. I ran multiple jobs simultaneously, in both the foreground and background. You can start background jobs by adding an ampersand (&) to the command line (e.g., `runajob &`). Using the `fg` and `bg` directives, I moved jobs from the background to the foreground, and vice versa. I used the `jobs` command to get a list of running jobs. The pipes are fully functional, and the shell lets you redirect both `stdout` and `stderr`.

The Telnetd

One of OpenNT's best features is its Telnetd, or remote logon Telnet, capability. Telnetd is a daemon (the UNIX equivalent of an NT service) that lets users connect to the NT server as if they were logging on to a multiuser computer system, such as a UNIX host. After they log on, users can run programs on the NT host, and the output goes to the users' local screens. (For reviews of other Telnetd products, see John Enck, "InterAccess Telnetd Server," May 1997, and Tim Daniels, "Ataman Provides Telnet and Rlogin Service for Windows NT," October 1995.)

Before I could connect through Telnetd, I had to install the service on my NT server. Telnetd does not install during the OpenNT installation process. Installing Telnetd takes about 30 seconds. First, you have to log on to the NT system on which you're running OpenNT. Then, you launch the OpenNT Korn shell. When the shell prompt appears, you enter two commands to start the service. After you execute these commands, you will see a Telnetd service running in the Services applet on the NT Control Panel. At that point, you can connect from remote systems.

I connected to my NT host by telnetting in from my Windows 95 client using Hilgraeve's HyperACCESS. When you connect, you log on to OpenNT with your usual domain logon and password. (OpenNT integrates seamlessly with NT's security database to make logon easy. You don't need to maintain a special user file or passwords.) When you log on, the software automatically opens a Korn shell prompt. **Screen 2** shows a directory listing I retrieved using the ls command in a UNIX shell on my Win95 client.

The only problem with OpenNT's Telnetd program is that it runs only Win32 console programs. To run a legacy application, you must either recompile the application to run under Win32 or somehow update the software. The UNIX shells let you try to execute non-Win32 applications, but you will not succeed. I tried to run a binary file compiled with CA-Clipper (a database program from Computer Associates International). After spitting error messages at me for 2 minutes while OpenNT attempted to process the CA-Clipper binary, my NT system's kernel aborted and locked up the system.

The Question

As an old-school UNIX devotee who has since converted to NT, I found OpenNT to be a refreshing addition to my NT system. Softway Systems recently partnered with Intergraph to provide NFS support for OpenNT, making the product even easier to integrate into NT environments.

However, despite my enthusiasm for performing text-file manipulations with OpenNT tools, I question my need for this product. Softway markets the software to technical users who need UNIX functionality on an NT workstation and to corporate developers and software vendors who want to port and deploy UNIX applications on NT. For both of these potential

OpenNT uses, existing NT tools and utilities (which are not limited to Win32 applications) provide equal or better functionality. If you want to test the software for yourself, you can get a 30-day evaluation CD-ROM by clicking the Eval icon on OpenNT's Web site.

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Contact: Softway Systems * 415-896-0708

Web: <http://www.opennt.com>

Price: Starts at \$229 (workstation with X11R5 runtime)

System Requirements: Windows NT Server 3.51 or 4.0, or NT Workstation 3.51 or 4.0, 15MB to 75MB of hard disk space

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