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AT&T 6300 Plus Running Simultask

With Simultask, 6300 Plus Is Transformed

Providing Cost-Effective Access to Unix System V, MS-DOS

By Steven Satchell Review Board

While the AT&T 6300 Plus is a capable IBM PC-compatible 286-based microcomputer, its virtues only really shine when you consider the system running a unique operating environment called Simultask.

With Simultask, AT&T has pulled off an amazing stunt: This system runs Unix System V and offers MS-DOS as a task under Unix. What is amazing is that the MS-DOS task is as capable, compatible, and speedy as it is. MS-DOS in Simultask runs MS-DOS programs with the speed and compatibility of any 6-MHz PC AT compatible. In one instance, we found Simultask's MS-DOS more PC compatible than running MS-DOS directly. (See "6300 Plus: Paradoxical Computer a Poor Value," July 21, 1986.)

The AT&T 6300 Plus running Simultask offers an elegant one-box solution for those wishing to access both Unix and MS-DOS. You can use binary information in either environment with ease, and text information is easily converted from MS-DOS format to Unix and back.

Simultask runs MS-DOS as a task under Unix. Files can be used by software in both systems. Text can be converted from MS-DOS format to Unix and back.

FEATURES:

The 6300 Plus is based on the Intel 80286 running at 6 MHz, with an optional 80287 math coprocessor. System random-access memory (RAM) on board is 1 megabyte, with Simultask requiring an additional 512K for a total of 1.5 megabytes.

Two drives are supplied with this machine: a 1.2-megabyte floppy disk drive and a 20-megabyte hard disk. The default setup of the hard disk gives 85 percent of the space to Unix, while 15 percent is reserved for MS-DOS program files. Simultask normally stores MS-DOS program and data files in the Unix file system for most programs. But a few programs must run out of a regular MS-DOS disk partition — AT&T mentions the Intel Above Board system drivers and 3Com Etherseries system drivers specifically. The reserved MS-DOS disk area is for these programs.

A monochrome monitor is standard with the 6300 Plus, and a color monitor is optional. Both screens offer 640 by 400 dots and can display 25 lines of 80 characters.

The system board also has one serial port (on a standard 25-pin connector instead of the PC AT's 9-pin) and a Centronics printer port.

Although AT&T offers two keyboards

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for this machine, we prefer the non-PC XT version for the Unix system, with or without the Simultask software. The XT-style keyboard will work just fine, but a three-key sequence must be used in Simultask to switch between Unix and MS-DOS programs, while the other keyboard has a dedicated key for this.

Seven slots let you include a wide range of options. Four slots accept 8-bit cards originally designed for the IBM PC family, while three slots accept many 8-bit cards or 16-bit cards specifically designed for the AT&T computer line. One 8-bit slot is used for the floppy/hard disk controller, and one 16-bit slot is used for the expansion memory card.

PERFORMANCE:

In our prior report, we noted that one of our standard tests, Version 14.15m of the Pro-YAM telecommunications package, would not start up properly under MS-DOS 3.1 on the 6300 Plus. We were astonished to find that Pro-YAM ran perfectly under Simultask. We also successfully ran Framework II 1.0, Lotus' 1-2-3 1A, PC-Talk IIIc, Crosstalk 3.6, Smartcom 2.1, Microsoft Windows 1.01, and Reflex 1.0. We also verified that Sidekick 1.56A would work, but memory-resident packages are not really useful with Simultask since this system essentially reboots MS-DOS each time you start it from Unix.

We found that the 8-MHz 80286 processor, running MS-DOS benchmarks under Simultask, computes about as fast as the original 6-MHz PC AT running PC-DOS, which suggests that Simultask is very efficient. Even with the overhead of the Unix operating system, you won't notice the difference in recalculating a 1-2-3 spreadsheet under Simultask.

When we tried to measure differences in disk access speeds, we ran into a problem: Simultask wouldn't let our MS-DOS build a file larger than 1.2 megabytes (our benchmark generates a 5-megabyte file). Further investigation showed us that it was the implementation of Unix that couldn't handle a larger file. AT&T told us that there is a limitation built into Unix to prevent one user from hogging disk space.

The conclusion is that the file size limit won't affect you if you use this machine for word processing or spreadsheet operations. If you run large database applications or other tasks that create big files, you will need to modify your Unix system file to boost the limit.

We adjusted this limit to complete the test and found that sequential disk access on Unix is considerably faster than in MS-DOS. Sequential read and write is used in many word processors and spreadsheet programs. This improvement stems from the fact that Unix transfers two sectors of data from the disk at a time, while MS-DOS transfers just one. Random disk accesses were slower in Unix, however, due to differences in the way that the Unix and MS-DOS file systems keep track of sectors.

> A remarkable achievement — Simultask's MS-DOS is more PC compatible than the 6300 Plus running MS-DOS directly.

When you start using the interface, called the PC 6300 Plus Office, you will immediately notice that it is slower in screen handling than environments such as Microsoft Windows or Desqview. You also cannot type ahead of the system with confidence while in the office menus. This is a minor flaw but an irritating one if you are in a hurry. The Office interface resembles the AT&T 7300 user interface, but it is not as sophisticated in its capabilities.

This is a multiuser system, so you can configure a network of 6300 Plus systems and other Unix systems using the simple UUCP (Unix-Unix Copy) telephone system-based networking standard. You can also configure a modem to use your 6300 Plus remotely.

During our use of the system, including a 48-hour continuous test, the 6300 Plus worked flawlessly. The Unix system detects and recovers from hard disk defects in a positive manner. We saw a demonstration of this powerful facility when the hard disk encountered an error: We got a complete report on the nature of the read error. In this instance the recovery was so good, we lost no data. Sometimes, though, a read error will prevent one or more sectors from being copied correctly.

The 6300 Plus conforms to the FCC limits for radio frequency interference for a Class B (residential) computing device. We noticed no radio or TV interference during the course of our evaluation.

We were impressed with how well the Unix file system supported our MS-DOS programs and with the computing speed, which is right up there with the PC AT even when running MS-DOS under Unix. Our favorable impression is tempered somewhat by the file limit problem and the slowness of the Office interface.

With its processing speed and the high compatibility of its MS-DOS implementation, the AT&T 6300 Plus running Simultask will please those looking for a system that can provide access to both MS-DOS and Unix. It is the best solution to that problem we have seen to date. We rate this system very good in performance.

DOCUMENTATION:

AT&T has been building a reputation for providing good documentation. In our prior report, we rated documentation for the MS-DOS 6300 Plus system as very good. The Simultask system earns the same score.

To the three manuals, quick-reference booklet and cards, and tutorial disk provided with the MS-DOS machine, the Simultask version adds inserts to the quick-reference booklet and two additional manuals.

The user's guide to Unix System V does a superior job of explaining the cryptic commands you find in the Unix operating system. Common commands are summarized in the quick-reference booklet. The operations guide is a more in-depth look at using and maintaining the Unix system as well as the menu-oriented Office system.

Other manuals are available from AT&T to cover specific aspects of the system, including how to develop Unix-based software on and for the 6300 Plus.

On large Unix systems, the user manual is on-line. We understand why AT&T opted not to include this feature on the 6300 Plus — the manual pages would fill the rest of the disk. We note that the Office interface has no on-line help at all, not even of more modest proportions. This contrasts with AT&T's other Unix models, the 7300 and the 3B1, where on-line help is a functional part of the interface.

This shortcoming aside, the quick-reference information coupled with superbly written manuals earns the 6300 Plus with Simultask the rating of very

good for documentation.

EASE OF USE:

If you purchase applications specifically tailored to the 6300 Plus Office user interface, you never have to interact with a command line, in either Unix or MS-DOS. All interaction is done with a menu tree for selecting commands and message boxes for information entry and confirmation. AT&T limited the number of choices in each menu to keep the menus from getting messy. In most cases, you can key the first letter of the menu item to choose it more quickly.

Power users will appreciate having seven active windows plus the MS-DOS window; moving from application to application is quick and simple. Since all the programs running, including the MS-DOS program, share the same file system, you can move information from one program to another by changing windows instead of exiting one program and starting another.

AT&T provides a reasonable applications shell for MS-DOS in the Simultask system. You can install programs, using automated scripts in many cases, then call up the application from the Office interface. In many cases you need never see a command line prompt.

The monochrome display uses a font that is easy to read and didn't tire our eyes. The monitor has a convenient tilt-and-swivel base.

In the Unix windows, you can issue both Unix commands and MS-DOS commands. Simultask recognizes the type of command involved and runs it accordingly. One concern for experienced Unix users is that AT&T did not include the Unix More command. Instead, it gives you the similar but considerably less talented MS-DOS More command.

Many of the features supported on the local screen are not supported for a remote user. For example, you cannot run MS-DOS from a remote Unix terminal.

Simultask's capable user interface is quite a bonus. We rate the AT&T 6300 Plus running Simultask as very good in ease of use.

SETUP:

Setting up this machine from its component pieces is a fairly long process. It took us two hours from the time we opened the box to the time we could do useful work. If your dealer or AT&T sets up the machine for you, the amount of time drops from hours to minutes.

If you need to fill out system board RAM or want to install an 80287 math coprocessor, you remove the bottom cover of the system unit. The sockets and configuration switches are remarkably accessible. Adding the extended RAM card is also simple: You pop the system unit cover, remove the metal slot cover, and plug in the board. In our first report, we talked about the balky system cover; this sample had no such trouble.

Software installation is very automated. You spend the most time simply waiting for the data to be read off the floppy disks. We ended up loading 10 floppy disks, seven of which were 1.2-megabyte disks. That's a lot of data.

Once you get the system up and running, you find that AT&T has automated the loading of Unix applications completely. Many MS-DOS applications also have loading scripts so that once you indicate the package you want to install; the installation scripts complete the task. The system will also catch you if you put in the wrong floppy disk during installation. This saves you from having to start all over again.

You will have difficulty going wrong installing software onto this system. AT&T went to a lot of trouble to help you get it right, and it earns an excellent rating for setup.

INFO WORLD THE PC NEWS WEEKLY

REPORT CARD

PERFORMANCE COMPUTERS
SIMULTASK

7.8

	Unacceptable	Poor	Satisfactory	Very Good	Excellent
Performance	☐	☐	☐	☑	☐
Documentation	☐	☐	☐	☑	☐
Ease of Use	☐	☐	☐	☑	☐
Setup	☐	☐	☐	☐	☑
Serviceability	☐	☐	☐	☐	☑
Value	☐	☐	☐	☑	☐

SUMMARY

The AT&T 6300 Plus running Simultask pulls off a remarkable stunt: You get Unix System V and an amazingly compatible and quite speedy MS-DOS running as a task under Unix. An elegant and reasonably priced one-box solution for those who want to access both Unix and MS-DOS.

PRODUCT DETAILS

List price, $5,420. Model tested includes 6-MHz 80286 processor, 1.5-megabyte disk drive, 20-megabyte hard disk drive, serial and parallel ports, monochrome display, MS-DOS 3.1, GW-BASIC; Unix System V, Release 2 ($95), Simultask ($395). AT&T, 1776 On the Green, Morristown, NJ 07960; (800) 247-1212.

SERVICEABILITY:

AT&T offers a one-year limited warranty (90 days for monitor and software media) on this system. A toll-free number is provided for assistance and warranty repair advice. A variety of service contract options are available.

As we remarked in the earlier review, the quality of construction we saw in this machine makes us believe that the vast majority of 6300 Plus systems will not encounter any problems. Diagnostics built into the machine run when you turn the system on, catching many problems before you lose data. In addition, a customer diagnostic disk lets you isolate the cause of problems before crying out for help. Unlike most diagnostics, this one is designed to be run by the customer, not by a technician.

The telephone support is what makes this machine so attractive. We called in several problems, and AT&T's response was reassuring. Not once were they rude or less than interested in helping us resolve our problems. We were very pleased with the response we received.

All computers today should be supported as well as the 6300 Plus is supported by AT&T. The system earns an excellent rating in serviceability.

VALUE:

As a stand-alone computer running MS-DOS, we did not find the AT&T 6300 Plus to be a satisfactory value because of incompatibilities with the AT standard. However, the 6300 Plus running Simultask is a remarkable achievement: It offers Unix System V and MS-DOS with equal facility. You're not getting Unix and sacrificing on the MS-DOS by putting up with limited compatibility or limited performance. The MS-DOS im-

plementation is a marvel.

As a bonus, AT&T's operating shell makes the integration of these two systems smooth and easy.

The entire package — 6300 Plus, MS-DOS 3.1, Unix System V, and Simultask — costs $5,910, not much more than IBM is charging for an AT-level MS-DOS machine alone. The service is great, the system is well-built, and you can run MS-DOS and Unix applications with equal ease. For these reasons we rate value as very good.

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