

AccessionIndex: TCD-SCSS-T.20121208.129

Accession Date:

Accession By:

Object name: DECsystem 5830

Vintage: c.1993

Synopsis: MIPS-based departmental system.

Description:

In c.1993 the Dept.Computer Science, Trinity College Dublin, purchased a relatively unexciting DEC MIPS-based machine as the main departmental system to replace its VAX 8530. These systems were essentially a superset of DEC's MIPS-based workstations, but in the format of DEC's previous VAX 6000 model 300.

The DECsystem 5800 series (5810, 5820, 5830, and 5840) were multiprocessor systems, with the 3rd digit denoting the number of CPUs. They had 25MHz MIPS R3000 CPUs plus MIPS R3010 floating-point coprocessors, 8-192MB DRAM, up to 2GB storage, the split-cycle VAXBI Bus, and ran DEC's symmetric multiprocessing version (*Ultrix V4*) of AT&T's UNIX operating system (*System V*). By introducing the 5810 and 5820 on 11-Jul-1989, DEC went head-to-head with IBM's RS/6000 RISC products. The 5830 and 5840 were introduced in Apr-1990.

The MIPS R3000 was the 2nd iteration of the 32-bit MIPS-I RISC instruction set architecture. It included a TLB and MMU, and could support up to four coprocessors, including the R3010 floating-point coprocessors. An on-chip cache controller managed separate external data and instruction caches.

This system purchased by the Dept.Computer Science started as a DECsystem 5820 called '*ashe*', with 64MB of memory and 2.4GB of disk, including two RA81 460MB disks. Then in 1994 it was upgraded to a 5830 by merging it with a 5810 (thought to be from the department's Distributed Systems research group [*DSG*]) that had 32MB of memory and 2.4GB of disk. This involved combining the disks, CPU and memory into one system, and removing the two RA81s at the same time. The DECsystem 5810 maintenance agreement was ending so there was a degree of urgency involved.

Unfortunately this system was disposed of c.1997, when it was replaced with a slightly more exciting Sun Ultra Enterprise 450 using the UPA packet-switched interconnect. However, if the DECsystem 5830 survives elsewhere the department would very much welcome its donation back into the collection.

The homepage for this catalog is at: <https://www.scss.tcd.ie/SCSSTreasuresCatalog/>
Click '*Accession Index*' (1st column listed) for related folder, or '*About*' for further guidance. Some of the items below may be more properly part of other categories of this catalog, but are listed here for convenience.

Accession Index	Object with Identification
TCD-SCSS-T.20121208.129	DECsystem 5830, MIPS-based departmental system, c.1993.

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COMPUTERWORLD

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Compaq to pay IBM patent bill

Insists MCA aspect of cross-licensing deal not a concession to IBM bus

BY PATRICIA KEEFE
and MICHAEL ALEXANDER
CW STAFF

Compaq Computer Corp. reached an agreement with IBM last week, settling all past liabilities related to IBM personal computer technology and at the same time buying access to Micro Channel Architecture and other advanced computer technologies.

The two companies announced a broad-reaching patent cross-licensing agreement under which Compaq has agreed to pay IBM a fixed dollar amount in five annual installments. IBM served notice last year to PC clone vendors that it would require royalty payments of 1% to 5% on all systems that it judged had copied proprietary technology used in the IBM Personal Computer, XT and AT lines.

Despite that past threat, the

deal announced Friday was couched in carefully neutral language describing an agreement by each company to grant the other a "worldwide, nonexclusive license" on patents filed before July 1, 1993.

Every penny counts

The IBM-compatible PC market is a potentially lucrative source of royalty revenue for IBM



Compaq specified that the agreement included IBM's MCA technology but insisted it is not developing and has no plans to develop an MCA-based product line. Industry analysts were generally skeptical about that denial.

The agreement was widely viewed as bolstering IBM's efforts to position the MCA bus as an industry standard while also fortifying Compaq's ability to support any of the three competing PC bus architectures.

The deal also extends to IBM's proprietary reduced instruction set computing and multiprocessing technology, said Mike Swavely, president of Compaq's North American region. An IBM spokeswoman said, "All past liabilities have been addressed. We're starting with a clean slate."

Tandy Corp. and Wyse Technology have already announced

Continued on page 101

DEC pace keeps users on guard

BY ROSEMARY HAMILTON
CW STAFF

BOSTON — These days, if a Digital Equipment Corp. customer blinks, he may miss a whole product generation.

Just six months after launching a multiproduct assault on the desktop market, the Maynard, Mass.-based company last week blasted the industry with another round that includes a sweeping array of reduced instruction set computing-based systems and a revamped VAX line. In addition, the company announced several software products and communications facilities (see story page 6).

The frenetic activity is part of DEC's strategy to simultaneously grab a piece of the emerging RISC-based open systems market and keep its midrange market position firmly in place. DEC, like many other computer companies, is now struggling to serve two masters: the new open systems customer and the longtime user of its proprietary systems.

For instance, DEC tried to outdo Sun Microsystems, Inc. in

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CA dealt out of N.J. casino games

BY ROBERT MORAN
CW STAFF

ATLANTIC CITY — Two casinos fear that Computer Associates International, Inc. may be prepared to cash in its chips at this seaside gambling haven. The software giant has been barred from gambling halls here by the New Jersey Casino Control Commission and has given no indication that it will be back.

CA's failure to comply with casino vendor licensing requirements has left Tropworld Casino/Entertainment Resorts, which runs the Tropicana Hotel and Casino, waiting anxiously for the vendor to tip its hand. The Boardwalk Regency Corp., which operates Caesars Atlantic City, has been unable to obtain support since mid-May and is preparing to abandon CA.

"The casino commission said to its regulated companies,

'Don't do business with CA,' " said Michael McElroy, vice-president and secretary of CA. "This wasn't our decision."

Information systems directors for the two casino companies confirmed there were prob-

lems with CA but referred all questions to their attorneys. Michael Ray, data center manager at Boardwalk Regency, said he will remove CA-Omniguard and replace it with security software

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Moon landing + 20 years: A giant leap for space data

BY ALAN J. RYAN
CW STAFF

PASADENA, Calif. — Twenty years ago this week, man took his first tentative steps on the moon and gathered more data than he could analyze. Today, the Magellan space probe is on its way to Venus, where it will generate more data than all previous space missions combined.

Unlike other missions, the data generated by Magellan will not hit the storage vaults to sit undigested, according to Leslie Pieri, team chief for the data management and archive team at the Jet Propulsion Laboratory here.

The laboratory is overseeing the Magellan project for the Na-



tional Aeronautics and Space Administration.

Although much of the hardware being used by the mission's control team is based on older technology, several things will be done differently with Magellan than with other space missions to help scientists use the data more effectively and efficiently, Pieri said.

More than three terabytes of information will be collected during the Magellan mission. The use of optical disks and a single-source catalog located in a central database, from which scientists can retrieve the massive quantity of data, will give scientists faster access to the data, she added.

When data is being materi-

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DEC strengthens NAS system glue

BY AMY CORTESE
CW STAFF

Digital Equipment Corp. — like many of the computer industry's old guard — is faced with the dilemma of satisfying its traditional base of proprietary customers while pushing ahead with promising new technology based on open systems. And, like other vendors, it recognizes that the key to this strategy's success is software to tie it all together.

Last week, DEC expanded on its brand of software glue, called Network Application Support (NAS). NAS is a set of common application services intended to integrate applications across dissimilar environments, tying together VMS, Ultrix and a variety of desktop platforms. Unlike IBM's Systems Application Architecture (SAA), DEC's software architecture embraces its Unix operating environment, as well as other vendors' platforms, such as the Apple Computer, Inc. Macintosh and MS-DOS-based

personal computers.

Gary Ragsdale, manager of information systems at Bonneville Power Administration in Portland, Ore., whose firm uses systems from DEC, IBM, Wang Laboratories, Inc. and a host of others, said, "We're always looking for products that will help us communicate across various platforms."

NAS has evolved from mail and file-sharing services announced in January 1988 to include Decwindows, a compound document architecture (CDA) and repository service. At last week's product rollout, DEC expanded NAS with three services for database access, data conversion and printing:

- VAX SQL/Services provides remote access to RDB from desktop applications running Ultrix, VMS or MS-DOS. Based on a client/server model, SQL Services requires that the user write applications that call services from the server portion.

Currently, SQL Services is

available only for RDB; third-party VMS- or Ultrix-based database management systems are not included. DEC plans to extend the services to its future Ultrix offering. VAX SQL/Services is included with VAX/RDB Version 3.0.

- CDA Converter Library provides two-way conversion between data formats supported by DEC's CDA and various external

formats, allowing for disparate text, graphics, images and spreadsheets to be shared.

- Decprint, a series of printing facilities designed to simplify printing.

Though most NAS services are available, many users have not yet installed the latest releases of software to take advantage of them. And third-party applications have been slow to

arrive on the market.

Nonetheless, DEC received high marks from analysts for its integration scheme.

Michael Milliken, vice-president at Patricia Seybold's Office Computing Group, said that DEC has a significant lead on other computer vendors such as IBM and Hewlett-Packard Co. in providing a comprehensive software architecture.

Awaiting RISC software

With the introduction of its most powerful RISC processors, DEC has made its strongest case yet for Ultrix.

But the availability of key third-party software will be crucial to the operating system's success. The message from DEC was that in deciding between VAX and RISC, the choice should be based on the desired software application. However, for the time being, that stacks the deck in favor of VMS, with more than 6,000 applications offered by third-party developers. DEC said only 70 applications are currently available for its RISC-based Ultrix systems.

Underscoring this theme, one user, Gerald Siddons, director of scientific computing for the division of biostatistics and epidemiology at the Dana-Farber Cancer Institute in Boston, said he is deciding between DEC's RISC workstations and Sun Microsystems, Inc. workstations for his division.

While Siddons said he would like to go with DEC, the software he wants to use, primarily the SAS statistical package, is not yet available for DEC RISC platforms. "That's been the biggest criticism [of DEC] — not enough software," Siddons explained. Conversely, he said, Sun "has a plethora of software available. It's a great selling point."

Siddons said he must decide whether to wait for the software applications for DEC or go with Sun workstations — his second choice — now. Siddons said SAS would be available on DEC's RISC next year, so the decision has become a matter of exercising patience or going with the second choice.

However, DEC was ready last week with an army of more than 200 software developers who have promised to develop or port applications to its RISC platforms.

AMY CORTESE

DEC

FROM PAGE 1

the RISC market last week, by introducing what it claims is the broadest range of RISC products available, including a workstation for less than \$8,000, which the company said is the cheapest in the industry. At the same time, DEC brought out new

high-end VAXs and promised a vector processing capability to longtime VAX customers. This facility will be the first major architectural change to the VAX in more than a dozen years.

While customers praised DEC's aggressive behavior, they also said the company is dangerously close to doing too much. As DEC tries to be the price/performance leader in two arenas, cus-

tomers are finding it hard stay in step.

For users, though, there will be some relief ahead. DEC officials said last week that the firm will move away from the fast pace of the last several months and slow down the product rollouts to an 18-month cycle.

Keeping up

The changing of the guard in the VAX line alone this year could give a user a headache. "It's sort of a pain, with all they've been doing, [to keep] up with it," said Guy Russo, manager of MIS planning and development at Meredith/Burda in Des Moines, Iowa. "What's ironic is we're in the process of purchasing a 6300."

The VAX 6300, out just six months ago, was replaced last week as the highest performing 6000 system by the 6000 Model 400. The 6300, renamed the 6000 Model 300, was bumped to a mid-tier 6000 system.

To round out the 6000 series, DEC introduced a new low end, called the VAX 6000 Model 210 last week, not to be confused with the now-defunct 6200. In January, the 6300 canceled out the 6200, which had been introduced the previous year.

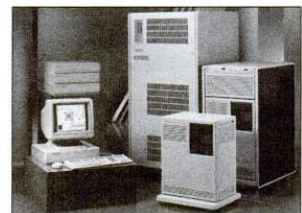
Meanwhile, the 6000 series replaces the VAX 8000 series, which has not been officially canceled but will be phased out.

"I question the wisdom of doing it so quickly, but as long as what we have performs well, that's my real concern," said Maurice Hebert, director of MIS

at Hinkley, Allen, Snyder & Comen, a law firm in Providence, R.I. Hebert runs a VAX 8530 and a 6220, neither of which has a future, according to DEC.

Several users contacted last week said they ultimately back DEC's decision to juggle open systems and VAX product lines.

"They're doing a darn good job," said George Reid, director of MIS at Sanford C. Bernstein & Co. in New York. "With RISC, Unix and MS-DOS services, I think it's superb. I'm looking for a systems integrator, and that's where they're starting to make great strides." What is more, VAX users in particular have faith that DEC will not



Don't look now — it's another DEC generation

abandon the line for RISC, as some industry observers have suggested.

"They aren't moving away from VMS," said a user at a Canadian utility company who requested anonymity. "I think they'll expand both lines, and I'm certain VMS will be our main-stream system for a while."

A low-price generation

The latest VAX and RISC systems trotted out by DEC together provide a performance range of 2.5 to 36 million instructions per second (MIPS) and offer some of the cheapest system prices DEC has ever offered.

The new VAXs are as follows:

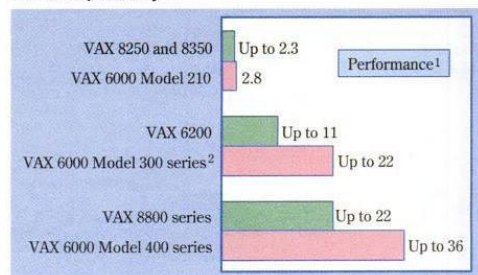
- The 6000 Model 400S, a multiprocessing series that can be expanded to a six-processor configuration. The systems effectively replace the 8800 series. Prices start at \$239,000.
- The 6000 Model 210, the new low end of the 6000 series, with a performance rating of 2.8 VAX Units of Performance. The entry-level price is \$129,000.
- The Microvax 3100, which replaces the Microvax 2000. The multiuser system starts at \$6,680 and offers 40% more performance than its predecessor.

On the RISC front, DEC introduced the following:

- The Decsystem 5800, which can be configured as the 5810 or, as a dual-processor configuration, the 5820. The uniprocessor version clocks in at 18.7 MIPS, and the 5820 doubles that performance. An entry-level system costs \$121,500.
- The Decsystem 5400, which will serve as DEC's midrange RISC system, performs at a slightly slower rate than the 5800 but will be priced much lower. The 16.6-MIPS machine will cost \$49,900.
- The Decsystem 2100, a low-end RISC box that will be offered at \$7,950 for a monochrome version; a color version will cost \$11,450.

Shaking up the lineup

The DEC VAX 6000 family takes shape as the older VAX 8000 series fades away



¹ Relative units of processing with VAX-11/780 equaling 1.0

² Introduced as 6300 series in January

CHART BY JIM HART

Figure 2: Introduction of DECsystem 5810 and 5820, ComputerWorld 17-Jul-1989, p.6

DEC plugs up workstation gaps

Offers graphics-rich Decstation, Decsystem and price cuts on existing systems

BY MARYFRAN JOHNSON
CW STAFF

PALO ALTO, Calif. — Digital Equipment Corp. filled in the gaping performance holes and shored up the graphics capabilities of its Unix-based computer line last week with the long-awaited debut of the Decstation and Decsystem 5000s.

Accompanying the announcement were surprisingly steep 25% to 40% price cuts on existing workstations and servers in DEC's reduced instruction set computing (RISC) line, which analysts estimated raked in slightly more than \$1 billion in 1989 revenue.

"DEC is absolutely committed to continuing to play hardball with IBM in the price/performance war in the RISC-Unix market," said Peter Schay, an analyst at Gartner Group, Inc. in Stamford, Conn.

Gartner Group is now advising its clients to depreciate their RISC-Unix systems by at least 45% per year, which is double the ordinary system depreciation.

The major system and software highlights of the DEC announcement were the following:

- Four Decstation 5000 workstations, all sharing the same Mips Computer Systems, Inc. R3000 chip but varying in two- and three-dimensional graphics capabilities and priced from \$14,995 to \$51,000. All models are immediately available.
- Three Decsystem servers: the

Model 200 "tabletop" server at \$14,995; the Model 5830 three-processor server at \$140,000; and the four-processor 5840 at \$160,000. The 5800 models are field-upgradable from existing 5810s and 5820s and are available in June.

- A new version of the Ultrix operating system, DEC's version of AT&T's Unix System V, which includes symmetrical multiprocessing capabilities, improved personal computer integration and support for the industry-standard SQL integrated runtime database.

- Extended networking abilities that enhance support of wide-area networks and additional communications protocols such as Open Systems Interconnect and X.25, plus a new version of Decnet-Ultrix that permits communication between DEC machines and any other computers using the Transmission Control Protocol/Internet Protocol.

Does all of the above bring DEC nose-to-nose with IBM's new RISC line of Powerstations and Powerservers? The answer from industry analysts and some customers was a qualified "Yes."

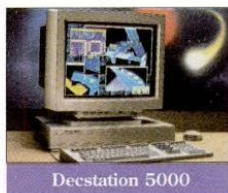
"I've seen the 5000 machine perform, and it is impressive," said Robert Grandle, a systems manager at the National Aeronautics and Space Administration in Langley, Va. Grandle has run beta-test software on an IBM RISC System/6000 in his shop, which also has several Decstation 3100s running appli-

cations in computational fluid dynamics.

"I'm putting some purchase requests into the marketplace now, and I'm guessing it will be filled by either IBM or DEC," he

Roll 'em out

DEC's line of Decstation 5000 workstations begins with the Model 200CX, which is complemented by powerful servers



Decstation 5000 Model 200CX
MIPS: 24
Memory: 8M-120M bytes
Storage: Diskless to 21G bytes
Base price: \$14,995

Decsystem 5830
MIPS: 48
Memory: 64M-192M bytes
Storage: 560M bytes-2.4G bytes
Base price: \$140,000

Decsystem 5840
MIPS: 62
Memory: 64M-128M bytes
Storage: 560M bytes-2.4G bytes
Base price: \$160,000

Source: Digital Equipment Corp.
CW Chart: John York

said. "It depends on which of the two has the sharpest pencil."

Robert Herwick, an analyst at Hambrecht & Quist, Inc., said the DEC machine equals or better IBM's RS/6000 in everything but floating point co-processor performance.

DEC was credited with adding quality graphics features such as three-dimensional polygons, fill areas, 24-bit Z-buffers, depth cuing and color planes — the stuff of engineering dreams.

With increased memory size and storage capabilities, vastly improved graphics and faster disk access, DEC's new systems took a "really substantial jump in applications-level performance," Herwick said. And the addition of an open systems bus — the Turbochannel I/O interconnect — allows users to add memory in bigger chunks than ever before.

William Boyd, a systems manager at the National Center for Atmospheric Research in Boulder, Colo., plans to use a Decstation 5000 to offload applications running on his division's Cray Research, Inc. supercomputer — a task the first-generation Decstation 3100 was not quite up to performing. "Anything that gives us more raw computational speed, we need," Boyd said. "The RISC workstations have surprised us with their capabilities going beyond what DEC said they would."

One universal criticism of DEC's first-generation RISC machines was the lack of applications, but the company addressed that issue by trotting out some 850 applications now available on its RISC line. New packages are being added at the rate of 100 per month, DEC claimed.

Court of Appeals not slamming doors on Bells

BY GARY H. ANTHERS
CW STAFF

WASHINGTON, D.C. — A federal appeals court last week slightly opened the door that blocks the regional Bell holding companies from offering digital information services. Industry watchers said the ruling may spawn a host of new services and push down prices, but not any time soon.

A three-judge panel at the U.S. Court of Appeals overturned part of a 1987 ruling by U.S. District Judge Harold Greene that prohibits the Baby Bells from providing information services, manufacturing telecommunications equipment and providing long-distance telephone services. Greene presided over execution of the 1982 consent decree that broke up the AT&T monopoly.

The appeals court upheld the bans on manufacturing and long distance, but it said Greene applied a section of the consent decree that would have been appropriate only if the parties to the decree — AT&T, the regionals and the Justice Department — opposed lifting restrictions on information services. Those parties did not at the time oppose removing the ban.

The Bell companies can only be barred from offering information services if doing so "would be certain to lessen competition," according to the appeals judges.

Greene's 1987 ruling bars the generation of information by the regional Bells but not its transmission through local gate-

ways provided by the companies. In essence, it says they can provide the medium but not the message.

That could change after Greene responds to the higher court's decision. "You'll see home shopping and other home services like banking, travel reservations and ticketing," predicted Gary Arlen, president of Arlen Communications, Inc., a research organization based in Bethesda, Md., that specializes in interactive information services.

"This is clearly very encouraging for the regionals. I'm betting there is now enough competition in the industry that the [regional Bells] will be into information services within two years," Arlen said.

He estimated the current information services market at \$2 billion with a growth rate of 20% to 30% annually.

In addition to having a wider choice of electronic offerings, Arlen said businesses and consumers will benefit from the

price pressure that increased competition will bring.

However, an industry source representing telecommunications manufacturers disagreed. "It's more likely to mean market disruption than lower prices or new services," the source said. The regionals may use accounting tricks that will enable them to siphon off revenues from ordinary telephone services to subsidize initially unprofitable information services, according to the source.

Ken Allen, senior vice-president of Information Industries Association in Washington, D.C., said: "Our position is that the Bells will be in the information services business some day, but they shouldn't be in it now — not until safeguards are in place ensuring equal access to the networks."

For better or worse, the issue seems unlikely to be resolved soon. Appeals of last week's decision are possible from any number of the many parties to the case, and Greene may choose to invoke another round of hearings.

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