

DS90



DS90: Multi-User supermicro
for UNIX software, featuring an entirely
new compatibility approach.

Multipurpose

Two words describe the multi-user super-micro DS90.

Standardization and
Compatibility

Standardization means that software developed for UNIX can be used with DS90.

Compatibility means that DS90 interfaces easily with computers from other manufacturers.

DS90 actually represents an entirely new system approach which allows the user to interface with existing hardware and software. Simultaneously as it permits further development and virtually unlimited expansion.

D-NIX AND THE 16/32 HARDWARE BIT STRUCTURE PROVIDES UNLIMITED POSSIBILITIES

The secret is D-NIX. An operating system which is compatible with UNIX. And provides many possibilities not available in any computer system of comparable size.

The DS90 hardware is modular-designed and thus guarantees flexibility and easy maintenance. DS90 is compact and can be placed in any ordinary office.

A BUSINESS OR PERSONAL COMPUTER BECOMES AN ALL-PURPOSE WORKSTATION

A personal computer used with DS90 serves a threefold function:

- As a terminal to DS90.
- As a local workstation with access to the DS90 peripherals.
- As a terminal to another computer via protocols such as IBM 3270 SNA/SDLC, IBM 3770, Univac UTS 400, etc.

Three steps closer to the all-purpose terminal concept required in many modern information systems.

SEVERAL COMPUTERS MAY BE CONNECTED TO D-NET – A FAST LOCAL NETWORK

All computers in the net have access to central databases and peripherals. D-NET has a speed of 0.5 Mbyte/s.

PORTABILITY PROVIDES THE USER WITH A WIDE RANGE OF SOFTWARE

A major advantage of a UNIX compatible operating system is that software can be easily moved between different computers.

All programs written in C under UNIX and XENIX may be run under D-NIX, directly or with minor changes. This offers a great range of standard software.

SEVERAL ADVANCED TOOLS FOR SYSTEM CONSTRUCTION

Database management is important in every administrative application. DS90 can be supplied with MIMER – an already established relation-database which is integrated and of modular design.

In addition to the database handling, MIMER offers functions such as information retrieval, program generation and queries using a natural language.

ISAM is another database aid which is included in D-Basic III.

NECTAR is a complete toolbox for system construction. Catalogues for terms, menus and registers are created along with functions for protection and reports. All software is interactive.

For traditional program development, DS90 offers D-BASIC III, Pascal, Fortran, APL, C and Assembler. D-BASIC III is compatible with BASIC II which is used worldwide.

APPLICATION SOFTWARE FOR VARIOUS PURPOSES

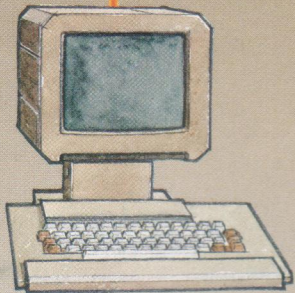
LEX-68 is a word and text processing package featuring many advanced functions.

Q-CALC is a sophisticated spreadsheet package for financial planning. D-NIX commands can be used to augment the standard functions of Q-CALC. Spreadsheets may also be used in texts prepared by Lex-68.

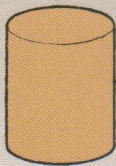
workstations...

Communication

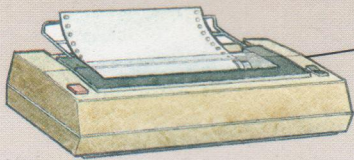
D-NET (0.5 Mb/s)



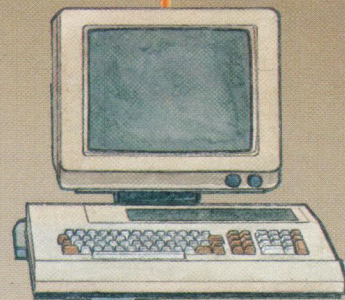
Personal Computer



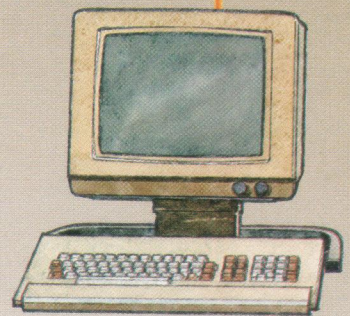
External Memory
(< 1.2 Gbyte)



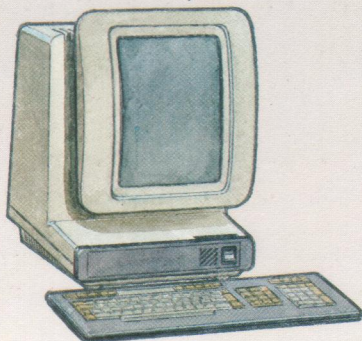
Printer



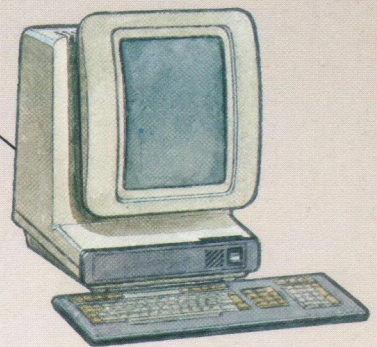
Personal Computer



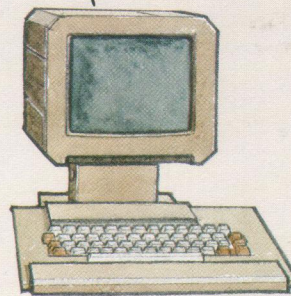
Personal Computer



Video Terminal
VT-100, ADM3 etc



Video Terminal
VT-100, ADM3 etc



Personal Computer

...standardize

D-NIX REPLACES AND EXPANDS UNIX

UNIX is rapidly becoming standard on 32 bit computers. Such features as an ingeniously designed structure and powerful tools for program development explain the success of UNIX. In addition programs developed under UNIX can be shifted between different computers. All the way from mainframes to micros.

UNIX offers several advantages, but is not beyond improvement. Which is why we developed D-NIX.

D-NIX is a completely new operating system which is compatible with UNIX

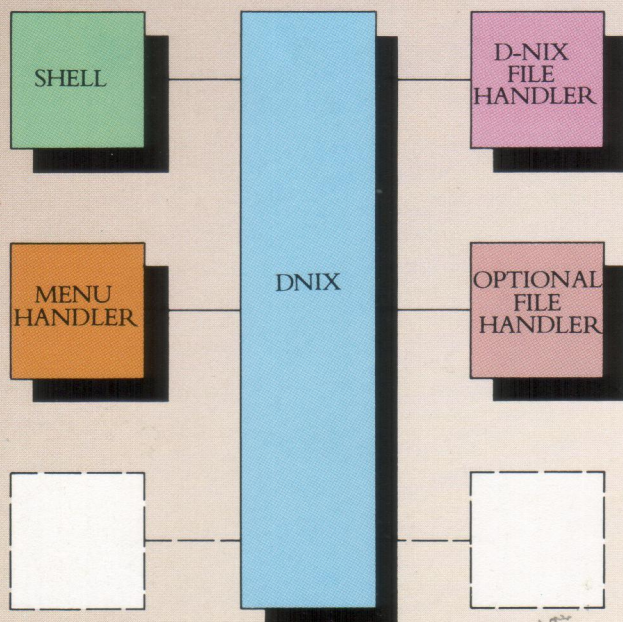
IMPROVED REAL-TIME HANDLING

D-NIX uses a small effective kernel to give rapid response to external events. This is a highly significant factor when several operators are using the system.

MULTIPLE HANDLERS PROVIDE FLEXIBILITY

Several simultaneous file handlers may be used.

In addition to the D-NIX file handler, file handlers for CP/M and MSDOS discs may be implemented as well as handlers for ISAM, etc.



THE FILING SYSTEM HAS BEEN DEVELOPED WITH SAFETY AS THE MAIN OBJECTIVE

The D-NIX file handler offers many improvements compared with its rather slow and vulnerable UNIX counterpart.

For example, D-NIX handles contiguous files, which improves both the capacity and safety of file handling.

NEW IMPORTANT PROGRAMMING AND SYSTEM FUNCTIONS

Several new options have been added to D-NIX commands to simplify certain common tasks. The user may generate his own UNIX configuration to optimize system performance for his particular applications.

DS90 HANDLES MANY SYNCHRONOUS AND ASYNCHRONOUS PROTOCOLS

The ability to provide computer communications has become one of the most important system requirements. For this reason DS90 is equipped with a large range of tested communications software.

Interactive protocols: IBM 3270 SNA/SDLC, Univac UTS 400 and several others. In this application DS90 acts as a cluster controller.

Batch protocols: 3770 SNA/SDLC and several others. In this application DS90 acts as a remote batch terminal.

Communications are handled by an intelligent communication processor without loading the central processor of DS90.

The asynchronous communication is handled internally by D-NIX. Support for the VT100, ADM3, etc is provided.

SEVERAL PROGRAMMING LANGUAGES

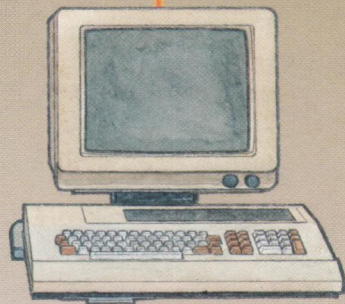
D-Basic III is fully compatible with Basic II, which is in use in over 50,000 installations. Several new extensions, such as long variable names, multiline If... Then... Else statements allow for structured programming.

The Pascal compiler is compatible with ANSI Pascal and uses IEEE floating point handling. The compiler makes advanced optimizations resulting in reduced program size and execution time.

The Fortran compiler is compatible with ANSI 66 and 77. It is similar to the Pascal compiler in terms of functions and optimizations.

A C-compiler is mandatory for system programming under UNIX. Pascal and Fortran pro-

ed software...



grams can be linked together with C programs.
Assembler – for low level programming.

DATABASE HANDLING WITH MIMER AND ISAM

MIMER is a relational type database and very easy to use, even without previous programming experience.

MIMER includes the following modules:

DB – Data base handler. The database may be defined and modified without any changes in the application programs. DB is included as standard in every DS90 system.

QL – a query language by which the user defines, creates, maintains and uses the database by means of simple commands.

SQL – An alternative query language which is rapidly becoming an international standard.

PG – A program generator which creates application programs without conventional programming. Applications and reports are developed and tested quickly.

SH – Terminal independent layout handler. It creates and changes terminal layout and controls terminal input and output.

IR – Information retrieval using the internationally standardized language CCL which is very easy to learn.

ISAM is a database tool included in D-Basic. 10 concurrent indices are possible.

LEX-68 PROVIDES POWERFUL WORD PROCESSING

LEX-68 is a full-function word and text processing package which includes a direct mailing system and spelling dictionary.

In addition to very advanced word processing, LEX-68 offers list processing with personally addressed letters, easy database handling and calculation.

The program is very easy to use since function keys are used for most functions. Several terminals can be used with the package.

Q-CALC – SPREADSHEET WITH THE POSSIBILITY TO USE D-NIX COMMANDS

Q-CALC is an extraordinary powerful spreadsheet package with a maximum model size of 99×18000 fields. It has extensive math and logical functions and permits the user to process spreadsheet data with D-NIX commands and own programs. Spreadsheets may also be incorporated in texts prepared by Q-CALC.

NECTAR – POWERFUL TOOLBOX FOR SYSTEM DEVELOPMENT

NECTAR includes features previously available only on mainframe computers. NECTAR includes the following modules, all of which are interactive:

- Functions for the definition of terms and registers.
 - Menu builder to structure menu trees and handle the selection of programs.
 - Functions for terminal independent development of graphics, list layouts and creation of reports.
 - Generator for the creation of register maintenance programs and the structure of programs using NECTAR.
 - Safety builder to create data integrity on menu, program, register and term levels.
 - Auxiliary builder which provides support functions for application systems.
- NECTAR uses the MIMER database handler.



...modular

DS90 HARDWARE – A FLEXIBLE MODULAR DESIGN

The most important demands imposed on computer hardware are efficiency, flexibility and ease of maintenance. The DS90 hardware is built up on function modules which allow the system to be further expanded by including new functions. The system has a high performance bus with an 11 Mbyte/sec transfer rate.

DS90 MAY BE FURTHER DEVELOPED WHEN SYSTEM REQUIREMENTS DEMAND

Microprocessor performance is continually improving. Thus any computer system must permit further development in order to capitalize on the latest technology.

DS90 can be updated on processor level by changing the CPU board, compilers and operating system.

The standard DS90 is supplied with a processor board using Motorola 68010. As an alternative, the DS90 may be delivered with National Semiconductor 16032 and software support.

THE PRIMARY MEMORY CAN BE EXPANDED

The standard size of the primary memory is 1 Mbyte. It may, however, be expanded to 8 Mbytes to meet the increasing requirements of user applications.

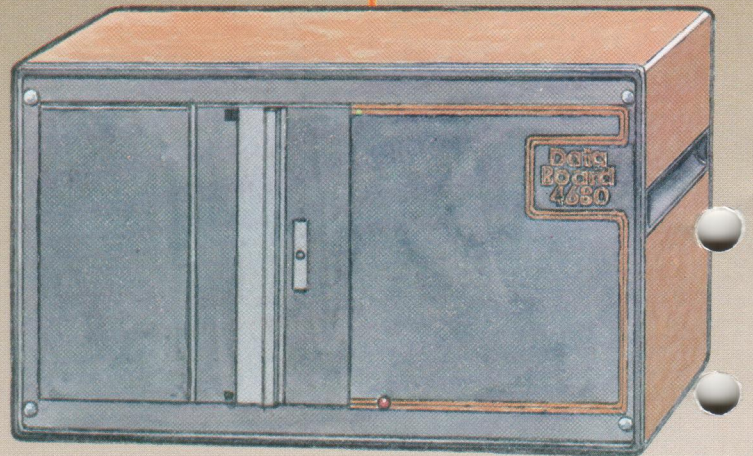
DIFFERENT TYPES OF PERIPHERALS CAN BE INTERFACED

Terminals and printers use multiple V24/RS232 interfaces. Drivers for Winchester (SASI), floppy disc, 1/2" and 1/4" tape stations are available.

DS90 gives you 5 free board slots for system expansion.

INTERNAL AND EXTERNAL MASS MEMORY

As standard, the DS90 is delivered with an internal Winchester disc and diskette station. In



Process Computer

addition to this, DS90 is prepared for an internal magnetic tape streamer.

In order to meet your demands, external mass storage units such as SMD-type hard discs, diskette stations and magnetic tape may also be connected to the system.

DS90 IS FLEXIBLE AND SUFFICIENTLY POWERFUL TO BE USED IN INDUSTRIAL APPLICATIONS

For industrial applications, over sixty I/O boards for applications like A/D conversion, D/A conversion, digital I/O, analogue I/O, motor control, etc. are available.

In addition to the 5 free board slots for system expansion, every DS90 is prepared for 5 optional I/O boards which can be used for measurement, control, etc. If more I/O boards are required, an external expansion rack is used.

Using D-NET, external computers can be used as separate process controllers. DS90 acts as host. For more information about the I/O boards, see separate brochure.

hardware.

D-NET

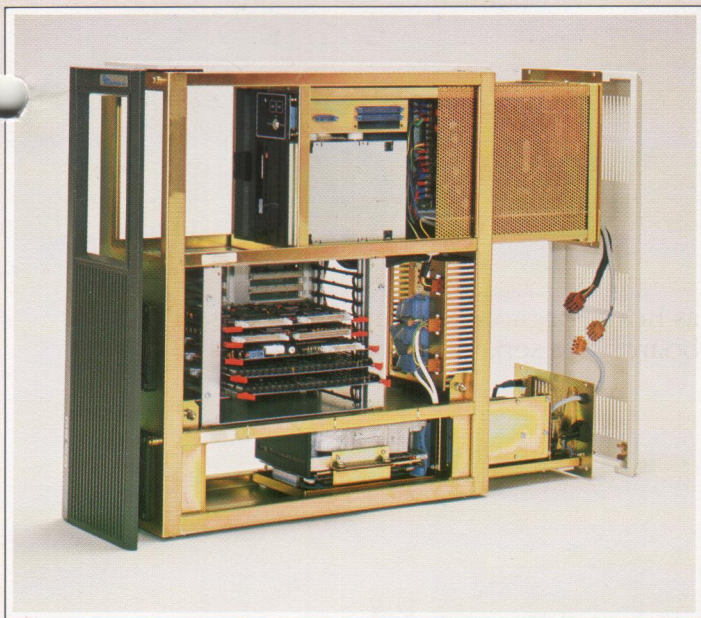
8" floppy drive and 1/4" magnetic tape streamer

CPU, memory
and I/O boards

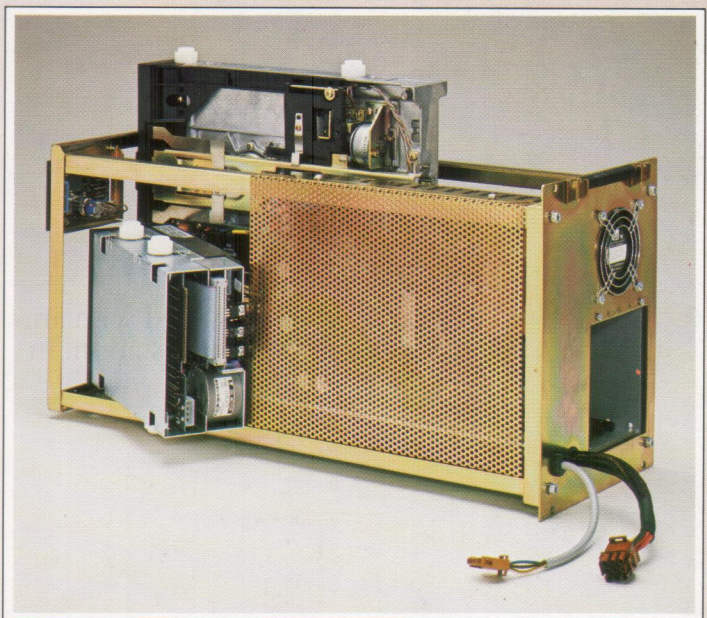
Winchester unit

Heavy duty frame

Grounded metal casing for protection against electrical disturbances



A design using easily detachable modules guarantees flexibility and easy maintenance



Module including Tape streamer, 8" floppy drive, I/O rack and communication processor

DS 90

D-NIX

A new real-time oriented operating system.

MULTI-USER

For UNIX application software.

D-NIX

Several simultaneous file handlers and many new functions.

ALL-PURPOSE WORKSTATIONS

Using personal computers.

D-NET

A fast local network.

COMMUNICATIONS SOFTWARE

Cluster functions are available for many synchronous and asynchronous protocols.

POWERFUL SOFTWARE

For application and program development.

MODULAR DESIGNED HARDWARE

16/32 bit structure.

MANY MASS STORAGE ALTERNATIVES

Floppy discs, hard discs and tape stations.

INDUSTRIAL APPLICATIONS

A wide selection of I/O boards are available.

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