DS90 – THE COMPUTER FAMILY

DIAB▲DATA

The DS90 family is a series of UNIX-based computers with a 32-bit architecture using single or multiple processor technology. The computers are designed for demanding administrative, technical and industrial applications - for systems ranging from small to large.

All Diab Data computers have an open system architecture

The DS90 family utilizes the current industry standards such as UNIX, VME, Ethernet, TCP/IP and SCSI (Small Computer System Interface). This provides our customers with flexibility combined with high performance - all at reasonable prices.

Diab Data is an active participant in the IEEE POSIX Standard Effort and is also a member of OSF (Open System Foundation). This means that products from Diab Data follow the established standards - both now and in the future.

A flexible multi-user system

DS90 computers can be used in systems with from one to over two-hundred simultaneous users. In other words, DS90 computers can be used in systems of all sizes. A computer from the DS90 family is always the right computer, particularly since the computer can be configured to the specific tasks it is to perform.

All DS90 computers can be expanded in modules, making it simple to customize a system for a specific application. This keeps the initial costs to a minimum.

With the possibilities provided for future expansion, there is no risk of outgrowing a system. The customer's investment in software programs and hardware is secured through Diab Data's upgrading system. For example, the same software program can be used without alterations on all DS90 models.

Multiprocessor technology

Several of the computers in the DS90 family have a multiprocessor design, that is, they can run with from two up to four parallel processors, greatly increasing performance in complex applications.

All DS90 computers, with the exception of the DS90-10 and DS90-11, can be supplied with more processors, for example when a growing company discovers that its present computer capacity is no longer sufficient. Each processor module has its own cache memory and floating point co-processor. The processor power can be upgraded in a matter of minutes, with no modifications required for existing software.

Diab Data's multiprocessor solution means that the computers resources are shared by the entire system. For example, the memory can be reached by any processor, and the work load is distributed between the processors automatically.

D-NIX - Real-time UNIX

D-NIX is fully compatible with UNIX System V and offers improvements in several areas in terms of realtime functionality. This is why D-NIX is perfect in applications that

DS90 - a series of computers with a wide range

This diagram shows the relative performance of the different computers in the DS90 family, both in their basic models, and in a fully expanded configuration (shown in light blue).
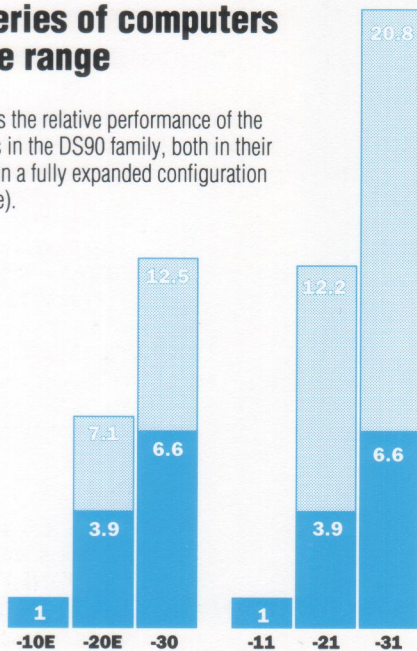
Software

Today, DS90 computers utilize a number of office automation packages, 4GL tools and standard languages. These include:

o Uniplex II+
o Q-Office
o LEX 68
o Q-CALC

o Oracle
o Informix
o Progress
o Mimer

o BASIC
o C
o COBOL
o Fortran
o Pascal

Characteristics	DS90-10/10E	DS90-20/20E
Processor	M68010	M68020 (1 or 2)
Clock frequency	10 MHz	16.67 MHz
Min RS232 ports	4	4
Max RS232 ports	32 (12 with DS90-10E)	42 (12 with DS90-20E)
Min working memory	2 MByte	4 Mbyte
Max working memory	4 MByte	12 MByte
SCSI channels	2	2
SMD channels	-	-
Min mass memory	65 MByte	65 MByte
Max mass memory	2 GByte	2 GByte
Floating point processor	Yes	One per processor
Cache memory	-	32 kByte per processor
Streamer	60 MByte	60 MByte
Disk drive	5.25"/1.2 MByte	5.25"/1.2 MByte
VME expansion	2 (optional with DS90-10E)	3 (optional with DS90-20E)
DataBoard expansion	4 (optional with DS90-10E)	4 (optional with DS90-20E)

demand the highest possible performance and short, guaranteed response times. D-NIX is validated in accordance with SVVS, System V Validation Suite.

The real-time functions include:
o Support for continuous files for quick access in databases
o The preemptive scheduler provides overall improvement of response times
o Asynchronous I/O handling for effective communication and process control
o Guaranteed response times during external calls
o Process locking which makes sure that the process is retained in the working memory
o Prioritized interrupt system providing minimal process interrupt latency
o Effective inter-process communication for rapid communication between processors

Full network support

The DS90 system uses the Ethernet standard with TCP/IP, making it easy to use the DS90 in a local network, even with computers from varying vendors. Functions such as network terminals, file transfer, remote printout and remote execution are standard.

NFS (Network File System) allows a user to access files transparently anywhere in the network with the remote files appearing to be local.

LAN functions can be extended to a global network (WAN) through the standard X.25. As a result, a DS90 network can be connected to one or several networks anywhere in the world.

Communication with mainframes

The DS90 uses intelligent communication processors for all external communication. The computer's own processors are therefore never overloaded. Thanks to this technique, the user can use DS90 as a gateway to other computers.

Diab Data has developed an extensive series of communication programs for the DS90 family. For example, DS90 has functions for terminal emulation and file transfer. The user can thus work with a mainframe via a DS90 directly from his own terminal. Among the protocols that can be handled are:

o IBM 2780/3780 BSC
o IBM 3270 SNA/SDLC
o Unisys UTS4000
o IBM 3270/BSC
o IBM 3770 SNA/RJE

Keep your PC's

A company or authority which expands to a minicomputer in the DS90 class often already has personal computers. There are many solutions available for a DS90 in combination with personal computers. Diab Data has developed a number of communication programs which facilitate communication with PC's, PS2 and Apple Macintosh. In such a system, the personal computers share the minicomputer's resources. This means that an existing PC park is given new life, while retaining all of the advantages of the individual PC's.

DS90-10, -20 and -30

are all computers in a discrete, compact office design. All are the same size and fit under or beside a desk. The slanted front contains a disk drive and streamer, along with all the controls needed for normal operation.

The computer housing is all metal, eliminating outer interferences and resulting in a secure operation.

The computers are cooled by large, quiet fans.

Despite their small format, there are many expansion possibilities for the computers.

Several types of memory and backup units are available in the same format as the computer, intended for placement beside the computer.

DS90-21 and -31

are computers built for large systems with many users. The rack mounting makes it possible to configure the computers with different optional units such as 1 GByte disks, 2 GByte backup units and WORM disks.

The rack mounting has lockable front and back doors, and has plenty of room for installation with hidden cables.

Effective fans and filters mean that the computers can be placed in hostile environments such as a factory floor. A DS90-21 or -31 can be expanded with an expansion rack in the same format and design as the computer.

DS90-11

is a compact computer in a 19" rack mounting. It is normally complemented with a DU9OR disk drive. DS90-11 is intended for industrial systems in which it is mounted in a rack along with other equipment.

DS90-30	DS90-11	DS90-21	DS90-31
M68030 (1 or 2)	M68010	M68020 (1, 2, 3 or 4)	M68030 (1, 2, 3 or 4)
25 MHz	10 MHz	16.67 MHz	25 MHz
4	4	4	4
42	12	162	262
8 MByte	2 MByte	4 MByte	8 MByte
16 MByte	4 MByte	28 MByte	32 MByte (upgrades to 64 MByte)
3	2	2	3
-	-	2 (optional)	3 (optional)
150 MByte	65 MByte	150 MByte	150 MByte
2 GByte	2 GByte	4 GByte	8 GByte
One per processor	Yes	One per processor	One per processor
64 kByte per processor	-	32 kByte per processor	64 kByte per processor
60 MByte	60 MByte	60 MByte	60 MByte
5.25"/1.2 MByte	5.25"/1.2 MByte	5.25"/1.2 MByte	5.25"/1.2 MByte
4	-	6	25
2	3	3	2

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