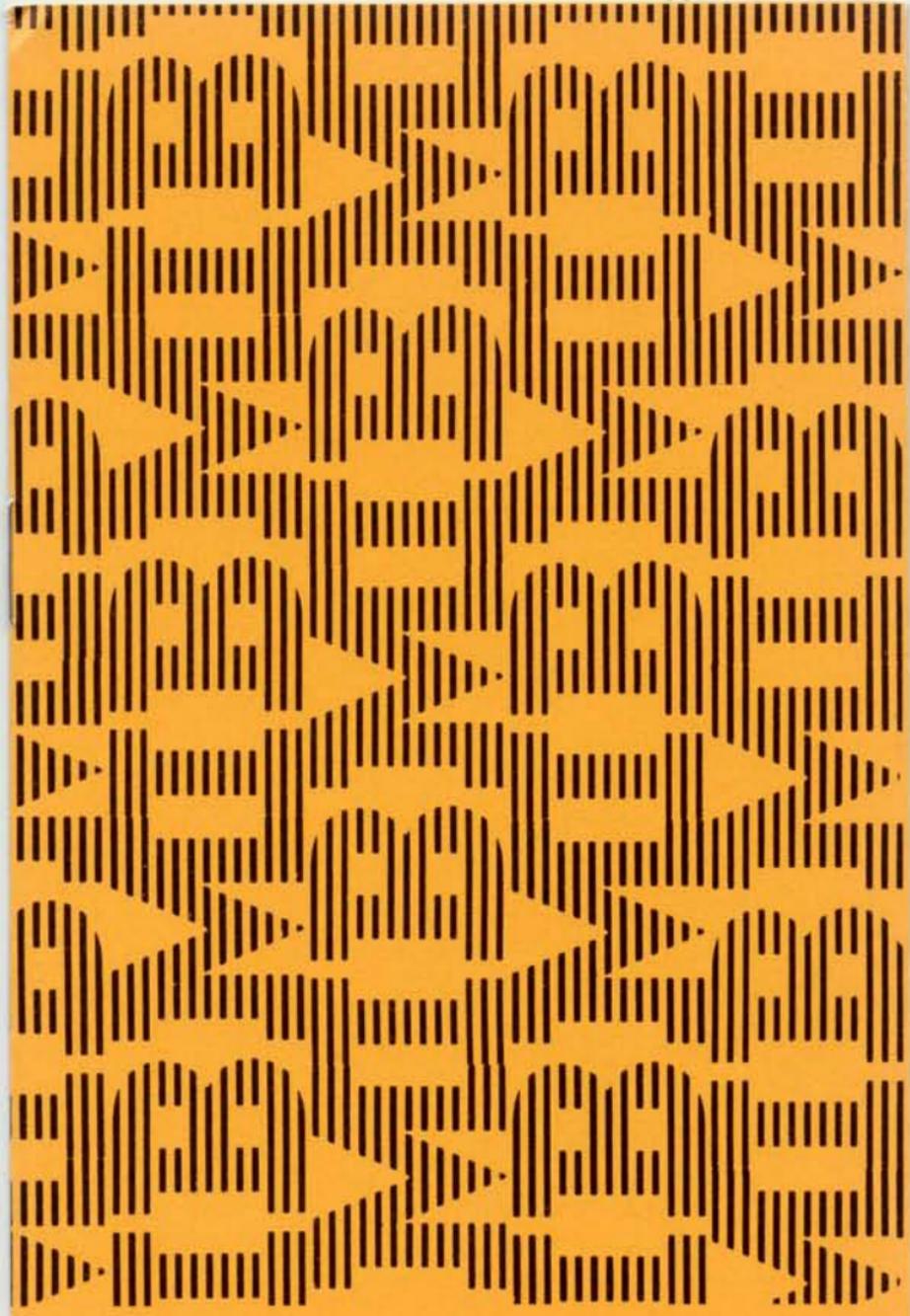


33333333

Update Announcement
Disk Subsystem



GENERAL

This brochure announces the IBM 3330 Model 11 and the IBM 3333 Model 11. It is also an update announcement of the IBM 3333/3330 Disk Subsystem.

PRODUCT DESCRIPTION

IBM 3330 Models 1, 2 and 11

The 3330 Models 1 and 11 disk storage modules consist of two drives. The 3330 Model 2 disk storage module consists of a single drive. Each drive has a comb-type access mechanism with a read/write head for each of 19 surfaces.

The average access time of all 3330 Models is 30 milliseconds. The disk rotation speed is 3600 rpm. The file logic is SLD 100 circuitry. Up to three 3330 modules in any combination of Models 1, 2 or 11 can be attached to the 3333 Model 1 or Model 11.

The 3330 Models 1 and 2 use 3336 Model 1 disk pack. The 3330 Model 11 uses a 3336 Model 11 disk pack.

IBM 3333 Models 1 and 11

The 3333 Models 1 and 11 contain two disk drives and provide an interface to the controlling units which are 3830 Model 2, 3145, 3158, 3168 with integrated storage control (ISC) 3125 Direct Disk Attachment (DDA) or 3135 integrated file adapter (IFA). On the 3125 DDA only one 3333 Model 1 and one 3330 Model 1 or Model 2 can be attached.

The 3333 Models 1 and 11 contain a controller function for itself and the additional drives. This is a standalone unit and can be located up to a maximum cumulative cable length of 200 feet from the controlling unit. The difference between 3333 Model 1 and 3333 Model 11 is in the disk drive capacity.

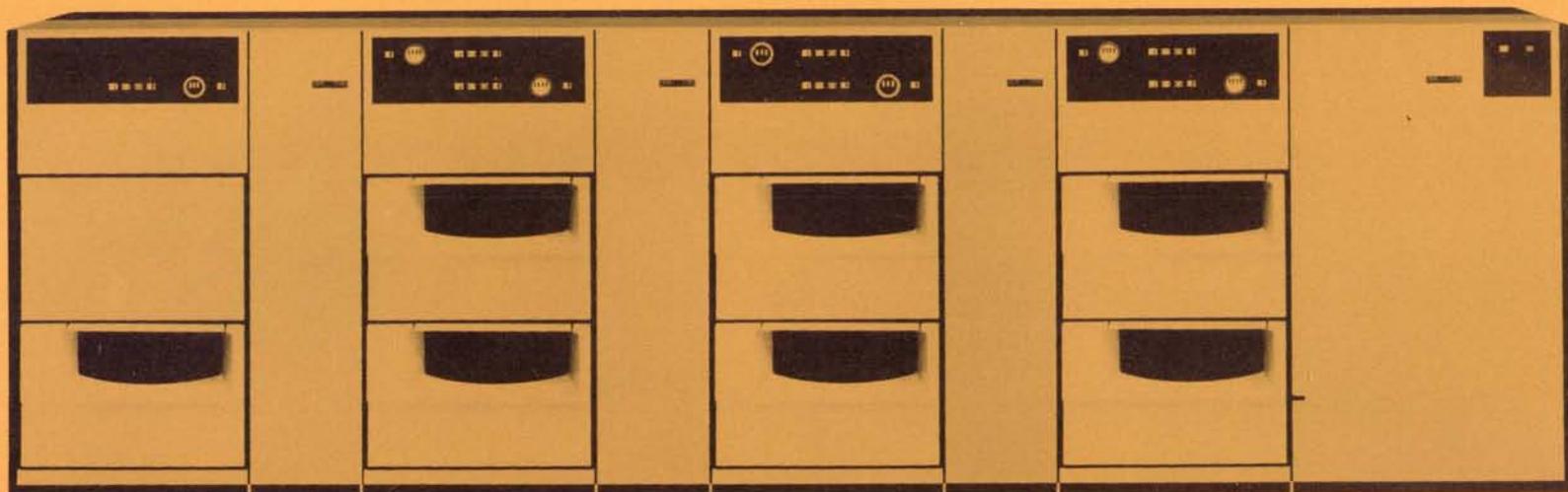
IBM 3830 Model 2

The 3830 Model 2 provides attachment capability for the 3333 Models 1 and 11 to the CPU. The 3830 Model 2 with 3333 Model 1 and 3330 Model 1 and 2 can be used on System /360 Models 85

and 195 and System /370 Models 135, 145, 155, 158, 165 and 168.

The 3830 Model 2 with 3333 Model 11 and 3330 Model 11 are available with System /370 Models 135, 145, 155-II, 158, 165-II and 168.

The control unit consists of monolithic writable control storage, arithmetic, logic hardware, a CE panel, power sequence controls and power supplies. Control of all operations is by a resident microprogram. The 3830 Model 2 uses MST-2, MST-4 and SLT circuitry.



GENERAL CHARACTERISTICS

	<i>IBM 3330 Model 1</i>	<i>IBM 3330 Model 11</i>	<i>IBM 3330 Model 2</i>
cylinders per pack	404	808	404
tracks per cylinder	19	19	19
maximum bytes/tracks	13.030	13.030	13.030
online capacity per drive	100 million bytes	200 million bytes	100 million bytes
disk drives per module	2	2	2
average random access time	30 millisecond	30 millisecond	30 millisecond
average for a single cylinder seek	10 millisecond	10 millisecond	10 millisecond
maximum data transfer rate	806 kilobytes/sec	806 kilobytes/sec	806 kilobytes/sec
disk rotation	16,7 millisecond	16,7 millisecond	16,7 millisecond

PRODUCT DESCRIPTION

(cont.)

IBM 3336 Models 1 and 11

The 3336 is a 12-disk pack. Protective disks are located at the top and bottom of the pack. The ten recording disks provide nineteen surfaces for data recording. The twentieth surface contains factory recorded information used to control servo-seeking, track-following, rotation position sensing and data clocking. The 3336 Model 1 pack has 404 primary cylinders plus seven alternates. The 3336 Model 11 has 808 primary cylinders plus seven alternates.

The 3336 Models 1 and 11 are not interchangeable. The 3336 disk pack is a purchase only device.

FEATURES

IBM 3333 Models 1 and 11

Error Correction Coding — ECC hardware is included in the 3333 unit to correct a burst of errors up to 11 bits in length on a single track. The rotational position sensing function allows the unit to interrupt the controlling system whenever the disk is at a given angular track position. This allows the system to specify an angular track position for data operation and then the unit can disconnect during the rotational latency period.

IBM 3830 Model 2

- Writable Control Storage (WCS) — 4000 fourty bit words of WCS for use in microprogramming, microdiagnostics, and control unit logging.
- Control Unit Retry — Facilities to recover from many control unit and file errors without intervention at the system level.
- Control Unit Logging — Storage subsystem error and statistical information, recorded in the control unit's writable control storage is periodically posted to OBR/SDR.

FEATURES

(cont.)

- Multiple Requesting Concept — Multiple request capability allows up to sixteen disconnect command chains per subsystem to be active in the control unit simultaneously.

IBM 3330/3333 Model 11

- Write Format Release — The Model 11 drive disconnects from the control unit while the drive writes zeros from the end of a format write operation to index.

SERVICE FEATURES

IBM 3830 Model 2, IBM 3333, Integrated Storage Control (ISC)

- Online Tests (OLT's) — Facilities are provided to allow maintenance programs to be run on the processor concurrent with customer operations.
- CE Panel — A CE Panel is available to initiate and interpret micro-diagnostics and display the status of important registers.
- Maintenance Analysis Procedures (MAP) are provided for the 3830, 3330 and 3333.

- An Integrated Maintenance/Theory of Operations Manual is provided.
- Error Detection/Recovery — Extensive error detection and recovery facilities have been incorporated in the storage facilities.
- Microdiagnostics — This is a group of diagnostics located on a magnetic disk cartridge and initiated from the 3830 and 3333 CE Panels or through OLTs.
- The 3830 Control Unit and Integrated Storage Control (ISC) con-

tain a device which provides read-only storage for the subsystem control program and non-resident subsystem diagnostics. The diagnostics can be called into control storage for malfunction isolation. The recording medium is an Interchangeable magnetic disk cartridge shipped with the control unit, or the system in which the ISC resides. New cartridges will be distributed to customer engineers whenever changes are made in the control program or the diagnostics.

OPTIONAL FEATURES

IBM 3830 Model 2

Integrated Storage Control (ISC)

- Two channel switching provides the ability for the storage facility to be shared by two channels.
- Two channel switch additional allows the storage facility to be shared by four channels.*
- 32 drive address feature allows four 3333 strings (maximum eight drives per string) to be attached to one 3830 Model 2 or ISC. (This feature adds 2K of writable control storage).

- String Switch Attachment feature is a companion feature to the 3333 String Switch feature.

* Note - Two channel switch additional feature is not available for ISC's.

IBM 3333 Model 1 and 11

- String Switch feature allows one 3333 string to be shared by two controlling units.

FIELD CONVERSION

The 3830 Model 1 can be field converted to a 3830 Model 2.

The 3333 Model 1 and 3330 Model 1 can be field converted to Model 11. The 3330 Model 2 cannot be converted to a 3330 Model 11.

FEATURES SUPPORTED

- System Generation
- IPL/NIP
- Shared DASD
- Expanded Sense Bytes
- Data Management (SAM, PAM, DAM and ISAM)
- SYSRES, Job Queue
- Error Recovery Procedures, including OBR/SDR Support

PROGRAM SUPPORT

IBM 3330 Models 1 and 2 IBM 3333 Model 1

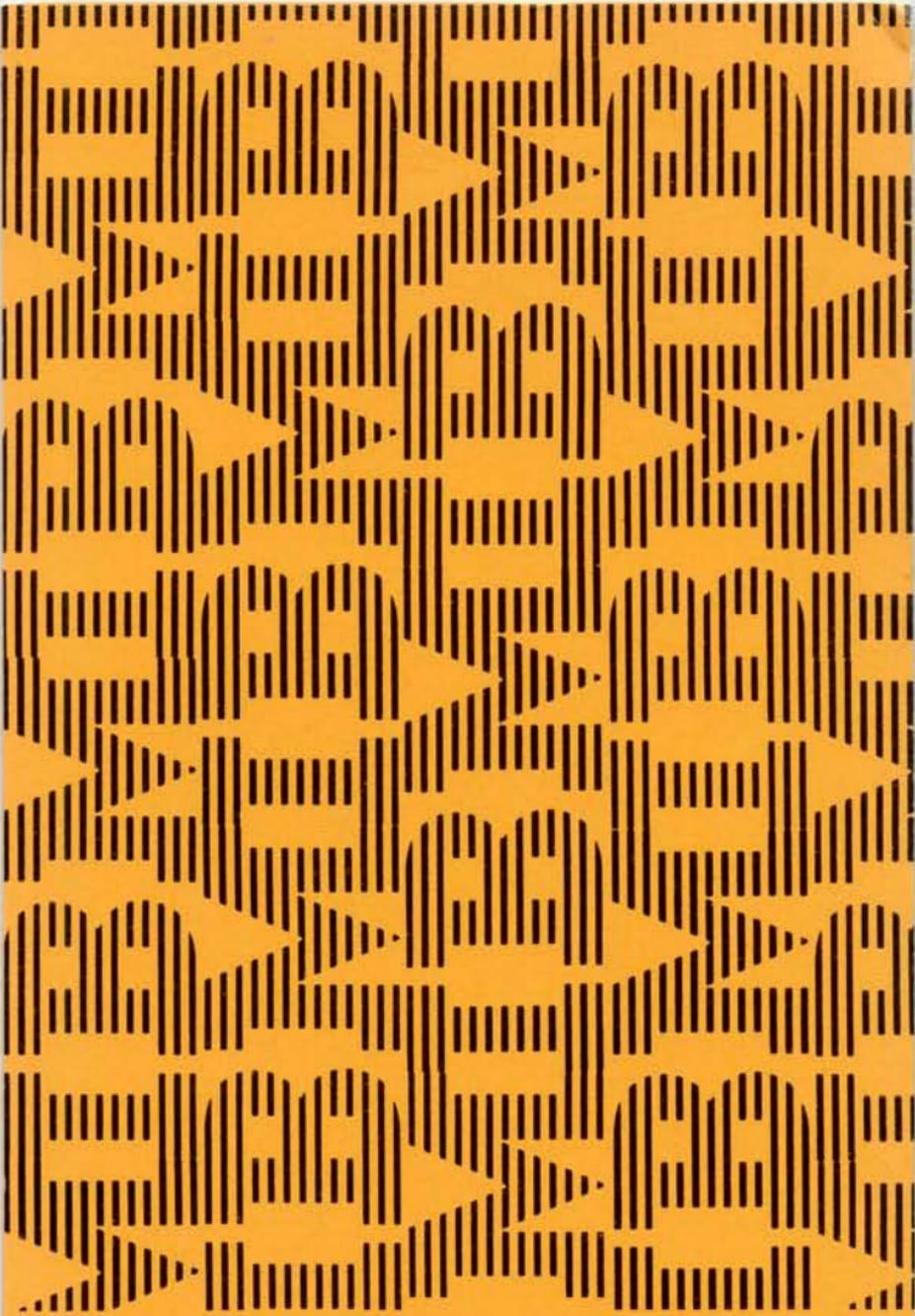
Program support for the 3330 Models 1 and 2 and 3333 Model 1 is provided in OS /360 (MFT and MVT) as an extension of the presently available 2314 DASD support.

Program Support for the 3330 Model 11 and 3333 Model 11 is provided in the following System Control Program.

- Release 3 of VS1
- ICR to Release 1 of VS2 (SVM Support)
- Release 2 of VS2 (MVM Support)
- ICR to VM /370

CE CAREER PATH

Each unit assumes the CE career path of the host system.



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