IBM

4381
Processor
Model Group 3

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4381 MODEL GROUP 3

The IBM 4381 MG3 is a new member of the 4381 processor family.

4381 MG3 DESCRIPTION

The 4381 Model Group 3 provides expanded function and a new range of performance for the announced familiy of 4381 processors. It meets the growth requirements of the 4381 customer by providing a processor with an internal performane up to 1.7 times the 4381 Model Group 2.

The 4381 Model Group 3 is a dual Processor (DP) which essentially adds another processor to the 4381 base processor. The increased performance is achieved because of dual data flow sharing the same storage.

The DP permits concurrent execution of customer jobs under the suppervision of a multiple processor operating system.

Highlights

- — 8,16,24 or 32 MB of processor storage.
- — Two integrated instruction Processing Units (PU 0 and PU 1)
- — Chache storage of 2x32 KB.
- — Control storage of 2x128 KB.
- — Internal processor cycle time of 68 nanoseconds.
- — Processing speed up to 1.7 times the speed of a 4381 Model Group 2 with an equivalent memory size and I/O's.
- — Twelve standard, and six optional channels.
- — Eight 3 MB/second data streaming channels.
- — 48 system power interface control unit positions.

Dual Processor (DP)
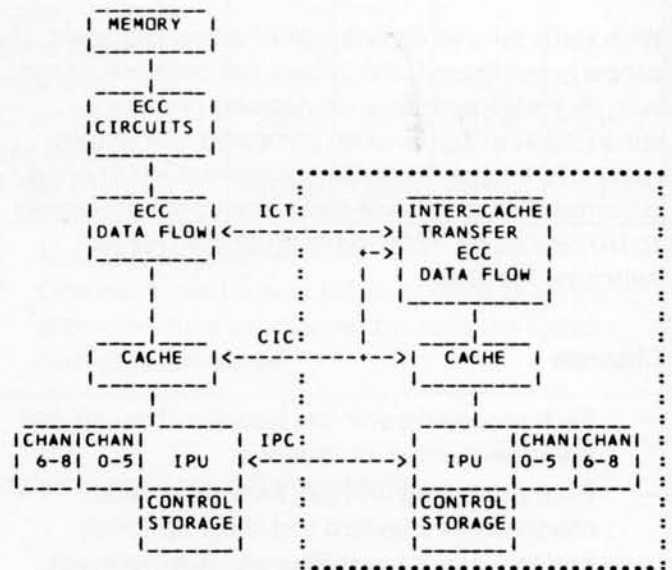
CIC = Cross Interrogate Controls
ECC = Error Checking and Correction
ICT = Inter-Cache Transfer
IPC = Inter-Processor Communications

Dual Processor Considerations

A dual processor has two integrated instruction processing units operating under a single control program, each of which has access to a shared main storage an its own set of channels. A dual processor cannot be partitioned into two distinct, concurrently operating, uniprocessor systems.

A dual processor is similar to a dyadic processor, but there are differences. The key difference is that a dual processor doesn't have a system controller or an external data controller. Therefore, on a dual processor, channels are directly attached to each processor and channel set switching is not provided.

There are no programming differences compared to a dyadic processor and floating channels are supported when running a 4381 MG3.

With some failures on one side of a dual processor, if properly configured, the system can continue to run with degraded performance, thereby providing enhanced availability when compared to a uniprocessor. To ensure maximum system availability, the customer should provide paths from both processors to I/0 devices by installing appropriate channel-switching facilities.

Channels

— Each processing unit has separate channels and the same number of channels.
— Each processing unit can have up to nine channels (six standard and three optional).
— The channels on each side are identified as 0 through 8.
— Channel operating rate and modes of operation are the same for both processing units.
— UCW's (S/370) and UCB's (S/370 XA) for each processing unit must be configured separately.
— I/0's should be attached in a symmetrical fashion, which will allow the I/0 acces from an operational processor when the other fails or is off-line for any reason if they have alternate physical paths to the active processing unit.

4381 Processors Comparison

4381	MG1	MG2	MG3	
Main Storage (MB)	4,8,16	4,8,16	8,16,24,32	
			PU 0	PU 1
Control Storage	112KB	112KB	128KB	128KB
Cache Storage	8KB	32KB	32KB	32KB
Channels —Speed when in Burst Mode:				
Chan 0 *	2MB	2MB	2MB	2MB
Chan 1 through 4	3MB	3MB	3MB	3MB
Chan 5 **	2MB	2MB	2MB	2MB
—Speed when in Byte Mode: Single Byte				
Chan 0, and 5	30KB	30KB	24KB	24KB
Four Byte				
Chan 0, and 5	120KB	120KB	96KB	96KB

* Multiplexer Channel
** Channel 5 can be selected to operate as a byte or Block multiplexer channel through the system configuration screen.

Programming Support/Compatibility

— Operation in System /370 and System /370-XA modes.
— Supported by MVS/370 and VM/SP with or without the high performance option in System /370 mode, and MVS/XA and VM/XA migration aid in System /370-XA mode.
— Support of guest operating systems including DOS/VSE and OS/VS1 is provided by VM/SP with or without VM/SP high performance option and by the VM/XA migration aid.

4381 Operator's Console

The 4381 MG3 standard Console/Printer Adapter
supports the attachment of either a 3278-2A/
3279-2C or the new IBM 3205 as a display console.

At 4381 MG3 power on time, the processor deter-
mines the console display type attached and loads
the appropriate translation microcode. As a result,
other displays attached to the Console/Printer Adapter
must be of the same family.

The new IBM 3205 display console cannot be inter-
mixed with 3278-2A/3279-2C displays.

The operator control panel (OCP) for the new 3205 is
a separate box no longer included in the keyboard. In
this case, since the console distance to the CPU is not
physically limited by the OCP cable lenght anymore
it must be pointed out that console is a service item
and should be installed within the computer room
together with the OCP at the OCP limited distance.

The Console/Printer Adapter supports the attachment
of 3268-2 and 3287-1,2,1C printers.

Installation

The projected processor net installation time is 7 h.
No special requirements such as water cooling or
unusual environment are required to install the
machine.

Optional Features

— 6 additional channels.
— Channel to channel adapter (CTCA). The CTCA
   allows high speed data transmission to or from
   one processor that has a standard block multi-
   plexer channel.

Model Conversion

This new model is field upgradeable from Model Group 2. This provides the least disruptive path for 4381-MG2 customers who require expansion.

Estimated model conversion time from MG2 to MG3 is from 8 to 10 hours (2 CE's) , depending on features. This upgrade can be divided into two segments.

Annouced I/0

The 4381 MG3 will support the attachment of all I/O devices that currently attach to the various models of the 4341 and to the 4381 MG1 and MG2 that are currently in the IBM Sales Manual. The 4381 MG3, as the previous MG1 and MG2, does not support the 3880 equipped with the speed matching buffer.

Maintenance Facilities/PA/RSF

The 4381 facilities are the same as those provided with MG1 and MG2.

Customer use of PA and "Send Service Information" facilities are key elements of the Maintenance Strategy.

Support Structure

The support structure for the 4381 MG3 will be the one already established for the 4381 MG1 and MG2:
— Hardware Central Service (HCS)
— Service Planning and Support (SP&S)

Early Support Programm (ESP)

There will be an ESP for the 4381 MG3. It will consist of 11 installations (3 internals). 6 of them will be new production machines and the remaining 5 field upgraded.

IBM Maintenance Service

The IBM Maintenance Agreement allows IBM CE to provide optimal service and system availability.

— CE fully assumes responsibility to keep this machine in good working order.
— The IBM Maintenance Agreement is available at planable cost with minimum administrative impact to the customer.
— The IBM Maintenance Agreement is the best way to protect customers investments.

IBM CE will assist in the marketing of the IBM Maintenance Agreement.

CE Career Path

The 4381 MG3 processor complex is assigned to the "Account Systems" Career Path.

Manufacturing Locations

—˙ Endicott   USA
— Sumare   Brasil
— Valencia   Spain