**Note: This API calls are shared between DOS and Win16 personality.**

DPMI is a shared interface for DOS applications to access Intel 80286+ CPUs services. DOS DMPI host provides core services for protected mode applications. Multitasking OS with DOS support also provides DMPI in most cases. Windows standard and extended mode kernel is a DPMI client app. Standard and extended mode kernel differs minimally and shares common codebase. Standard Windows kernel works under DOSX extender. DOSX is a specialized version of 16-bit DPMI Extender (but it is standard DPMI host). Standard mode is just DPMI client, exnhanced mode is DPMI client running under Virtual Machime Manager (really, multitasker which allow to run many DOS sessions). Both modes shares DPMI interface for kernel communication. The OS/2 virtual DOS Protected Mode Interface (VDPMI) device driver provides Version 0.9 DPMI support for virtual DOS machines. Win16 (up to Windows ME) provides Version 0.9 DPMI support. Windows in Standard Mode provides DPMI services only for Windows Applications, not DOS sessions.

DPMI host often merged with DPMI extender. Usually DPMI extender provide DPMI host standard services and DOS translation or True DPMI services.

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# Int 31H, AH=01H, AL=00H

## Version

0.9

## Brief

Allocate DOS Memory Block

## Input

```
AX = 0100H
BX = number of (16-byte) paragraphs desired
```

## Return

```
if function successful
Carry flag = clear
AX = real mode segment base address of allocated block
DX = selector for allocated block
```

```
if function unsuccessful
Carry flag = set
AX = error code
0007H   memory control blocks damaged (also returned by DPMI 0.9 hosts)
0008H   insufficient memory (also returned by DPMI 0.9 hosts).
8011H   descriptor unavailable
BX = size of largest available block in paragraphs
```

## Notes

Allocates a block of memory from the DOS memory pool, i.e. memory below the 1 MB boundary that is controlled by DOS. Such memory blocks are typically used to exchange data with real mode programs, TSRs, or device drivers. The function returns both the real mode segment base address of the block and one or more descriptors that can be used by protected mode applications to access the block.

If the size of the block requested is greater than 64 KB (BX > 1000H) and the client is a 16-bit program, contiguous descriptors are allocated and the base selector is returned. The consecutive selectors for the memory block can be calculated using the value returned by the Get Selector Increment Value function (Int 31H Function 0003H). Each descriptor has a limit of 64 KB, except for the last which has a limit of blocksize MOD 64 KB.

If the DPMI host is 32-bit, the client is 16-bit, and more than one descriptor is allocated, the limit of the first descriptor will be set to the size of the entire block. Subsequent descriptors have limits as described in the previous Note. 16-bit DPMI hosts will always set the limit of the first descriptor to 64 KB even when running on an 80386 (or later) machine.

When the client is 32-bit, this function always allocates only one descriptor.

Client programs should never modify or free any descriptors allocated by this function. The Free DOS Memory Block function (Int 31H Function 0101H) will deallocate the descriptors automatically.

The DOS allocation function (Int 21H Function 48H) is used.

Refer to the rules for descriptor usage in Appendix D.

## See also

## Note

Text based on http://www.delorie.com/djgpp/doc/dpmi/

| **DPMI** | |
|---|---|
| Process manager | **INT 2FH** 1680H, 1687H |
| Signals | |
| Memory manager | |
| Misc | **INT 2FH** 1686H, 168AH |

| **DPMI** | |
|---|---|
| Devices | |

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