

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=05H, AL=09H

Version

1.0

Brief

Map Conventional Memory in Memory Block

Input

```
AX = 0509H
ESI = memory block handle
EBX = offset within memory block of page(s) to be mapped (must be page-
aligned)
ECX = number of pages to map
EDX = linear address of conventional memory (must be page-aligned)
```

Return

```
if function successful
Carry flag = clear

if function unsuccessful
Carry flag = set
AX = error code
8001H   unsupported function (Conventional Memory Mapping Capability not
supported)
8003H   system integrity (invalid conventional memory address)
8023H   invalid handle (in ESI)
8025H   invalid linear address (specified range is not within specified
block, or EBX/EDX is not page aligned)
```

Notes

Aliases linear addresses below the 1 MB boundary onto the linear addresses of a memory block previously allocated with Int 31H Function 0504H.

16-bit DPMI hosts will not support this function. A 16-bit client of a 32-bit DPMI 1.0 host can use this function.

Support of this call by 32-bit DPMI hosts is optional. Application programs or DOS Extenders which require this call in order to run are not DPMI Compliant.

Any committed or mapped pages resided in the linear address range that is being mapped into will be uncommitted or unmapped automatically by the host.

A client may only map conventional memory that it already owns; i.e. memory which the client previously allocated with Int 31H Function 0100H or by calling DOS's Int 21H Function 48H directly via the translation services.

All pages created by this call have the mapped bit (bit 2) set in the attributes returned by the Get Page Attributes function (Int 31H Function 0506H).

DPMI hosts that do not implement virtual memory can support this function by simply copying page table entries. The entries must be marked as mapped so that the host knows not to free up those physical pages when the memory block is freed.

DPMI hosts that provide virtual memory must implement some form of page aliasing in order to support this function.

The function can provide a large contiguous memory space without virtual memory support.

Implementors of DPMI hosts which do not provide virtual memory are encouraged to support this function. Without this function, conventional memory may be inaccessible to a 32-bit nonsegmented client, because the client may need contiguous linear memory for its code and data. 32-bit clients can always guarantee that conventional memory is not wasted with the following strategy:

```
  Call DOS to allocate any free conventional memory
  If the DPMI host supports virtual memory, call the Mark Real Mode Region
Pageable function (Int 31H Function 0602H) to ensure that the host has not
locked down conventional memory.
  If the host does not support virtual memory but supports the Map
Conventional Memory function (Int 31H Function 0509H), allocate a memory
block with uncommitted pages, then use Function 0509H to make the physical
memory allocated below 640 KB addressable in the memory block, and therefore
useable by the 32-bit application program.
```

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
Devices	

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