



Note: This API call is for DOS and Win16 personality only. Use [Family API](#) for portability.

2018/09/07 05:04 · prokushev · [0 Comments](#)

Int 21H, AH=26H

Version

1 and higher

Brief

CREATE NEW PROGRAM SEGMENT PREFIX

Family API

Input

AH = 26h
DX = segment at which to create PSP (see #01378)

Return

Return: AL destroyed

Notes

new PSP is updated with memory size information; INTs 22h, 23h, 24h taken from interrupt vector table; the parent PSP field is set to 0

(DOS 2+) DOS assumes that the caller's CS is the segment of the PSP to copy

BUG: DR DOS 6.0 original releases 05/1991 & 08/1991 had a problem where the segment from which the PSP was copied was incorrect so that the PSP was not filled correctly and did not contain the command tail. The DR DOS 6.0 BDOS patch "PAT312" English (1992/01/07, XDIR /C: A0C6h) and later "full" rebuilds fix this problem (see INT 21/AX=4452h).

Format of Program Segment Prefix (PSP):

| Offset | Size | Description |
|--------|-----------|---|
| 00h | 2 BYTEs | INT 20 instruction for CP/M CALL 0 program termination the CDh 20h here is often used as a signature for a valid PSP |
| 02h | WORD | segment of first byte beyond memory allocated to program |
| 04h | BYTE | (DOS) unused filler, (OS/2) count of fake DOS version returns |
| 05h | BYTE | CP/M CALL 5 service request (FAR CALL to absolute 000C0h) BUG: (DOS 2+ DEBUG) PSPs created by DEBUG point at 000BEh |
| 06h | WORD | CP/M compatibility-size of first segment for .COM files |
| 08h | 2 BYTEs | remainder of FAR JMP at 05h |
| 0Ah | DWORD | stored INT 22 termination address |
| 0Eh | DWORD | stored INT 23 control-Break handler address |
| 12h | DWORD | DOS 1.1+ stored INT 24 critical error handler address |
| 16h | WORD | segment of parent PSP |
| 18h | 20 BYTEs | DOS 2+ Job File Table, one byte per file handle, FFh = closed |
| 2Ch | WORD | DOS 2+ segment of environment for process (see #01379) |
| 2Eh | DWORD | DOS 2+ process's SS:SP on entry to last INT 21 call |
| 32h | WORD | DOS 3+ number of entries in JFT (default 20) |
| 34h | DWORD | DOS 3+ pointer to JFT (default PSP:0018h) |
| 38h | DWORD | DOS 3+ pointer to previous PSP (default FFFFFFFFh in 3.x) used by SHARE in DOS 3.3 |
| 3Ch | BYTE | DOS 4+ (DBCS) interim console flag (see AX=6301h) Novell DOS 7 DBCS interim flag as set with AX=6301h (possibly also used by Far East MS-DOS 3.2-3.3) |
| 3Dh | BYTE | (APPEND) TrueName flag (see INT 2F/AX=B711h) |
| 3Eh | BYTE | (Novell NetWare) flag: next byte initialized if CEh (OS/2) capabilities flag |
| 3Fh | BYTE | (Novell NetWare) Novell task number if previous byte is CEh |
| 40h | 2 BYTEs | DOS 5+ version to return on INT 21/AH=30h |
| 42h | WORD | (MSWindows3) selector of next PSP (PDB) in linked list Windows keeps a linked list of Windows programs only |
| 44h | WORD | (MSWindows3) "PDB_Partition" |
| 46h | WORD | (MSWindows3) "PDB_NextPDB" |
| 48h | BYTE | (MSWindows3) bit 0 set if non-Windows application (WINOLDAP) |
| 49h | BYTE | unused by DOS versions \leq 6.00 |
| 4Ch | WORD | (MSWindows3) "PDB_EntryStack" |
| 4Eh | 2 BYTEs | unused by DOS versions \leq 6.00 |
| 50h | 3 BYTEs | DOS 2+ service request (INT 21/RETF instructions) |
| 53h | 2 BYTEs | unused in DOS versions \leq 6.00 |
| 55h | 7 BYTEs | unused in DOS versions \leq 6.00; can be used to make first FCB into an extended FCB |
| 5Ch | 16 BYTEs | first default FCB, filled in from first commandline argument overwrites second FCB if opened |
| 6Ch | 16 BYTEs | second default FCB, filled in from second commandline argument overwrites beginning of commandline if opened |
| 7Ch | 4 BYTEs | unused |
| 80h | 128 BYTEs | commandline / default DTA. command tail is BYTE for length of tail, N BYTEs for the tail, followed by a BYTE containing 0Dh |

Notes: in DOS v3+, the limit on simultaneously open files may be increased by allocating memory for a new open file table, filling it with FFh, copying the first 20 bytes from the default table, and adjusting the pointer and count at 34h and 32h. However, DOS will only copy the first 20 file handles into a child PSP (including the one created on EXEC).

in an OS/2 DOS box, values of D0h-FEh in the open file table indicate device drivers

network redirectors based on the original MS-Net implementation use values of 80h-FEh in the open file table to indicate remote files; Novell NetWare also uses values from FEh down to 80h or one more than FILES= (whichever is greater) to indicate remote files (except on OS/2, where it uses CFh down to 80h)

MS-DOS 5.00 incorrectly fills the FCB fields when loading a program high; the first FCB is empty and the second contains the first parameter

some DOS extenders place protected-mode values in various PSP fields such as the "parent" field, which can confuse PSP walkers. Always check either for the CDh 20h signature or that the suspected PSP is at the beginning of a memory block which owns itself (the preceding paragraph should be a valid MCB with "owner" the same as the suspected PSP).

Novell NetWare updates the fields at offsets 3Eh and 3Fh without checking that a legal PSP segment is current; see AH=50h for further discussion

for 4DOS and Windows95, the command tail may be more than 126 characters; in that case, the length byte will be set to 7Fh (with an 0Dh in the 127th position at offset FFh), and the first 126 characters will be stored in the PSP, with the entire command line in the environment variable CMDLINE; under at least some versions of 4DOS, the byte at offset FFh is *not* set to 0Dh, so there is no terminating carriage return in the PSP's command tail.

BUG: When shelling out from the Borland Pascal 7.00 IDE, overly-long command lines will not be delimited by a 0Dh character, and the length byte is set to 80h! A workaround is to always patch in a 0Dh at the last position of the command line buffer before scanning the command line.

Format of environment block:

| Offset | Size | Description |
|-------------|---------|---|
| 00h | N BYTES | first environment variable, ASCIZ string of form "var=value" |
| | N BYTES | |
| | ... | |
| | N BYTES | last environment variable, ASCIZ string of form "var=value" |
| | BYTE | 00h |
| —DOS 3.0+ — | | |
| ... | WORD | number of strings following environment (normally 1) |
| | N BYTES | ASCIZ full pathname of program owning this environment other strings may follow |

AH=4Bh,AH=50h,AH=51h,AH=55h,AH=62h,AH=67h

Note

Text based on [Ralf Brown Interrupt List Release 61](#)

| DOS API | |
|-----------------------------|--|
| Process manager | INT 20H, INT 21H : 00H, 25H, 26H, 31H, 34H, 35H, 4BH, 4CH, 4DH, 50H, 51H, 52H, 55H, 62H, INT 22H, INT 27H, INT 28H |
| File manager | INT 25H, INT 26H, INT 21H : 0DH, 0EH, 0FH, 10H, 11H, 12H, 13H, 14H, 15H, 16H, 17H, 19H, 1AH, 1BH, 1CH, 21H, 22H, 23H, 24H, 27H, 28H, 29H, 2EH, 2FH, 32H, 3305H, 36H, 39H, 3AH, 3BH, 3CH, 3DH, 3EH, 3FH, 40H, 41H, 42H, 4300H, 4301H, 45H, 45H, 46H, 4EH, 4FH, 54H, 56H, 5700H, 5701H, 5AH, 5BH, 5c00H, 5c01H, 60H, 67H, 68H, 6900H, 6901H, 6AH, 6CH |
| Character Device I/O | INT 29H, INT 21H : 01H, 02H, 03H, 04H, 05H, 06H, 07H, 08H, 09H, 0AH, 0BH, 0AH, 0CH, 5D07H, 5D08H, 5D09H, 5D0AH |
| Signals | INT 23H, INT 24H, INT 21H : 3300H, 3301H, 3302H |
| Memory manager | INT 21H : 48H, 49H, 4AH, 5800H, 5801H, 5802H, 5803H |
| Date and Time | INT 21H : 2AH, 2BH, 2CH, 2DH |
| Misc | INT 21H : 30H, 3306H, 3700H, 3701H, 3702H, 3703H, 59H |
| NLS | INT 21H : 3303H, 3304H, 3800H, 3801H, 6300H, 6301H, 6301H, 6500H, 6501H, 6502H, 6503H, 6504H, 6505H, 6506H, 6507H, 6520H, 6521H, 6522H, 6523H, 65A0H, 65A1H, 65A2H, 6601H, 6602H |
| Devices | INT 21H : 4400H, 4401H, 4402H, 4403H, 4404H, 4405H, 4406H, 4407H, 4408H, 4409H, 440AH, 440BH, 440CH, 440DH, 440EH, 440FH, 4410H, 4411H, 53H |
| Network | INT 21H : 5E00H, 5E01H, 5E02H, 5E03H, 5E04H, 5E05H, 5F00H, 5F01H, 5F02H, 5F03H, 5F04H, 5F05H, 5F07H, 5F08H |
| osFree Macro Library | |
| Video I/O | @SetMode @SetCurSz @SetCurPos @GetCur @SetPage @ScrollUp @ScrollDn @Scroll @GetChAtr @PutChAtr @PutCh @SetPalet @SetColor @SetDot @GetDot @WrtTTY @VideoState @GetMode @GetDisplay @GetVideoState @GetEGAInfo @Cls |
| Hardware info | @Equipment @MemSize |
| Serial I/O | @AuxInit @AuxSendChar @AuxRecieveChar @AuxStatus |
| Tape I/O | @TapeOn @TapeOff @TapeRead @TapeWrite |
| Keyboard I/O | @KbdStatus @CharIn @CharPeek |
| Printer I/O | @PrnPrint @PrnInit @PrnStatus |
| Disk I/O | @DskReset @DskStatus @DskRead @DskWrite @DskVerify @DskFormat |
| Date and Time | @SetTime @GetTime |
| Mouse | @MouInit @MouShowPointer @MouStatus @MouSetPos @MouSetMickey @MouRegion |
| Memory manager | @ModBlok SET_BLOCK |

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| Family API | | |
|------------|-----------------|--|
| DOS | Process Manager | DosBeep DosExit DosSleep DosExecPgm |
| | File Manager | DosChDir DosChgFilePtr DosClose DosDelete DosDupHandle DosMkDir DosMove DosQCurDir DosQCurDisk DosSetFileMode DosOpen DosQFileInfo DosRead DosQFileMode DosQFSInfo DosQVerify DosRmdir DosSelectDisk DosFindClose DosFindFirst DosFindNext DosSetFileInfo DosSetVerify DosWrite DosFileLocks DosSetFHandState DosNewSize DosBufReset DosQFHandState DosSetFSinfo DosShutdown |
| | Memory Manager | DosFreeSeg DosSubAlloc DosSubFree DosSubSet DosAllocHuge DosAllocSeg DosReallocHuge DosReallocSeg DosGetHugeShift DosCreateCSAlias |
| | NLS | DosCaseMap DosGetCtryInfo DosGetDBCSEv DosSetCtryCode DosGetCollate DosGetMessage DosInsMessage DosPutMessage |
| | Date and Time | DosSetDateTime DosGetDateTime |
| | Devices | DosDevConfig DosDevIOct1 DosDevIOct2 |
| | Signals | DosHoldSignal DosSetSigHandler |
| | Misc | BadDynLink DosGetEnv DosGetMachineMode DosGetVersion DosError DosErrClass DosSetVec |
| KBD | | KbdCharIn KbdFlushBuffer KbdGetStatus KbdSetStatus KbdStringIn KbdPeek |
| VIO | | VioGetBuf VioGetConfig VioGetCurPos VioGetCurType VioGetPhysBuf VioReadCellStr VioReadCharStr VioScrollUp VioScrollDn VioScrollLf VioScrollRt VioScrUnLock VioSetCurPos VioSetCurType VioSetMode VioGetMode VioShowBuf VioWrtCellStr VioWrtCharStr VioWrtCharStrAtt VioWrtNAttr VioWrtNCell VioWrtNChar VioWrtTTY VioScrLock VioPopUp |
| Tools | | BIND |
| Modules | | DOSCALLS.DLL VIOCALLS.DLL KBDCALLS.DLL MSG.DLL |
| Libraries | | API.LIB OS2386.LIB FAPI.LIB DOSCALLS.LIB SUBCALLS.LIB |

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Last update: **2024/05/02 03:39**

