

PCT.EXE is a program that permits you to switch processors, turn caching on and off, and test a number of processor status conditions. PCT.EXE works with or without the EXPRESS.SYS driver.

When included in a batch file, PCT commands which query status set the ErrorLevel to either 0 (tested condition true) or 1 (tested condition false). This permits setting up conditional branch operations within the batch process.

When entered as commands statements, PCT.EXE commands can be combined, as in "PCT 286 ON", which simultaneously activates the 286 Express Card's processor and turns caching ON.

#### Processor Switching

PCT 286 Activates the 286 Express Card and its 80286 processor.

PCT 88 Activates your system's original 8088 processor and deactivates the 286 Express Card.

PCT ALT Instructs the system to use the alternate I/O address. If the alternate I/O address is being used, the ALT parameter must always be included as part of other command statements. For example, you can't just type "PCT 286" to switch to the faster processor; you must type "PCT ALT 286".

#### Processor Status

PCT 286? Displays a status message that tells which processor is presently active (e.g., "Now running on the 80286"). When this command is included in a batch file, the ErrorLevel is set to 0 if the 80286 is active.

PCT 88 Displays a status message that tells which processor is presently active (e.g., "Now running on the 8088"). When this command is included in a batch file, the ErrorLevel is set to 0 if the 8088 is active.

#### Cache Switching

PCT ON Turns memory caching ON.

PCT OFF Turns memory caching OFF.

Typically, you will only want to run in the slower non-cached mode when you are running software that won't tolerate memory caching.

#### Cache Status

PCT ON? Displays a status message that tells if memory caching is active. When this command is included in a batch file, the ErrorLevel is set to 0 if caching is ON

PCT OFF? Displays a status message that tells if memory caching is

inactive. When this command is included in a batch file, the ErrorLevel is set to 0 if caching is OFF.

#### Other System Status

- PCT N? Tests the equipment byte to see if a math co-processor is installed. When included in a batch file, the ErrorLevel is set to 0 if a math co-processor is present.
- PCT N?? Tests the equipment byte and the co-processor hardware and indicates if a math co-processor is installed.
- When included in a batch file, the ErrorLevel is set to 0 if a math co-processor is present.
- PCT G? Tests to see if the GACD compatible driver (EXPRESS.SYS) has been loaded and appended to DOS> When included in a batch file, the error level is set to 0 if the driver is present.
- PCT ?? Displays the system startup message. This message provides the system status of caching, indicates which (if any) math co-processors are installed, and indicates which processor is presently active.
- PCT ? Lists all available options.

#### Using a "Hot Key" to Switch Processors

The EXPRESS.SYS driver included on the distribution diskette automatically enables the 80286 processor following boot-up unless you have entered the parameter 88 in the driver's command line.

The device driver also allows you to use "Hot Keys" on the keyboard to switch back and forth between modes. The processor "Hot Key" combinations are the ALT> or ALT< keys, pressed simultaneously.

The "Hot Keys" are normally disabled; you must list the CPU parameter as part of the CONFIG.SYS file's DEVICE statement to enable them.

Press	To
ALT>	Activate 80286 processor
ALT<	Activate 8088 processor

You may experience problems if you switch processors while in an application. Because of the potential for problems, we strongly suggest that you switch processors only at the DOS prompt.

Here is what causes the problem.

When an application loads, it reads the equipment byte for the current environment and sets a flag that indicates whether or not a math co-processor is present. If your system has the same environment on both sides (no math co-processors, or both and 80287 and an 8087), there is no problem. But if you have only one math co-processor and you switch environments from within the application, the equipment byte is not re-read, so the application will have incorrect information. If your

application then attempts to use the non-existent math co-processor, it may "hang", lose data, or provide inaccurate results.

## Caching Software

Some programs won't run with memory caching because they are operating faster than they expect to. Memory caching is a technique that avoids the performance penalty of having to access main memory for a piece of information your program needs. It involves anticipating the particular data or program code your application program is going to need again, and keeping it in the 286 Express Card's 8K byte cache memory. Then it is immediately available, resulting in substantially faster processing. Because of performance improvements, you will definitely want to run with memory caching enabled whenever you can. However, this is not always possible. If you find that some of your applications or utilities won't support memory caching, you have a number of choices, all of which are described below.

### Using a "Hot Key" to Switch Caching

The EXPRESS.SYS driver included on the distribution diskette automatically turns caching on following boot-up unless you have entered the parameter OFF in the EXPRESS.SYS command line.

EXPRESS.SYS also includes a "Hot Key" routine that lets you turn caching on and off from the keyboard. The "Hot Key" combination is the ALT and right hand SHIFT keys, pressed simultaneously. Each time this key combination is detected, caching is toggled from active to inactive, or vice versa.

The "Hot Keys" is normally disabled; you must list the CACHE parameter as part of the CONFIG.SYS file's DEVICE statement to enable it.

### Using Program Code to Switch Caching

If you are developing applications software that will execute when the 286 Express Card is active, you may need to turn caching on or off at certain points in the program. We have provided a source code file (CACHE.ASM) on the distribution diskette that shows you the type of code needed.

### Using a Batch File to Switch Caching

Sometimes caching must be turned off until a particular event occurs. For example, for some clock/calendar software, caching must be disabled until the clock has been set. Otherwise, there is a timing conflict: sometimes the clock and set, and sometimes it doesn't. For problems like this, include PCT statements in a batch file as shown below to turn caching on and off.

Note that PCT statements should be included twice in the AUTOEXEC.BAT file: Once to turn it off and again to turn it back on.

AUTOEXEC.BAT file

```
PCT OFF          (Turns caching OFF)
DOSTIME          (Sets the clock)
other commands
```

.  
. .  
.

PCT ON (Turns caching ON)

#### A Word about Device Drivers

##### When a Driver is Required

If your system requires that an 8088 processor be used to perform the "warm boot"

If you want to use "Hot Keys" to enable/disable cache or to switch processors

If an EEMS (expanded memory) driver is installed

If an alternate address is required for the 286 Express Card

##### When You Must Use EXPRESS.SYS

If you are using a version of DOS that is lower than 3.0 you must use the EXPRESS.SYS driver. Early versions of DOS do not support .EXE type files.

##### When you Use PCT.EXE

If you are using a version 3.0 DOS (or later), the PCT.EXE driver provides the same capabilities as EXPRESS.SYS.

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