

## Chapter 2

# WinBIOS Power-On Self Test

WinBIOS provides all IBM standard Power-On Self Test (POST) routines as well as enhanced WinBIOS POST routines. WinBIOS POST supports CPU internal diagnostics.

### POST Phases

Every time the system is powered on, WinBIOS executes two types of POST routines:

*System Test and Initialization* (tests and initializes WinBIOS for normal operations) and

*System Configuration Verification* (compares defined configuration with hardware actually installed).

### BIOS Error Reporting

BIOS errors are reported in one of two ways:

If...	then...
the error occurs before the display device is initialized,	a series of beeps sound. Beep codes indicate that a fatal error has occurred. WinBIOS Beep Codes are described on the next page.
the error occurs after the display device is	the error message is displayed. A prompt to press <F1> can also appear with displayed error messages.

## Beep Codes

Fatal errors, which halt the boot process, are communicated through a series of audible beeps. If WinBIOS POST can initialize the system video display, it displays the error message. Displayed error messages, in most cases, allow the system to continue to boot.

### WinBIOS Beep Codes

Beeps	Error message	Description
1	Refresh Failure	The memory refresh circuitry is faulty.
2	Parity Error	Parity error in the base memory (the first 64 KB block) of memory.
3	Base 64 KB Memory Failure	Memory failure in first 64 KB.
4	Timer Not Operational	A memory failure in the first 64 KB of memory, or Timer 1 is not functioning.
5	Processor error	The CPU generated an error.
6	8042 - Gate A20 Failure	Cannot switch to protected mode.
7	Processor Exception Interrupt Error	The CPU on the CPU Card generated an exception interrupt.
8	Display Memory Read/Write Error	The system video adapter is either missing or its memory is faulty. This is not a fatal error.
9	ROM Checksum Error	The ROM checksum value does not match the value encoded in WinBIOS.
10	CMOS Shutdown Register Read/Write	The shutdown register for CMOS RAM has failed.
11	Cache memory bad — do not enable cache	The cache memory test failed. Cache memory is disabled. <i>Do not press &lt;Ctrl&gt; &lt;Alt&gt; &lt;Shift&gt; &lt;+&gt; to enable cache memory.</i>