BIOS Recovery

Recovering a damaged BIOS is simply a matter of replacing the missing or damaged code contained within the CMOS or EEPROM. Once the CMOS code has been replaced and the chip is placed back in its socket the machine should work normally.

If you have a dead motherboard as a consequence of a failed flash or bad flash or have had a power failure during the update procedure. The first thing to do, is try any crisis recovery options available from the motherboard makers. Most manufacturers have a crisis recovery procedure to recover from a failed flash update.

Crisis Recovery

The crisis recovery process involves preparing a Bootable disk with the updated or backup BIOS code and also the correct flash utility, you may also need to create an auto exec file to run the flash program automatically when the machine boots. Some makers require you to press a certain combination of keys whilst the machine is booting.

Crisis recovery procedures differ a little between makers. For that reason you need to consult the crisis recovery information at your PC maker or motherboard makers web site and also read your manual. Also check your BIOS makers for any recovery options.
These procedures only work if your board is able to read the floppy or CD-ROM on boot up. If you have a board that wont access the drives after a bad flash then you will probably need to reprogram the BIOS or CMOS chip using a programmer. Some boards have a boot block

Flash Recovery

Some motherboard makers incorporate a flash recovery jumper or boot block recovery jumper on their motherboards. This can often be used to recover from a bad or failed flash. On most machines a small segment of the flash ROM does not get overwritten when you perform a normal flash update. This small portion of code contains a basic boot block which can enable the machine to reload another BIOS from floppy disk and in some cases a CD-ROM or USB flash drive.

If you have a laptop or desktop without a floppy. You can either fit a floppy in the conventional manner or in some cases a USB floppy or CD-ROM can be used.

Before using our Soldered **BIOS Service** it is important that you check out all recovery options for your motherboard or laptop. You could restore your machine easily and without cost just by doing a little research on the Internet.

A visit to the makers web site is recommenced if you have a dead machine, and I would do this before anything else along with reading the manual.

SPI Flash-SPI Headers

The SPI Flash types are starting to make an appearance on modern PC motherboards. It is possible to program these devices by using the SPI header on the motherboard.
Providing your programmer is capable of this type of programming then you shouldn't have to much of a problem with these boards.
You will have to get an ISP header for the programmer or improvise by making your own. Old PC Comm port or front panel connector wires are ideal for the task.

CMOS, BIOS, EEPROM

Besides the code being damaged or corrupted it is possible that an EEPROM or BIOS chip could have an internal fault. It does happen occasionally, and if this is the case then the EEPROM would need to be replaced to restore normal operation.

In most cases it is the contents of the chip that cause any problems, but the possibility of a faulty EEPROM should not be overlooked.
Other Recovery Options

If you just suspect the BIOS code or CMOS is bad because you have a board that powers up

Check CMOS Battery Voltage, sometimes a board will not boot if the battery is low. Remove all non essential hardware items, as any faulty items such as PCI cards and drives can also stop your machine from booting.

Check your board supports the CPU and memory size you are using, read the manual. Check any jumpers that may be on the motherboard.

If jumpers or switches are used to set the FSB speed then check they are set correctly. I have seen cases where the motherboard simply doesn't support the processor being used check CPU support for your motherboard at your motherboard makers web site.

Switch the machine off and unplug from mains. Disconnect the power lead to your motherboard and clear CMOS. Normally there is a jumper on the motherboard somewhere for this, although some makers do not fit one at all. If you don't have a clear CMOS Jumper you can try removing the CMOS battery for a few minutes whilst the machine is powered off. Sometimes this can be enough to restore normal operation. Try all BIOS recovery options for your board.
CMOS Battery

Most computer's will boot with a flat CMOS Battery, although they will loose there user settings within the CMOS. I have seen instances where some motherboards will not boot at all if the CMOS battery Voltage is low.

If you have a non booting board, this should be one of the first thing's that you check, along with clearing the CMOS.

The nominal Voltage for the CMOS Battery is approximately 3.1 to 3.3 volts. If the Voltage is any lower than 2.8 Volts then the CMOS Battery should really be changed. The reason for this is that the battery will be approaching the end of its useable life span, and the voltage will drop rapidly.
Removing the CMOS Battery can also clear the CMOS settings. With most desktop PCs removing the CMOS battery for a few minutes may also remove any BIOS Password.

There is another BIOS Recovery option if you have two identical boards. Hot Swapping can recover a chip in an emergency, but you will need to be careful. Do not use a different type of BIOS chip in your board as you may damage the board, they need to be the same.

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