



Press power to turn on

Computer

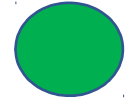
Motherboard



Power Button

Computer

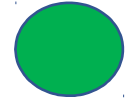
Motherboard



Power Button

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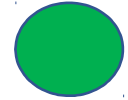
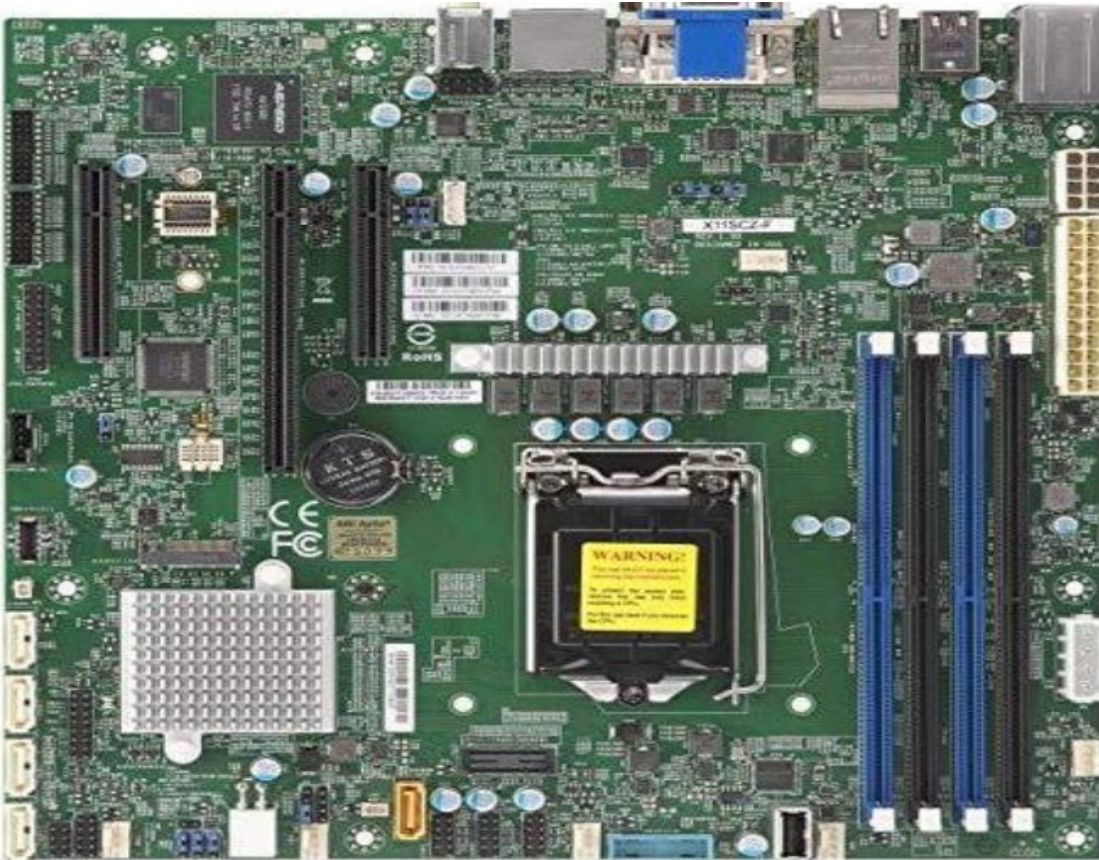
Motherboard



Power Button
Powers up the
MotherBoard

Computer

Motherboard



Power Button
Powers up the
MotherBoard



BTW Here is what a
motherboard looks like.

Computer

Motherboard

The processor on the motherboard starts executing instructions at a predetermined address (0xFFFFFFFF0 for the x86).

This address range contains the BIOS, a discrete chip on the motherboard

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The processor on the motherboard starts executing instructions at a predetermined address (0xFFFFFFFF0 for the x86).

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BTW Here is what a BIOS chip looks like

Computer

Motherboard

BIOS

A diagram illustrating the hierarchy of computer components. A large red rectangle represents the 'Computer'. Inside it, a smaller red rectangle represents the 'Motherboard'. Within the 'Motherboard' rectangle, a black-outlined rectangle represents the 'BIOS' chip, located in the top-left corner.

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Computer

Motherboard

BIOS

Does
POST
Loads
bootloader

The processor on the motherboard starts executing instructions at a predetermined address (0xFFFFFFF0 for the x86).

This address range contains the BIOS, a discrete chip on the motherboard

The BIOS is flash memory, which means you can update it without removing the chip.

The BIOS conducts a POST, then finds the boot disk and attempts to find the bootloader which starts on the first sector.

Computer

Motherboard

BIOS

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What is boot disk and where is it defined?

PhoenixBIOS Setup Utility			
Main	Advanced	Security	Boot Exit
System Time: [01:11:55] System Date: [06/30/2016] Legacy Diskette A: [1.44/1.25 MB 3½"] Legacy Diskette B: [Disabled] ▶ Primary Master [42950 MB] ▶ Primary Slave [None] ▶ Secondary Master [CD-ROM] ▶ Secondary Slave [None] ▶ Keyboard Features System Memory: 640 KB Extended Memory: 523264 KB Boot-time Diagnostic Screen: [Disabled]		Item Specific Help <Tab>, <Shift-Tab>, or <Enter> selects field.	
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults Esc Exit ↔ Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit			

In the BIOS setup, get here by pressing F2 or F6 while starting machine
Here 42950 MB device is the boot disk.

Computer

Motherboard

BIOS

confirms there is a
bootloader on Boot
disk, loads it from
disk into RAM, and
then transfers
control to the
bootloader in RAM

RAM

Disk or SSD

bootloader starts at
1st sector of Boot
Disk
BIOS will load this
into RAM, transfers
control to Bootloader
in RAM



Computer

Motherboard

BIOS

confirms there is a
bootloader on Boot
disk, loads it from
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RAM

Bootloader finds and
loads OS from Disk to
RAM, then transfers
control to OS

Disk or SSD

bootloader starts at
1st sector of Boot
Disk
BIOS will load this
into RAM, transfers
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in RAM



Computer

Motherboard

BIOS

Does
POST

confirms there is a
bootloader on Boot
disk, loads it from
disk into RAM, and
then transfers
control to the
bootloader in RAM

RAM

OS is now loaded and
running

Disk or SSD

bootloader starts at
1st sector of Boot
Disk
BIOS will load this
into RAM, transfers
control to Bootloader
in RAM

