

# **Computer Maintenance**

Miss: hind alshammari

Miss: samera balhareth

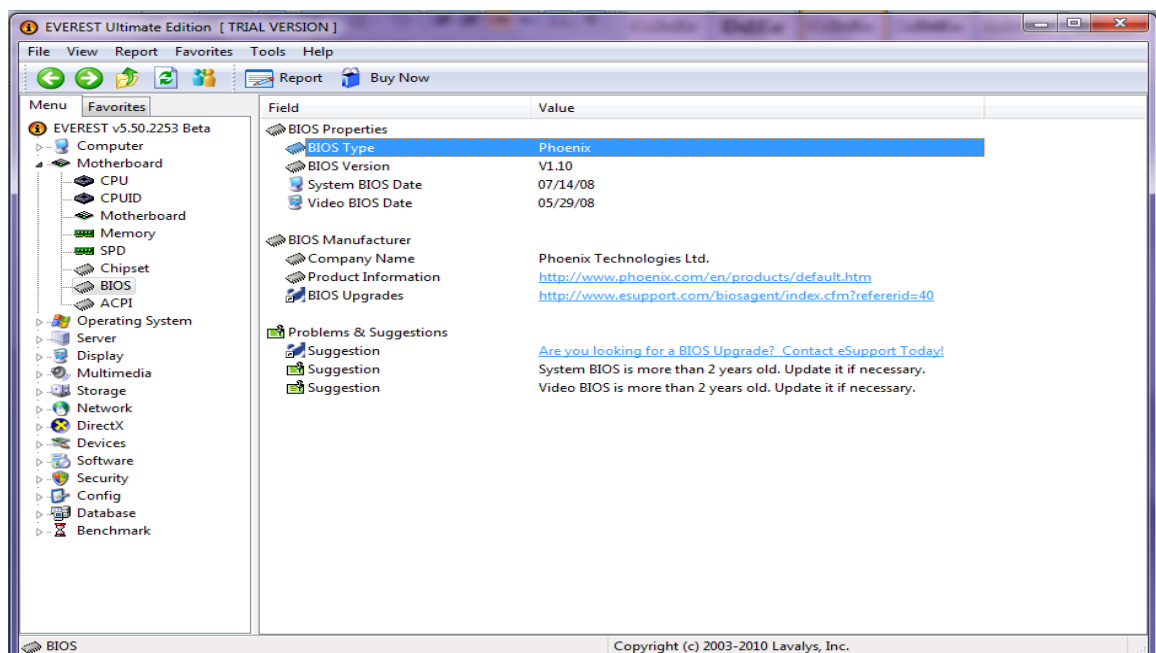
**LAB (7)**

## What is bios:

- Short for (acronym for) Basic Input/output System, the BIOS, or System BIOS is an electronic set of instructions (program) that a Personal Computer (PC) uses to successfully start up and it has other using . The bios located on COMS .it is a chip located on all motherboards. there is small battery near the chip to keeps the bios alive when the computer is off.
- It contains instructions and setup for how your system should boot and how it operates.
- It stores configuration details about your computer hardware and software.
- It allows you to modify the basic system configuration.
- There are many types but the most common type of BIOS 's come from: AMI , Award and Phoenix.
- Motherboard manufacturers buy or lease the BIOS source code from these companies.

## How to find out type and version of bios:

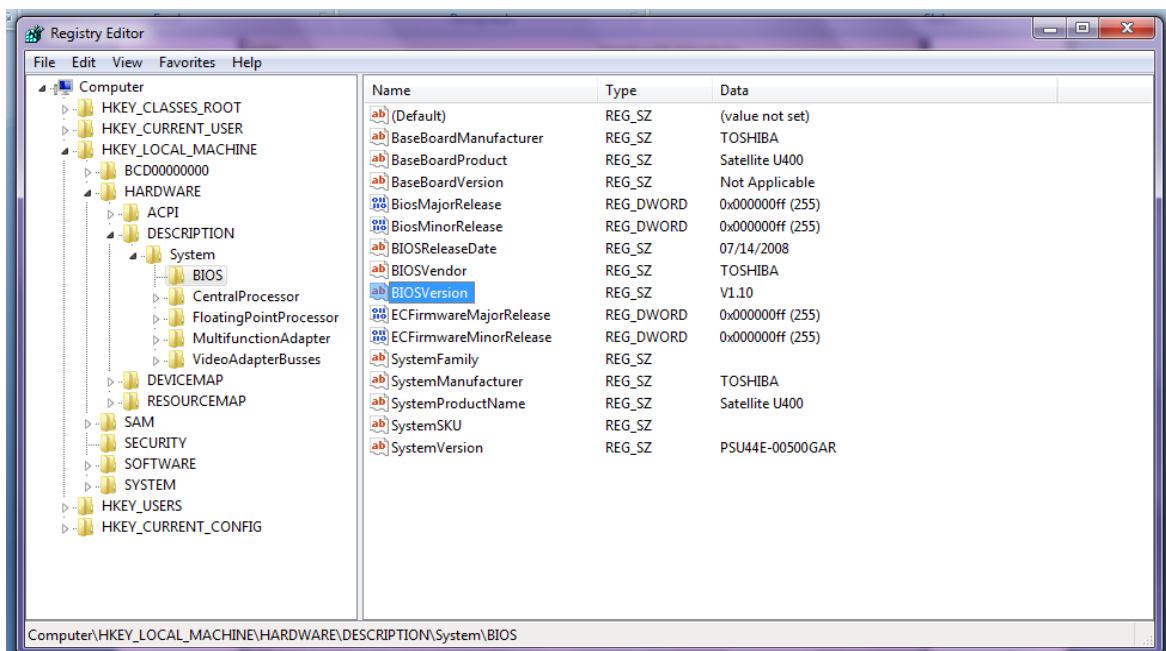
1. Install and Open Everest Ultimate.
2. Double Click on Motherboard.
3. Click on BIOS.



- We can find out types and names of all computer components by the program.

## **Other way to find out the bios version(not for all devises):**

1. Start > run > regedit
2. HKEY\_LOCAL\_MACHINE > HARDWARE > DESCRIPTION > System > BIOS



## **How to open BIOS system:**

1. Turn on your PC or restart it if it's already on.
2. Watch for a "entering setup" message in the first few seconds after turning on your computer. This message is Different from computer to computer and also includes the key or keys you need to press to enter BIOS.

❖ Mostly f2 for laptops BIOS sitting and delete key for desktops.

## **How to deal with Bios system:**

- ❖ Arrow keys are used to navigate.
- ❖ Plus and minus keys are used to change values.
- ❖ Users must save values before exiting.

## AWARD BIOS 6.1 :

- **NOTE: This manual is generic. Not all fields will be the same for your BIOS**

## Main Menu:

**The main menu includes the following main setup categories. Recall that some systems may not include all entries.**

CMOS Setup Utility - Copyright ( C )	
Standard CMOS Feature	Load Fail-Safe Defaults
Advanced BIOS Feature	Load Optimized Defaults
Advanced Chipset Feature	Set Supervisor Password
Integrated Peripherals	Set User Password
Power Management Setup	Save & Exit Setup
PnP/PCI Configurations	Exit Without Saving
Frequency/Voltage Control	
Esc : Quit                      ↑ ↓ ← → : Select Item	
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type....	

## Standard CMOS Setup:

**you can setup the basic BIOS features such as date, time, type of floppy etc. Use the arrow keys to move around and press enter to select the required option. You can specify what IDE devices you have such as Hard drive, CD-ROM, ZIP drive etc. The easiest way to setup the IDE devices is by leaving it set to auto. This allows the BIOS to detect the devices automatically so you don't have to do it manually. At the bottom, it also displays the total memory in your system.**

Standard CMOS Features			Item Help
Date:	Mon, Feb 8		
Time:	16:19:20		
➤ IDE Primary Master	2557 MB		Menu Level ➤
➤ IDE Primary Slave	None		
➤ IDE Secondary Master	None		Change the day, month,
➤ IDE Secondary Slave	None		year and century
Drive A	1.44M, 3.5 in.		
None			
Video	EGA/VGA		
Halt On	All Errors		
Based Memory	640K		
Extended Memory	64512K		
Total Memory	65536K		

↑↓←→ Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help  
 F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults

Item	Options	Description
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the
Time	HH : MM : SS	Set the system time
IDE Primary Master	IDE 1	The IDE configuration allows a user to define or change any values relating to IDE devices connected to the computer. This includes you hard drive, CD-ROM drives and any other IDE drives.
IDE Primary Slave	Master	
	Slave	
IDE Secondary Master	IDE2	
	Master	
IDE Secondary Master	Slave	
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	This field is read-only and cannot be changed from BIOS Setup. Example: 640 KB	Displays the amount of conventional memory detected during boot up
Extended Memory	This field is read-only and cannot be changed from BIOS Setup. Example: 64 512 KB	Displays the amount of extended memory detected during boot up
Total Memory	This field is read-only and cannot be changed from BIOS Setup. Example: 65536 KB	Displays the total memory available in the system

## ❖ IDE primary master sub menu.

CMOS Setup Utility – Copyright © Award Software	
IDE Primary Master	
IDE HDD Auto-Detection	Press Enter
IDE Primary Master	Auto 2557 MB
Access Mode	Auto
Cylinder	4956
Head	16
Precomp	0
Landing Zone	4955
Sector	63
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults	

**Figure 2 IDE Primary Master sub menu**

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads
Capacity	Auto Display your disk drive size	Disk drive capacity
Access Mode	Normal LBA Large Auto	Choose the access mode for this hard disk
The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	
Sector	Min = 0 Max = 255	Number of sectors per track

## Advanced BIOS Features:

This section allows you to configure your system for basic operation. For most cases leaving the default setting should be adequate. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation and security.

CMOS Setup Utility – Copyright © Award Software	
Advanced BIOS Features	
Virus Warning	Enabled
CPU Internal Cache	Enabled
External Cache	Enabled
CPU L2 Cache ECC Checking	Enabled
Quick Power On Self Test	Disabled
First Boot device	Floppy
Second Boot device	HDD-0
Third Boot device	Floppy
Boot other device	Disabled
Swap Floppy Drive	Disabled
Boot Up Floppy Seek	Disabled
Boot Up NumLock Status	Off
Gate A20 Option	Normal
Typematic Rate Setting	Disabled
Typematic Rate (Chars/Sec)	6
Typematic Delay (Msec)	250
Security Option	Setup
OS Select For DRAM > 64MB	Non-OS2
Report NO FDD For Win 95	No
Item Help Menu Level >	
Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep	
↑↓←→Move Enter: Select +/-PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults	

### Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

### CPU Internal Cache/External Cache

These two categories speed up memory access. However, it depends on CPU/chipset design.

Enabled	Enable cache
Disabled	Disable cache

### CPU L2 Cache ECC Checking

This item allows you to enable/disable CPU L2 Cache ECC checking.

Enabled	Enable cache
Disabled	Disable cache

<b>Quick Power On Self Test</b>	
<b>This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST</b>	
<b>Enabled</b>	<b>Enable quick POST</b>
<b>Disabled</b>	<b>Disable quick POST</b>

<b>First/Second/Third/ Other Boot Device</b>	
<b>The BIOS attempts to load the operating system from the devices in the sequence selected in these items.</b>	
<b>The Choice</b>	<b>Floppy,HDD, CDROM, Disabled</b>

<b>Swap Floppy Drive</b>	
<b>If the system has two floppy drives, you can swap the logical drive name assignments</b>	
<b>The Choice</b>	<b>Enabled/Disabled.</b>

<b>Boot Up Floppy Seek</b>	
<b>Seeks disk drives during boot up. Disabling speeds boot up</b>	
<b>The Choice</b>	<b>Enabled/Disabled.</b>

<b>Boot Up NumLock Status</b>	
<b>Select power on state for NumLock.</b>	
<b>The Choice</b>	<b>Enabled/Disabled.</b>

<b>Gate A20 Option</b>	
<b>Select if chipset or keyboard controller should control GateA20.</b>	
<b>Normal</b>	<b>A pin in the keyboard controller controls GateA20</b>
<b>Fast</b>	<b>Lets chipset control GateA20</b>

<b>Typematic Rate Setting</b>	
<b>Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.</b>	
<b>The choice:</b>	<b>Enabled/Disabled</b>

<b>Typematic Rate (Chars/Sec)</b>	
<b>Sets the number of times a second to repeat a key stroke when you hold the key down.</b>	
<b>The choice:</b>	<b>6 - 30</b>



<b>Typematic Delay (Msec)</b>	
<b>Sets the delay time after the key is held down before it begins to repeat the keystroke.</b>	
<b>The choice:</b>	<b>250-1000.</b>

<b>Security Option</b>	
<b>Select whether the password is required every time the system boots or only when you enter setup</b>	
<b>System</b>	<b>The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.</b>
<b>Setup</b>	<b>The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.</b>

<b>OS Select For DRAM &gt; 64MB</b>	
<b>Select the operating system that is running with greater than 64MB of RAM on the system (os2)</b>	
<b>The choice:</b>	<b>Non-OS2, OS2</b>

<b>Report No FDD</b>	
<b>The choice:</b>	<b>The choice: Yes, No</b>

## Advanced Chipset Features:

CMOS Setup Utility – Copyright © Award Software	
Advanced Chipset Features	
SDRAM CAS Latency Time	3
SDRAM Cycle Time Tras/Trc	5/7
SDRAM Address Setup Time	1
SDRAM RAS-to-CAS Delay	3
SDRAM RAS Precharge Time	3
System BIOS Cacheable	Disabled
Video BIOS Cacheable	Disabled
Memory Hole At 15M-16M	Enabled
Delay Transaction	Disabled
On-Chip Video Window Size	64MB
* Onboard Display Cache Setting *	
CAS# Latency	3
Paging Mode Control	Fast
RAS-to-CAS Override	Fast
RAS# Timing	Fast
RAS# Precharge Timing	Fast
Item Help	
Menu Level >	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults	

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

## Integrated Peripherals:

This menu allows you to change the various I/O devices such as IDE controllers, serial ports, parallel port, keyboard etc. You can make changes as necessary.

CMOS Setup Utility – Copyright © Integrated Peripherals			Award Software
OnChip Primary	PCI IDE	Enabled	<div>Item Help</div> <hr/> Menu Level > If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support
OnChip Secondary	PCI IDE	Enabled	
IDE Primary Master	PIO	Auto	
IDE Primary Slave	PIO	Auto	
IDE Secondary Master	PIO	Auto	
IDE Secondary Slave	PIO	Auto	
IDE Primary Master	UDMA	Auto	
IDE Primary Slave	UDMA	Auto	
IDE Secondary Master	UDMA	Auto	
IDE Secondary Slave	UDMA	Auto	
USB Controller		Enabled	
USB Keyboard Support		Enabled	
Init Display First		PCI Slot	
AC97 Audio		Enabled	
AC97 Modem		Enabled	
IDE HDD Block Mode		Enabled	
Onboard FDC Controller		Enabled	
Onboard Serial Port 1		3F8/IRQ4	
Onboard Serial Port 2		2F8/IRQ3	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults			

## The power management setup :

The power management allows you to setup various power saving features.

CMOS Setup Utility – Copyright © Power Management Setup		Award Software
ACPI function	Enabled	Item Help
Power Management	User Define	
Video Off Method	V/H SYNC_Blank	Level
Video Off In Suspend	Suspend -> Off	
Suspend Type	Stop Grant	
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Delay 4 Sec	
CPU THRM-Throttling	25.0%	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT Port	Disabled	
PCI PIRQ [A-D]#	Disabled	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

## **PnP /PCI configurations:**

This section describes configuring the PCI bus system. only experienced users should make any changes to the default settings.

CMOS Setup Utility – Copyright © PnP/PCI Configurations		Award Software
PnP OS Installed	No	Item Help ----- Menu Level      ➤  Default is Disabled. Select Enabled to reset Extended System Configuration Data(ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot
Reset Configuration Data	Disabled	
Resources Controlled By	Manual	
➤ IRQ Resources	Press Enter	
➤ DMA Resources	Press Enter	
➤ Memory Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

## **Frequency/Voltage Control:**

This menu to set the Frequency/Voltage motherboard and components.

CMOS Setup Utility – Copyright © Frequency/Voltage Control		Award Software
Auto Detect DIMM/PCI CMK	Enabled	Item Help ----- Menu Level      ➤
Spread Spectrum Modulated	Disabled	
CPU Speed	266Mhz (66x4)	
CPU Ratio	X 3	
CPU Frequency	66 MHz	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

## **Load Fail-Safe Defaults:**

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal performance system operations.

## **Load Optimized Defaults:**

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Like the Fail-Safe mode above, this option loads the BIOS default settings, but runs the system at optimal performance. From the dialog box Choose "Y" followed by enter to load Optimized Defaults..

## **Supervisor/User Password Setting:**

You can set either supervisor or user password, or both of them. The differences between are:

supervisor password : can enter and change the options of the setup menus.

user password : just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

## **Exit Selecting:**

Save & Exit Setup

Exit Without Saving

Save command here does not include the password.