**WHATSAPP ENCRYPTION**

WhatsApp's end-to-end encryption ensures that only you and the person you're communicating with can read what's sent. Nobody in between, not even WhatsApp, can read the messages. The messages are secured with locks, and only the recipient has the special key to unlock and read the messages. WhatsApp uses Signal Protocol developed by Open Whisper Systems.

The following step describes the working of E2EE when two people communicate on WhatsApp.

1. When the user first opens the WhatsApp, two different keys (public & private) are generated. The encryption process takes place on the phone itself.

2. The private key must remain with the user whereas the public key is transferred to the receiver via the centralized WhatsApp server.

3. The public key encrypts the sender’s message on the phone even before it reaches the centralized server.

4. The server is only used to transmit the encrypted message. The message can only be unlocked by the private key of the receiver. No third part, including WhatsApp can intercept and read the message.

5. If a hacker tries to hack and read the messages, they would fail because of the encryption.

**How do I verify that WhatsApp is using end-to-end encryption?**

To manually verify the encryption between the sender and the receiver, simply tap on the contacts name on WhatsApp to open the info screen.  Now tap on 'Encryption' to view the QR code and 60-digit number. You can scan your contacts' QR code or visually compare the 60-digit number. If you scan the QR code, and if they match, then your chats are encrypted and no one is intercepting your messages or calls.

**CentOS**

CentOS is a Linux distribution derived from the Red Hat Enterprise Linux. Because it is free, CentOS Linux is widely popular with Linux users, web hosts and small businesses. However, as with most free things, you do give up something. In this case, there is no direct CentOS support services offered by the CentOS team. So before you select CentOS for your next project, there are a few things you should know about using CentOS Linux.

CentOS is a repackaged version of Red Hat Enterprise Linux. The CentOS team is a volunteer group that repackages publicly available RHEL source packages into binaries. The software is then distributed through various public mirrors. To my knowledge, there is no direct relationship or partnership between CentOS and Red Hat. The lack of this formal relationships has created problems in the past, such as a when Red Hat demanded all Red Hat branding be removed from CentOS.

While there are a number of companies that support CentOS Linux, there is no official, commercial support service. With RHEL, you get support directly from Red Hat. With CentOS, you rely on the community or IT consultants for commercial CentOS support.

**BIOS**

BIOS (basic input/output system) are the program a personal computer's microprocessor uses to get the computer system started after you turn it on. It also manages data flow between the computer's operating system and attached devices such as the hard disk, video adapter, keyboard, mouse and printer.

BIOS is an integral part of your computer and comes with it when you bring it home. (In contrast, the operating system can either be pre-installed by the manufacturer or vendor or installed by the user.) BIOS is a program that is made accessible to the microprocessor on an erasable programmable read-only memory (EPROM) chip. When you turn on your computer, the microprocessor passes control to the BIOS program, which is always located at the same place on EPROM.

When BIOS boots up (starts up) your computer, it first determines whether all of the attachments are in place and operational and then it loads the operating system (or key parts of it) into your computer's random access memory (RAM) from your hard disk or diskette drive.

Purpose of BIOS

BIOS enables computers to perform certain operations as soon as they are turned on. The principal job of a computer's BIOS is to govern the early stages of the startup process, ensuring that the operating system is correctly loaded into memory. BIOS is vital to the operation of most modern computers, and knowing some facts about it could help you troubleshoot issues withyour machine.

**Booting process**

Booting is a process or set of operations that loads and hence starts the operating system, starting from the point when user switches on the power button.

Booting (also known as booting up) is the initial set of operations that a computer system performs when electrical power is switched on. The process begins when a computer that has been turned off is re-energized, and ends when the computer is ready to perform its normal operations. On modern general purpose computers, this can take tens of seconds and typically involves performing power-on self-test, locating and initializing peripheral devices, and then finding, loading and starting an operating system.

**Booting process in linux**



**Booting process in windows**

## 1. Use "Shift + Restart" on the Windows 10 Sign In screen

If you cannot log into Windows 10, but you can get to the Sign In screen, press and hold the SHIFT key on the keyboard. With this key still pressed, click or tap the Power button and, in the menu that opens, click Restart.

## 2.Interrupt the normal boot process of Windows 10 three times in a row

If Windows 10 fails to boot normally three times over, the fourth time it enters by default in an Automatic Repair mode. Using this mode, you can boot into Safe Mode. To trigger the Automatic Repair mode, you must interrupt the normal boot process three consecutive times: use the Reset or the Power button on your Windows 10 PC to stop it during boot, before it finishes loading Windows 10. If you use the Power button, you might have to keep it pressed for at least 4 seconds to force the power off. When Windows 10 enters the Automatic Repair mode, the first thing you see is a screen that tells you that the operating system is "Preparing Automatic Repair."