OSI Model

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Layer	Function	Example
Application (7)	Services that are used with end user applications	SMTP,
Presentation (6)	Formats the data so that it can be viewed by the user Encrypt and decrypt	JPG, GIF, HTTPS, SSL, TLS
Session (5)	Establishes/ends connections between two hosts	NetBIOS, PPTP
Transport (4)	Responsible for the transport protocol and error handling	TCP, UDP
Network (3)	Reads the IP address form the packet.	Routers, Layer 3 Switches
Data Link (2)	Reads the MAC address from the data packet	Switches
Physical (1)	Send data on to the physical wire.	Hubs, NICS, Cable

Today we are here to explain to you what The OSI Model is, How it works and the possible benefits to your company.

Application Layer

This is the layer that's being interacted with by the end user. This layer allows access to network resources. The Applications manage user interaction, such as security checks and the identification of two participants

- Files Transfer Protocol, Secure Shell, Simple Mail Transfer Protocol, Internet Message Access Protocol, Domain Name Service, and Hypertext Transfer Protocol are all Protocols that operate in this level
- Some problems with this layer would be issues on previous layers, software applications that were configured incorrectly and user errors

Presentation Layer

The **presentation** layer oversees **data formatting and encryption** through character encoding and conversions.

It allows users in the Application layer to function properly by consuming and displaying data for them.

The three main data formatting methods are American Standard Code for Information Interchange (**ASCII**), Extended Binary-Coded Decimal Interchange Code (**EBDCIC**), and **Unicode**.

Session Layer

The job of the **session** layer is to maintain proper communication by **establishing, terminating, and managing sessions** between two computers.

It allows two systems to communicate with each other in either Half-Duplex or Full Duplex mode.

Transport Layer

The **transport** layer is where **data is distributed into groups** called **segments** which are then transmitted. There are two protocols which are used to transmit data, they are called Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).

- **TCP** is used to slowly but reliably transmit information from one location to another.
- **UDP** is the fast but less reliable process used for the communication of information.

Network Layer

The network layer works for the transmission of data from one host to the other located in different networks.

The sender & receivers IP addresses are placed in the header of the packet by the network layer.

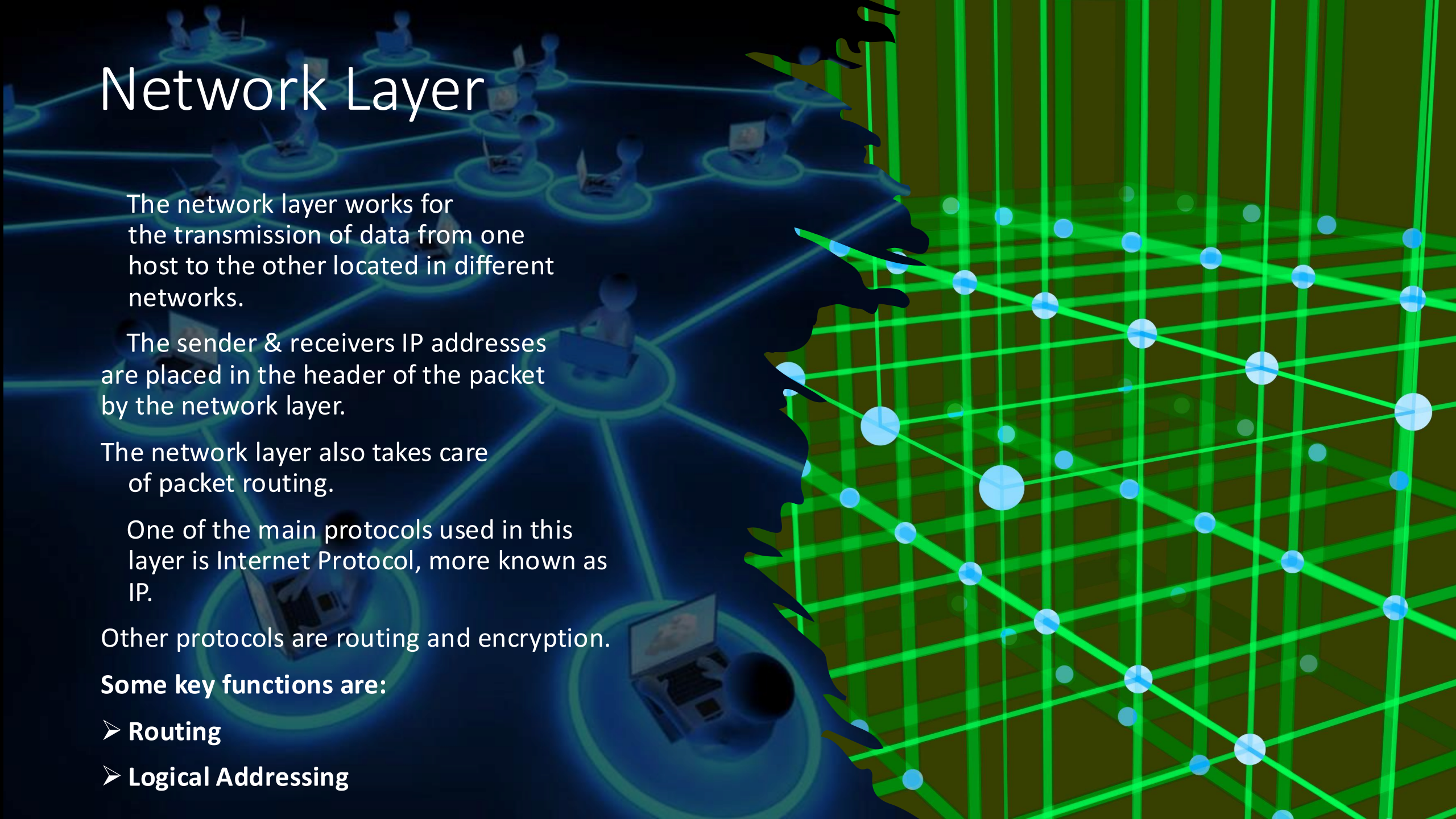
The network layer also takes care of packet routing.

One of the main protocols used in this layer is Internet Protocol, more known as IP.

Other protocols are routing and encryption.

Some key functions are:

- **Routing**
- **Logical Addressing**



Data Link

This is the Data Link layer, this is where switches operate, routers work solely on the network layer the MAC is in.

This layer is responsible for turning bits into frames.

It ensures all computers linked on to a certain network can communicate with each other.

Physical Layer

The **physical layer** consists of technology such as **cables**, **physical network devices**, and **signal types**.

In this layer, the data units are **bits** that are synchronized when sent to or from hardware devices.

The physical layer makes communication possible between networks by using electrical and mechanical components.

In Conclusion

We sincerely hope that you understand what the OSI model is, what its different layers represent, and that you are willing to integrate this model into your business.