1. This is Network Rack are typically used to contain networking equipment outside of the server itself (routers, switches, patch panels, etc.)

2. In these type of Network Rack distance between rails and heights are measured in terms of rack unit (U).

3. In these network rails power cables and network cables are separately placed in floor and upper side of rack respectively.

4. There are two types of network equipment are there in network rack that are Active equipment (that required power) and passive components(that doesn't require power) .

5. Network power manager – this is device which have multiple sockets for internal network equipment to provide power to them.

Components(Cisco Catalyst 6507R)

Components :-

A KVM Switch is a hardware device used in data centers that allows the control of multiple computers from a single keyboard, monitor and mouse (KVM).

Active Equipments:- CISCO Catalyst 6507R

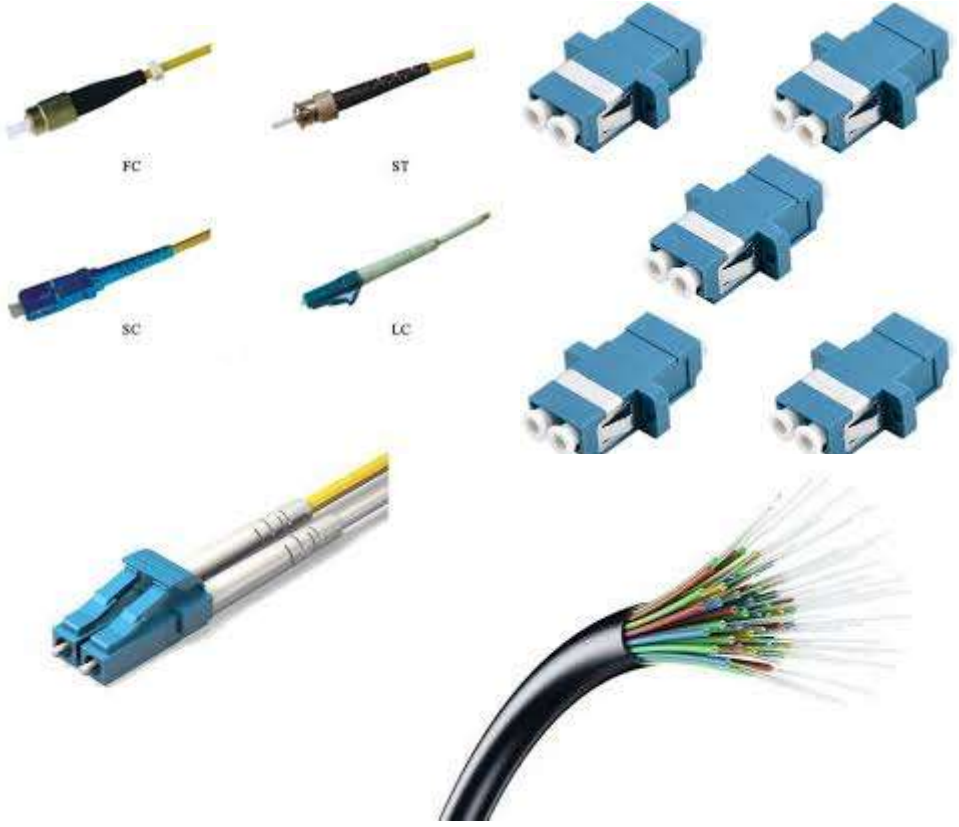
A Catalyst switch is a network switch manufactured by Cisco Systems.
It is widely used in enterprise networks to connect devices such as computers, servers, and printers.

There is a rotatory keyboard tray in this which allowed keyboard to rotate in any direction for its efficient use

- A Rack-Mount UPS Power Supply is a device that offers backup power to electronic equipment during outages, surges, or power fluctuations. This crucial piece of equipment is typically mounted within a standard 19-inch server rack.

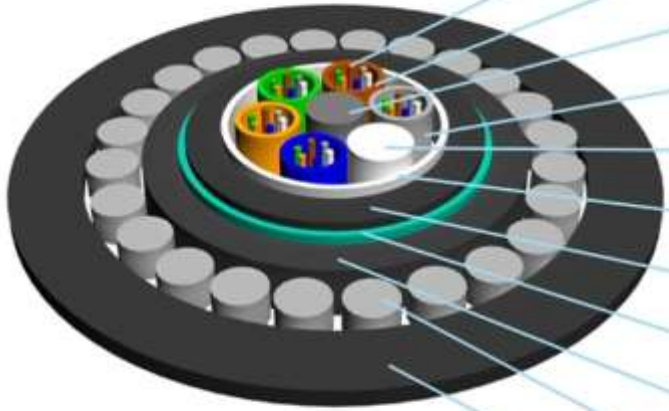
This is a motherboard in network rack.
A server motherboard is defined as the mainboard that aggregates all server components into one system, focusing on reliable power supply, high-speed bus, and I/O interfaces to support multiple users and processes efficiently.

D Link routers allow you to connect multiple devices to a network and manage the traffic on the network to find the shortest route between two devices that are trying to communicate with each other. Many D Link routers also have a built-in switch and modem.


FC
ST
SC
LC

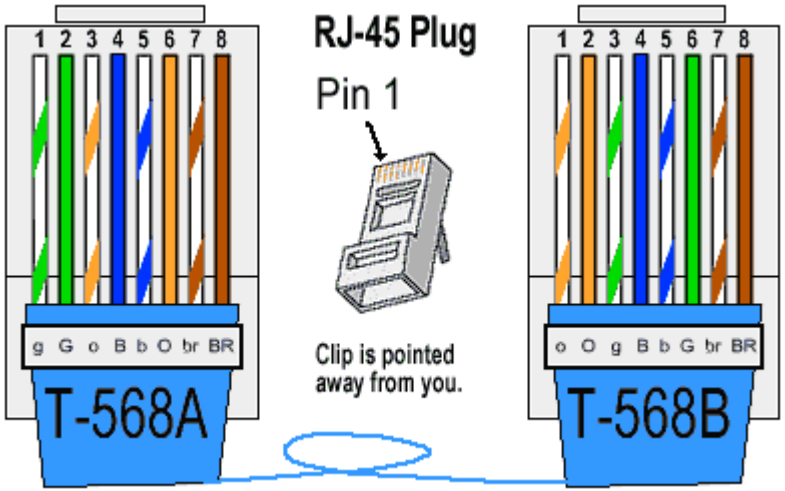
RJ45:-The eight-pin RJ45 connector is a standardised interface which often connects a computer to a Local Area Network (LAN). This type of connector was originally developed for telephone communications but is now used in a range of applications. The abbreviation, RJ45, stands for Registered Jack-45.

This RJ45 connector is used in copper port for lane connection .
It has 8 wires in which 4 are white whereas 4 are colored these are arranged in alternative manner one white and one colored respectively.



Fiber
Loose Tube Filled with Jelly
Central Strength Member
Cable Filling Compound
Filler
Aluminium Tape Armor
Inner PE Jacket
Steel Tape Armor
Middle PE Jacket
Steel Wire
Outer PE Jacket

Armored fiber optic cable is made up of numerous layers to keep it safe. Rodents, abrasion, and twist are all protected by the plastic outer jacket. Then, between the optic fibers and the outer jacket, a light steel tube provides better protection for the fibers in the center



Wiring Standards:-Armored fiber optic cable is made up of numerous layers to keep it safe. Rodents, abrasion, and twist are all protected by the plastic outer jacket. Then, between the optic fibers and the outer jacket, a light steel tube provides better protection for the fibers in the center

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A LAN port is a physical interface found on networking devices like routers, switches, and modems. It allows you to connect your device to a local network, enabling communication with other devices on the same network.

It is a versatile and robust server used in network rack.

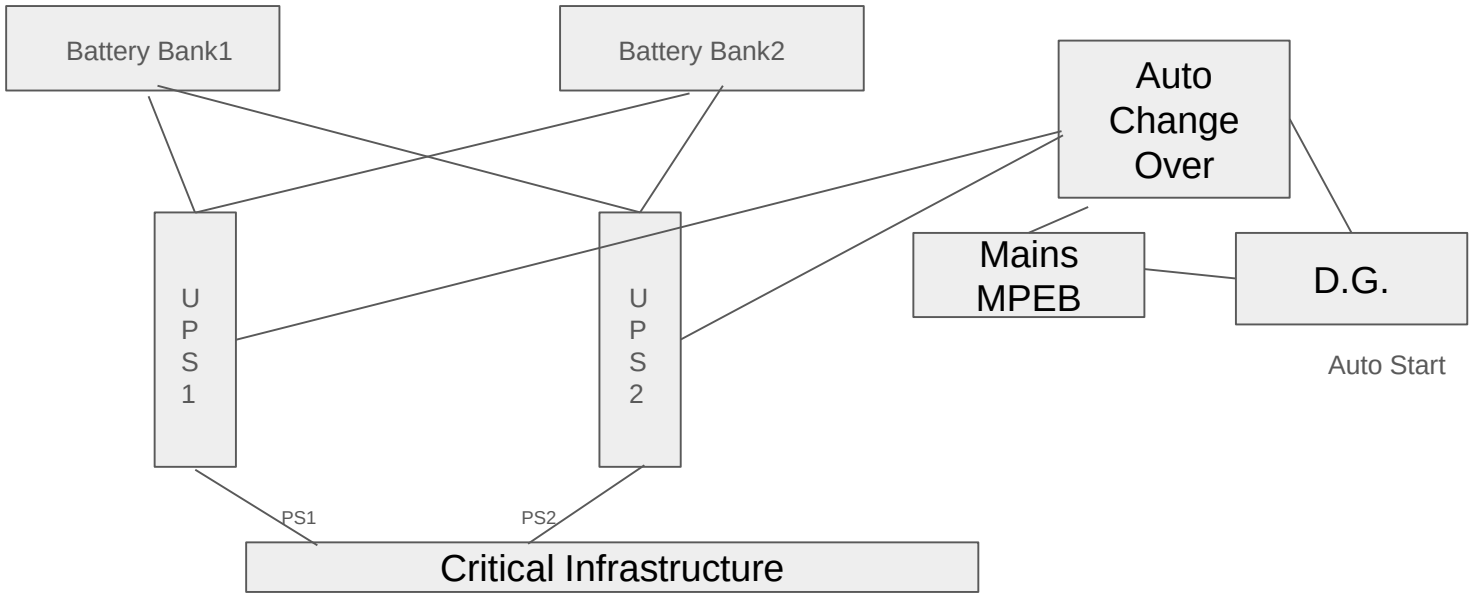
1. It can host multiple virtual machines, making it ideal for running various operating systems and applications on a single physical server.
2. Its high-performance capabilities and large memory capacity make it suitable for running database management systems, supporting enterprise-level applications.

Data Storage: Rack servers typically have multiple hard drives or solid-state drives (SSDs) for data storage. The data can be stored locally on the server or on a centralized storage system such as a storage area network (SAN) or network-attached storage (NAS).

A Rack-Mount UPS Power Supply is a device that offers backup power to electronic equipment during outages, surges, or power fluctuations. This crucial piece of equipment is typically mounted within a standard 19-inch server rack.

The PSU distributes electrical power to various devices within the rack, including servers, switches, routers, and other networking equipment.
It ensures that equal power should be given to all components and also prevent them from fluctuations.
It gives redundancy to components gives power to components even after power supply falis.

A rack uninterruptible power supply (UPS) system is designed for use within standard 19-inch IT racks or rack-based enclosures. Rack-based UPS systems must be designed to provide maximum power in very compact packages that include built-in batteries. A rack UPS generally uses from 1U to 12U of vertical rack space.


Battery Bank1
Battery Bank2
Auto
Change
Over
U
P
S
1
U
P
S
2
Mains
MPEB
D.G.
Auto Start
PS1
PS2
Critical Infrastructure

In a typical data center environment, the rPDU is connected to an upstream Power Distribution Unit (PDU) commonly referred to as a floor PDU. The floor PDU distributes power from the utility during normal operation. During an outage, an uninterruptible power supply (UPS) picks up the power load while the generator ramps up to begin providing power to the facility. The floor PDU is similar to the circuit breaker panel in your home and breaks down the available power into circuits so electricity can be distributed throughout the facility. The generator is used for redundancy in case utility power is lost.