Once network layer receive the packets it’s remove the IP header information. This will includes all the information about the sender IP address and Receiver IP Address. Since packet is received in the correct party those information will not needed any more. After removing those data it will convert these IP packets to segments and send it over to transport layer.

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| 1. Bus topologies are a good, cost-effective choice for smaller networks | 1. It uses a single cable to transmit data, they’re somewhat vulnerable. If the cable experiences a failure, the whole network goes down, which can be time-consuming and expensive to restore, which can be less of an issue with smaller networks. |
| 1. As the layout is simple, so it allows all the devices to be connected via a single coaxial cable or RJ45. | 1. Bus topologies are best suited for small networks because there’s only so much bandwidth, and every additional node will slow transmission speeds. |
| 1. More nodes can be easily added to the network by joining additional cables. | 1. Data is “half-duplex”, which means it can’t be sent in two opposite directions at the same time, so this layout is not the ideal choice for networks with huge amounts of traffic. |

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| 1. If a large network is arranged in a ring topology, repeaters can be used to ensure packets arrive correctly and without data loss. | 1. A ring topology is vulnerable to failure without proper network management. |
| 1. It reduces the risk of packet collisions, making ring topologies efficient at transmitting data without errors. | 1. In a ring topology, all the devices on the network share bandwidth, so the addition of more devices can contribute to overall communication delays. |
| 1. Ring topologies are cost-effective and inexpensive to install | 1. The entire network must be taken offline to reconfigure, add, or remove nodes. |

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| 1. Mesh topologies are reliable and stable, | 1. Mesh topologies are incredibly labor-intensive. |
| 1. the complex degree of interconnectivity between nodes makes the network resistant to failure. | 1. Each interconnection between nodes requires a cable and configuration once deployed, so it can also be time-consuming to set up. |
| 1. no single device going down can bring the network offline. | 1. the cost of cabling adds up fast, and to say mesh networks require a lot of cabling is an understatement. |

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| 1. Each of the nodes is independently connected to the central hub, if one goes down, the rest of the network will continue functioning unaffected. | 1. If the central hub goes down, the rest of the network can’t function. |
| 1. Devices can be added, removed, and modified without taking the entire network offline. | 1. The overall bandwidth and performance of the network are also limited by the central node’s configurations |
| 1. The structure of the star topology uses relatively little cabling | 1. Star topologies expensive to set up and operate. |

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| 1. Can be modified as per requirement. | 1. Design of a hybrid network is very complex. |
| 1. It is extremely flexible and reliable. | 1. There is change hardware to connect topology with another topology. |
| 1. Error detecting and troubleshooting is easy | 1. Usually hybrid architectures are usually larger in scales so they require a lot of cables in installation process. |