**Network Overlays –**

**Network overlays** is the latest solution to meet these demands, in fact, this technology can speed configuration of new or existing services.

**Underlay Network –**

**Underlay Network**is different from Underlay Network which IT industry has known for years**. Underlay Network** is physical [infrastructure](https://ipwithease.com/what-is-pki-public-key-infrastructure/) above which overlay network is built. It is the underlying network responsible for delivery of packets across networks.

**Overlay Network –**

An **Overlay Network** is a virtual network that is built on top of underlying network infrastructure (Underlay Network). Actually, “Underlay” provides a “service” to the overlay

Related- [**Networking Scenario Based Interview Questions**](https://ipwithease.com/networking-scenario-based-interview-questions/)

**Below table enumerates the difference between Underlay Network and Overlay Network:**

| **PARAMETER** | **UNDERLAY NETWORK** | **OVERLAY NETWORK** |
| --- | --- | --- |
| Philosophy | Underlay Network is physical infrastructure above which overlay network is built. | An Overlay network is a virtual network that is built on top of an underlying Network infrastructure/Network layer (the underlay). |
| Related protocols | Ethernet Switching, VLAN , Routing etc. | [VXLAN](https://ipwithease.com/basics-of-vxlan/) , OTV , VPLS |
| Scalability | Less Scalable due to technology limitation | Designed to provide more scalability than underlay network. For e.g. – [VXLAN](https://ipwithease.com/basics-of-vxlan/) (underlay Network) provides 4096 Vlan support while VXLAN (Overlay Network) provides upto 16 million identifiers. |
| Packet control | Hardware orchestered | Software orchestered |
| Packet delivery | Responsible for delivery of packets | Offloaded from delivery of packets |
| Packet encapsulation and overhead | Packet delivery and reliability occurs at layer 3 and Layer 4 | Needs to encapsulate packets across source and destination, hence incurs additional overhead. |
| Managing multitenancy | NAT or VRF based segregation required which may face challenge in big environments | Ability to manage overlapping IP addresses between multiple tenants. |
| Multipath forwarding | Less scalable options of multipath forwarding. Infact using multiple paths can have associated overhead and complexity. | Support for multi-path forwarding within virtual networks. |
| Deployment time | Less scalable and time consuming activity to setup new services and functions | Ability to rapidly and incrementally deploy new functions through edge-centric innovations |
| Traffic flow | Transmits packets which traverse over network devices like Switches and Routers. | Transmits packets only along the virtual links between the overlay nodes. |