An overlay network is a telecommunications network that is built on top of another network and is supported by its infrastructure. An overlay network decouples network services from the underlying infrastructure by encapsulating one packet inside of another packet. After the encapsulated packet has been forwarded to the endpoint, it is de-encapsulated.

Most overlay networks run on top of the public Internet, which itself began as an overlay research network running over the infrastructure of the public switched telephone network (PSTN). Other examples of overlay network deployments include virtual private networks (VPNs), peer-to-peer (P2P) networks, content delivery networks (CDNs), voice over IP (VoIP) services such as Skype and non-native software-defined networks.

Overlay network protocols include Virtual Extensible LAN (VXLAN), Network Virtualization using Generic Encapsulation (NVGRE), stateless transport tunneling (STT), Generic Routing Encapsulation (GRE) and Network Virtualization Overlays 3 (NVO3).