IT (Information Technology)

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What are some of the advanced switching technologies? How and why are they implemented?

**Advanced switching technologies**

Advanced switching technologies offer to transmit the data between specific points on a network. Some of their capabilities include power over Ethernet, spanning tree protocol, VLANs, port mirroring and port authentication. (Gerrati, 2017)

 Here are some of the advanced switching techniques

* Message Switching: Users communicate by sharing messages that contain the whole data to be shared.
* Circuit Switching: Two [network nodes](https://en.wikipedia.org/wiki/Network_nodes) form a circuit i.e. a [communications channel](https://en.wikipedia.org/wiki/Communications_channel) through the network before the nodes may communicate.
* Packet Switching: Transmission of data to a network in the form of packet.
* Telephone switching equipment: Establishing a path that links the caller's telephone to the receiver's telephone by making a physical connection.

Advanced switching technologies are implemented for a number of reasons i.e. they are cost effective, better channel efficiency, reduced traffic congestion.

What are some ways to make management of cisco devices simpler? What functions are included within the IOS?

**Management of cisco devices**

There are a number of ways that can be used to manage cisco devices in a simpler way.

**Live network maps**

They represent the connection between devices and other networks. The map is always up-to-date because it automatically adds or removes the devices when added or removed from the network.

**Interface monitoring**

It is used to set thresholds to the performance metrics of cisco devices and monitor them actively.

 The basic function of Cisco IOS is to enable data communications between network [nodes](https://searchnetworking.techtarget.com/definition/node). Other than routing and switching, Cisco IOS provides a number of additional services that can be used to enhance the performance of network traffic. (Jonathan, 2016)

 These services include [authentication](https://searchsecurity.techtarget.com/definition/authentication), [firewall](https://searchsecurity.techtarget.com/definition/firewall) capabilities, policy enforcement, [deep packet inspection](https://searchnetworking.techtarget.com/definition/deep-packet-inspection-DPI), [Quality of Service](https://searchunifiedcommunications.techtarget.com/definition/QoS-Quality-of-Service), intelligent routing and [proxy](https://whatis.techtarget.com/definition/proxy-server) capability.

Reference

Gerrati, (2017). *Advanced switching techniques for future telecommunication services*. Semantic Scholar, 135

Jonathan, (2016). *Monitoring and managing cisco environment with OpManager.* Manage Engine.

<https://www.manageengine.com/network-monitoring/cisco-monitoring.html>