mitcaps
■ Das Beste vernetzen

CARRIER GRADE ETHERNET

Carrier Grade Ethernet

With the continuous implementation of **central applications** the demand for more bandwidth arises. The users and applications expect to benefit from **high bandwidth** but reduced network delay.

Ethernet is the most frequently installed local network infrastructure. WAN Ethernet represents the consequent continuation of the simplification of the WAN structures. Furthermore it enables the end users also at **remote locations a perfect connection and access** to the central infrastructures of the company as if they would be connected directly with LAN technology.

What does Ethernet offer?

Ethernet is a wired data network technology for data network (originally for LANs). Ethernet had been more and more applied for **WANs** (Wide Area Network) that means that devices can also be connected via fiberglass nets, copper based cables or via radio over long distances.

The Ethernet technology is more and more applied in MANs (Metropolitan Area Networks) as well as **national and international networks.** Within a MPLS network, especially for high bandwidth, relatively expensive routers are necessary for the connection. For an Ethernet connection an Ethernet Switch is required which is clearly cheaper and basically more comfortable to configure.
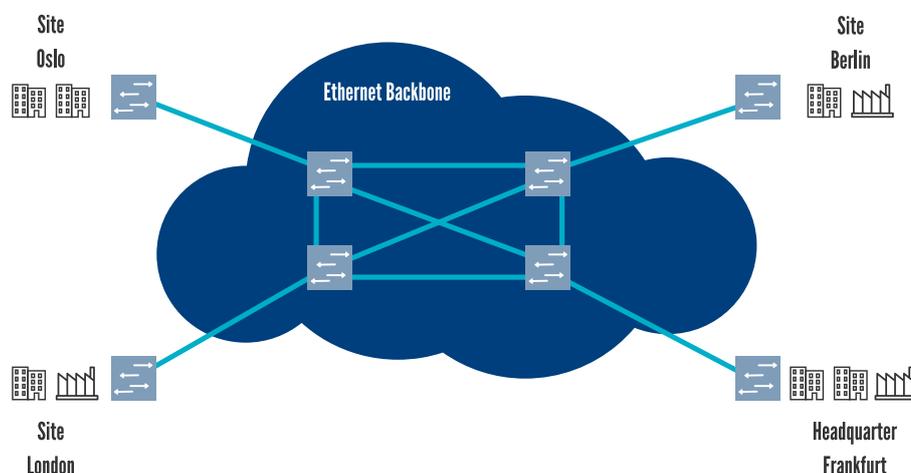
Site
Oslo

Ethernet Backbone

Site
Berlin

Site
London

Headquarter
Frankfurt

Fig.: Ethernet Backbone by mitcaps

Thus Ethernet is a perfect solution for **cheap** and **quick** local or international **connections.**

Advantages

- High and flexible bandwidths
- Easy to implement
- Low cost
- Established technology

Challenges

Not beeing available anywhere
The Ethernet-connection requires qualitatively high access cables (e.g. fiberglass), but they are not being available anywhere.

Not beeing offered by all provider
Because not all provider are "Ethernet-prepared" a global Ethernet-connection can not be implemented anywhere

Solution

1. Point to Point:
Two locations are directly connected (Ethernet Layer 2).
P-t-P Ethernet replaces the classical Leased Line- or Dark Fibre connections.

Fig.: Point-to-Point

2. Point-to-Multipoint:
The provided network solution is based on the Point-to-Multipoint Ethernet-technology.
Thereby, as a **central hub** for the network, the router in the centre is provided. The **connection of the remote locations** is occurred continoulsy over the Ethernet-connection.
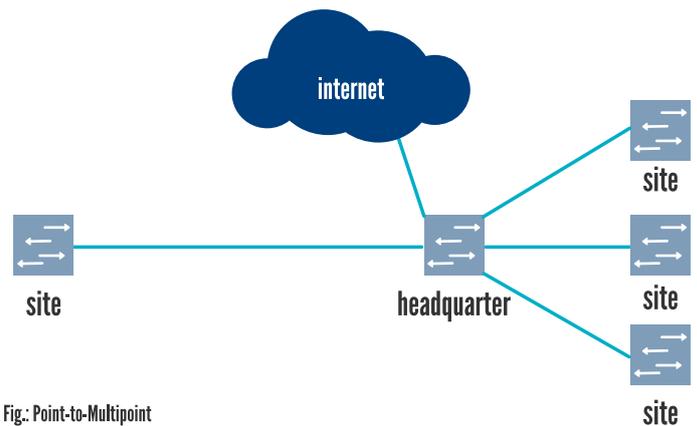
Fig.: Point-to-Multipoint

3. Multipoint Any to Any:
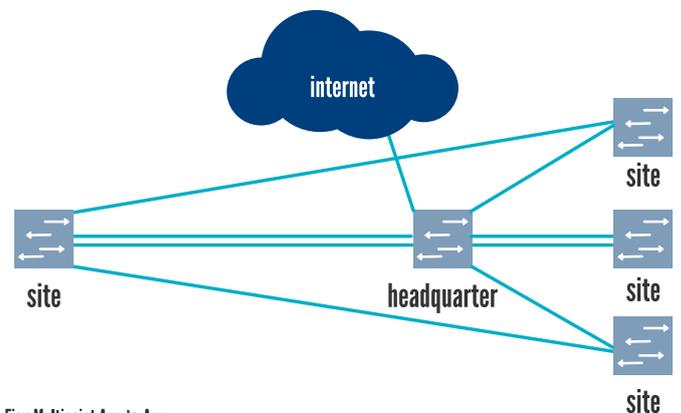Comparable with MPLS, total interconnected Ethernet-networks, based on Ethernet Layer 3 network infrastructure, can be implemented.

Fig.: Multipoint Any-to-Any