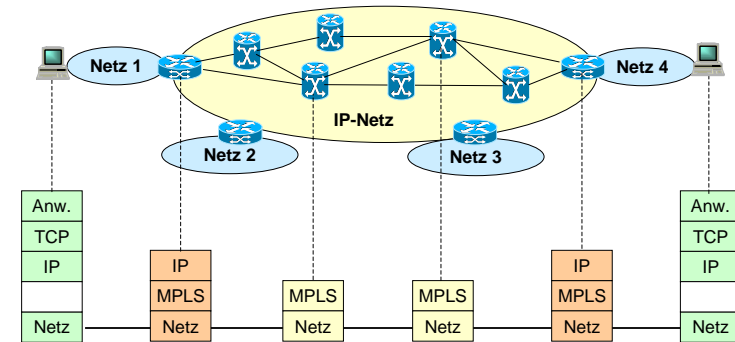


Datenkommunikation

Teil 3.2: Internetschicht: MPLS

O.Univ.Prof.Dr. Harmen R. van As

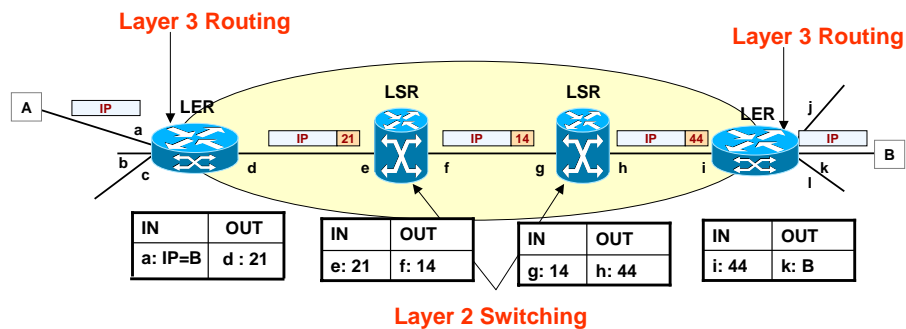
IP-Vernetzung mit MPLS



MPLS: Multiprotocol Label Switching

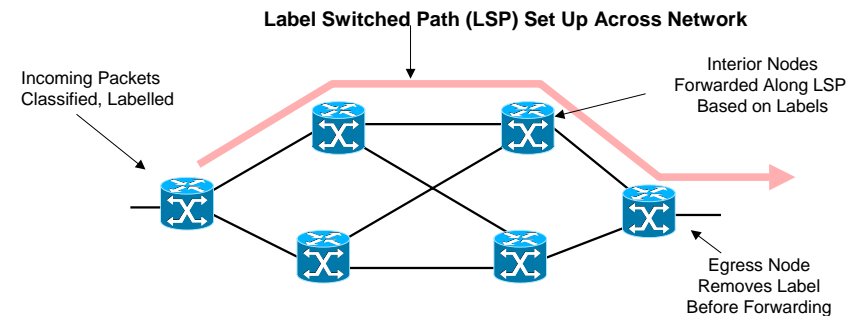
MPLS Concepts

- A label is a short, fixed length, locally significant identifier which is used to identify a FEC



IP Packet
IP Packet with label

Label Switched Path — Concept



Two types of Label Switched Paths:

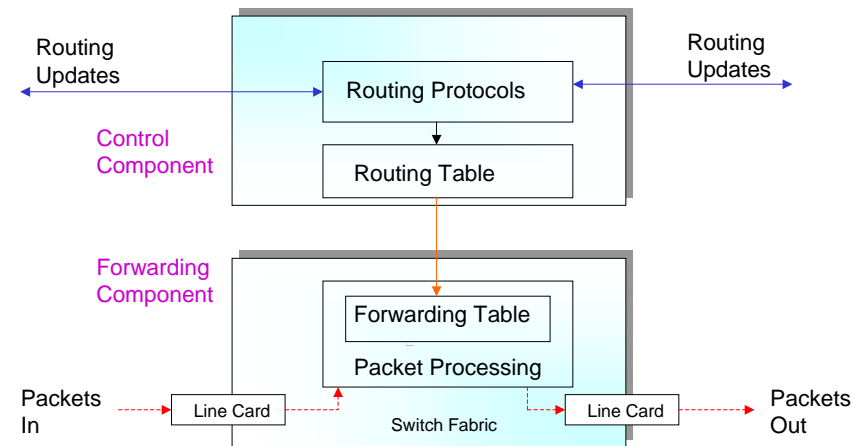
- Hop-by-hop
- Explicit Routing

LER & LSR

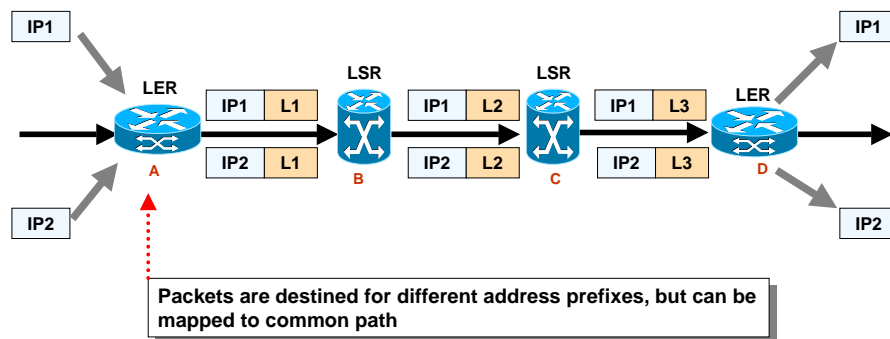
- **Label Edge Router (LER)**
 - Ingress LER examines inbound packets, classifies packet, adds MPLS header and assigns initial label
 - Egress LER removes the MPLS header and routes packet
 - Receives a “labelled” packet and routes the packet to the destination
 - Determines where and how a packet travels
 - Assigns a label
 - Passes the “labelled” packet to the next LSR/LER
- **Label Switching Router (LSR)**
 - Transit switch that forwards packets based on MPLS labels
 - Receives a “labelled” packet
 - Determines the next “hop” based on label
 - Assigns a new label
 - Passes the “labelled” packet to the next LSR/LER

Basic Concepts of MPLS

MPLS Architecture



Forwarding Equivalence Classes (FEC)



- **FEC** = “A subset of packets that are all treated the same way by a router”

FEC Example

