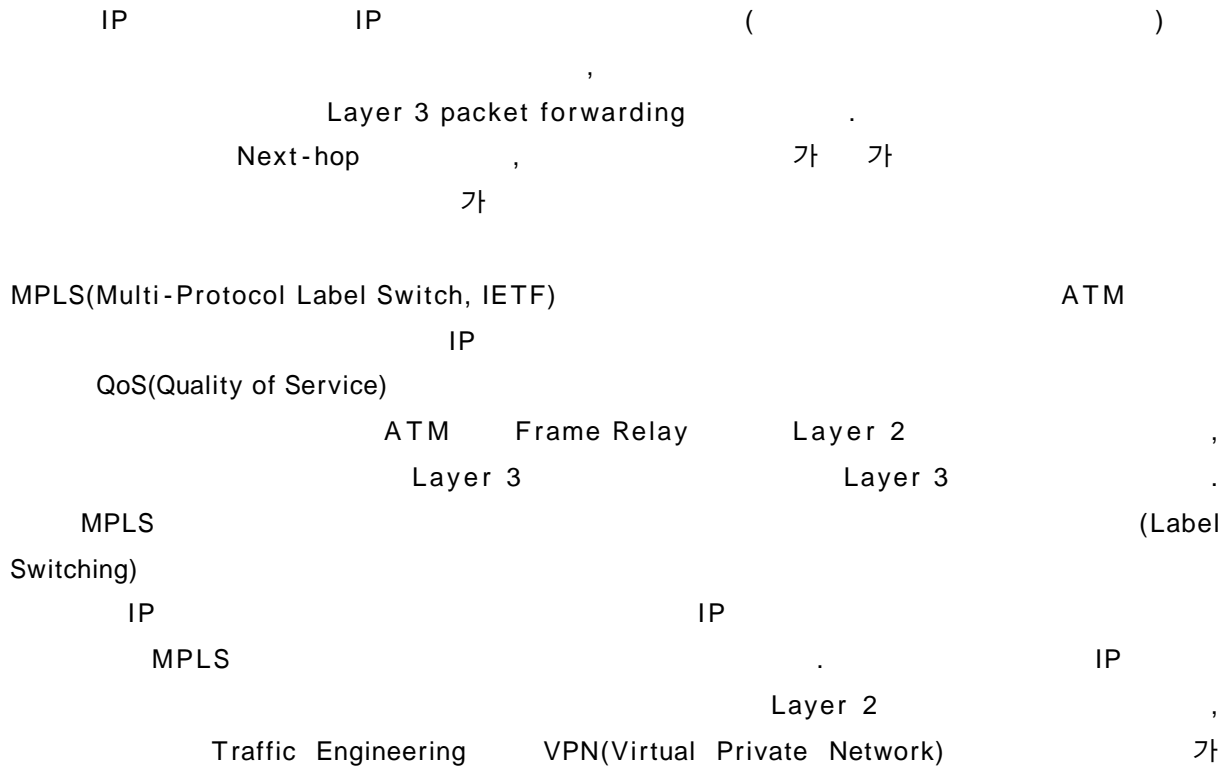


# ? MPLS



## ? IP Routing MPLS

- IP Routing
  - + IP Header Processing
    - IP packet hop TTL, Checksum, Routing Table
    - Lookup IP Header
  - + Longest Prefix Matching
    - IP packet hop Longest Prefix Matching
    - Routing Table Routing Table Lookup
  - + Hop-by-Hop Forwarding
    - Data Hop IP Header
    - Longest Prefix Matching Routing Table Lookup
    - Data
  - + Best Effort Service
    - Routing Protocol
    - Best Effort Service

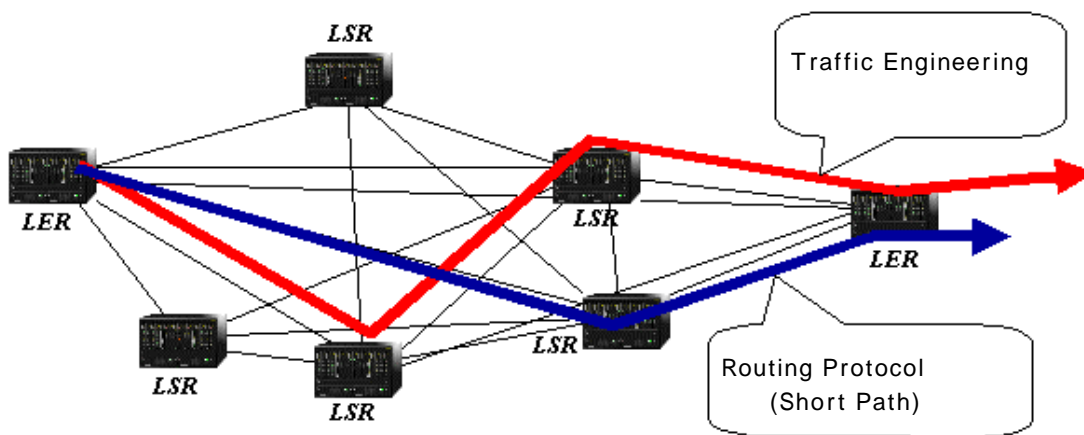
• MPLS

+ Performance/Price & High Speed Data Transfer

Platform packet Table Lookup 가

+ Traffic Engineering

Routing Protocol 가 LSP(Label Switching Path) Explicit Route Traffic Engineering LSP 가



+ Virtual Private Network

ISP (Internet Service Provider) VPN PPTP (Point-to-Point Tunneling Protocol), L2F (Layer 2 Forwarding), L2TP (Layer 2 Tunneling Protocol) MPLS LSP VPN 가 VPN

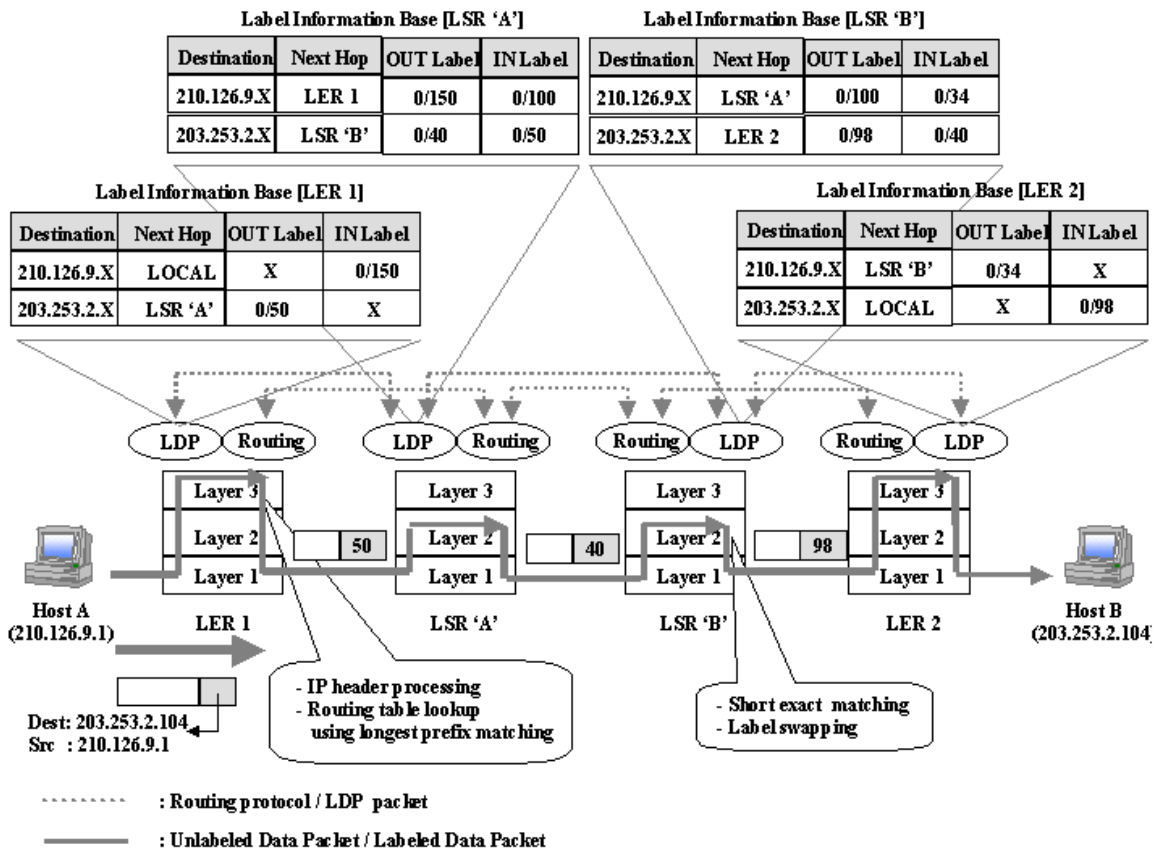
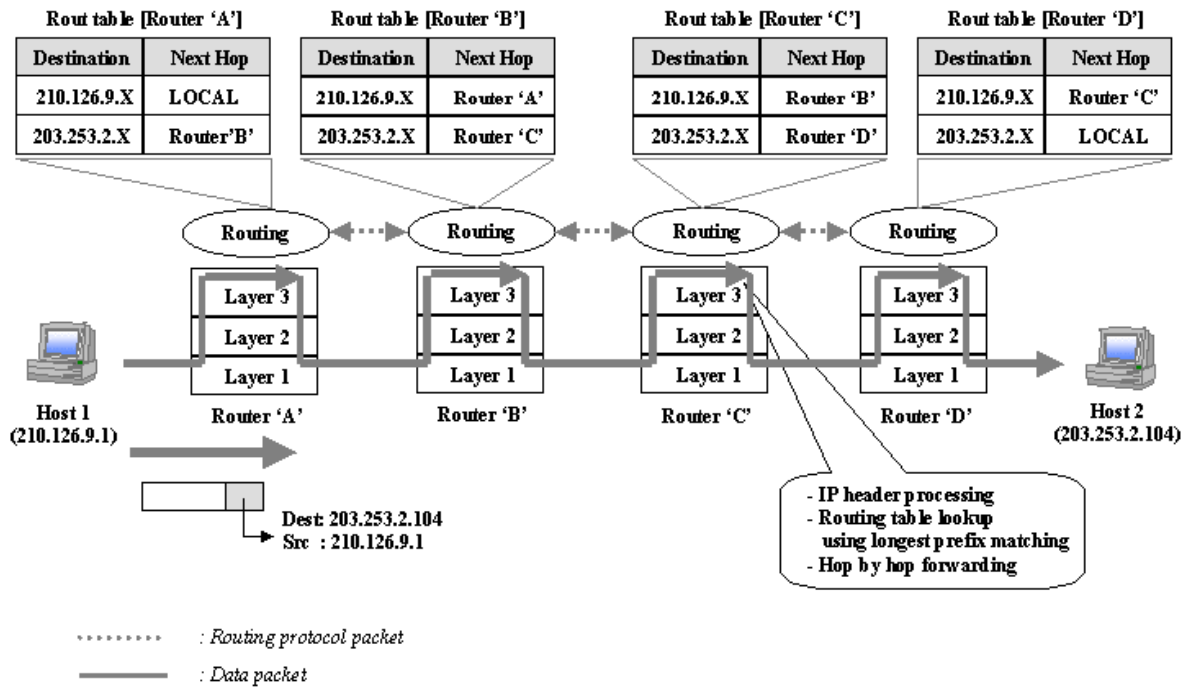
+ Multi-Protocol Support

MPLS Layer 3 Routing Protocol FEC\* IPv4, IPv6, AppleTalk, DECnet ATM, Frame Relay, Packet-Over-SONET, Ethernet Layer 2

\* FEC(Forwarding Equivalence Class)

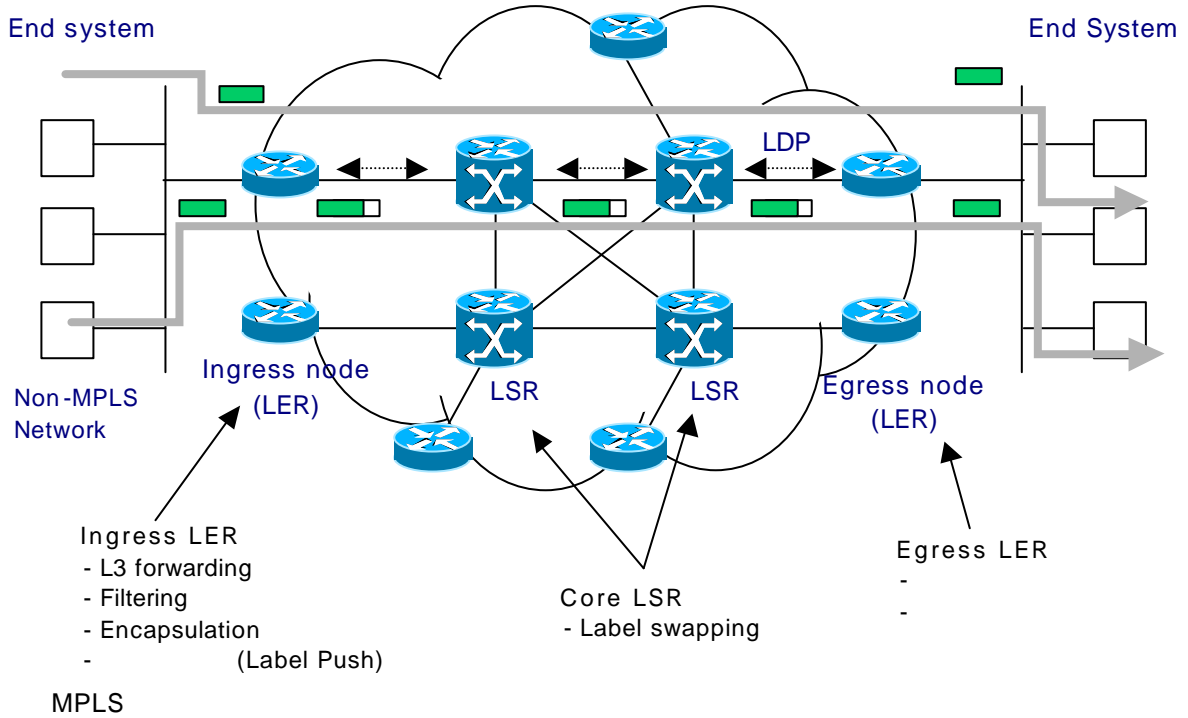
Forwarding IP(Layer 3) - Destination address prefix MPLS IP(Layer 3)

• IP MPLS



MPLS

# ? MPLS



## • MPLS

MPLS (Label Edge Router)      MPLS      non-MPLS      LER  
 LSR (Label Switch Router)

+ Ingress LER  
 - non-MPLS (destination IP address )

LSP (Label Switched Path)  
 - outgoing interface(Layer 2) ( )

+ LSR  
 - LER  
 Outgoing Interface (ATM VPI/VCI )

- ATM VPI/VCI      ATM Signaling Protocol      MPLS  
 LDP (LIB: Label Information Base)

+ Egress LER  
 - Egress LER

MPLS LSP LER Layer 3 packet forwarding  
 LSR Layer 2 forwarding ( ) , LER LSR  
 LDP (Label Distribution Protocol)

• Label

1. MPLS OSPF (Open Shortest Path First) BGP (Border Gateway Protocol)  
 LER LSR

2. MPLS signaling Protocol LDP (Label Distribution Protocol) (FEC)

3. MPLS ingress LER , LER , QoS  
 , LSP LSP LSR forwarding

4. egress LER forwarding. , ingress egress LER L3  
 가 , LSR 2

5. LSR

LSR LSR forwarding egress LER ,

? MPLS

• Forwarding Component

MPLS FEC ,

(Forwarding Component) 가 . MPLS

+ Short Exact Matching

MPLS longest prefix matching  
 short exact matching

가 .  
 + Label Swapping

가 . 2

MPLS LSR (Label Switch Router), FEC LSP (Label Switched Path)

- Control Component

MPLS RIP (Routing Information Protocol), OSPF (Open Shortest Path First), BGP (Boarder Gateway Protocol)

MPLS (Control Component) LSP / / 가

- + Label Assignment

가

- Traffic driven Label Assignment

FEC

가

- Control driven Label Assignmen

FEC

- + Label Distribution

LSR

LSR

가

- Explicit Label Distribution

IETF

가

LDP (Label Distribution Protocol)가

- Piggybacking on other control Message

PIM(Protocol Independent Multicast) ReSerVation Protocol)

OSPF, BGP, RSVP(Resource

IETF

가

RSVP

extension