

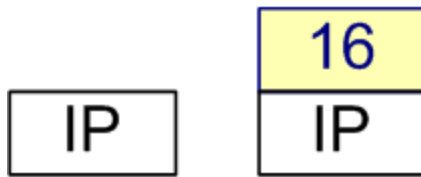


MPLS Basics – Label Switch Routers - Terminology

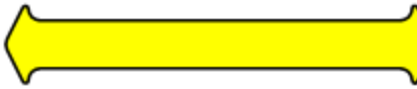
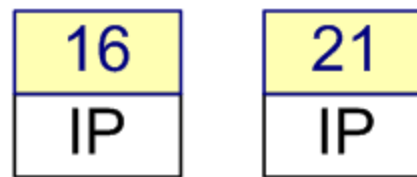


## MPLS Operations Review

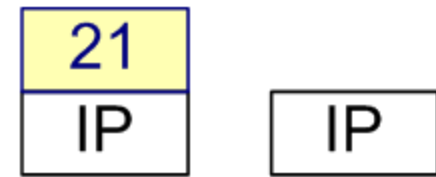
Push



Swap



Pop





## Terminology

**Label Switch[ing/ed] Router (LSR)\*** - “A device such as a switch or a router that forwards labeled entities based upon the label value. “

[http://www.cisco.com/en/US/docs/internetworking/technology/handbook/MPLS\\_Tag-Switching.html](http://www.cisco.com/en/US/docs/internetworking/technology/handbook/MPLS_Tag-Switching.html)

### **Types of LSRs:**

**Ingress LSR** - packets arrive unlabeled, leave labeled

**Egress LSR** - packets arrive labeled, leave unlabeled

**Intermediate LSR** - packets arrive labeled, leave labeled

**Imposing LSR** - packets arrive unlabeled, leave labeled

**Disposing LSR** - packets arrive labeled, leave unlabeled

**Edge LSR** - router at the edge of an MPLS network

**Provider Edge Router (PE or PER)** – Provider router at edge of MPLS network(peers with CE)

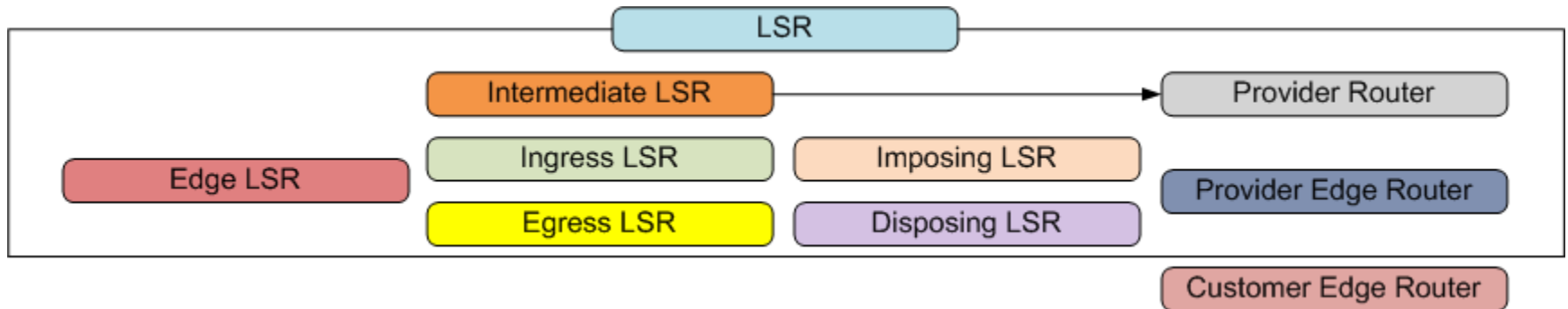
**Provider Router (P)** = Provider router which is not a PE(intermediate LSR)

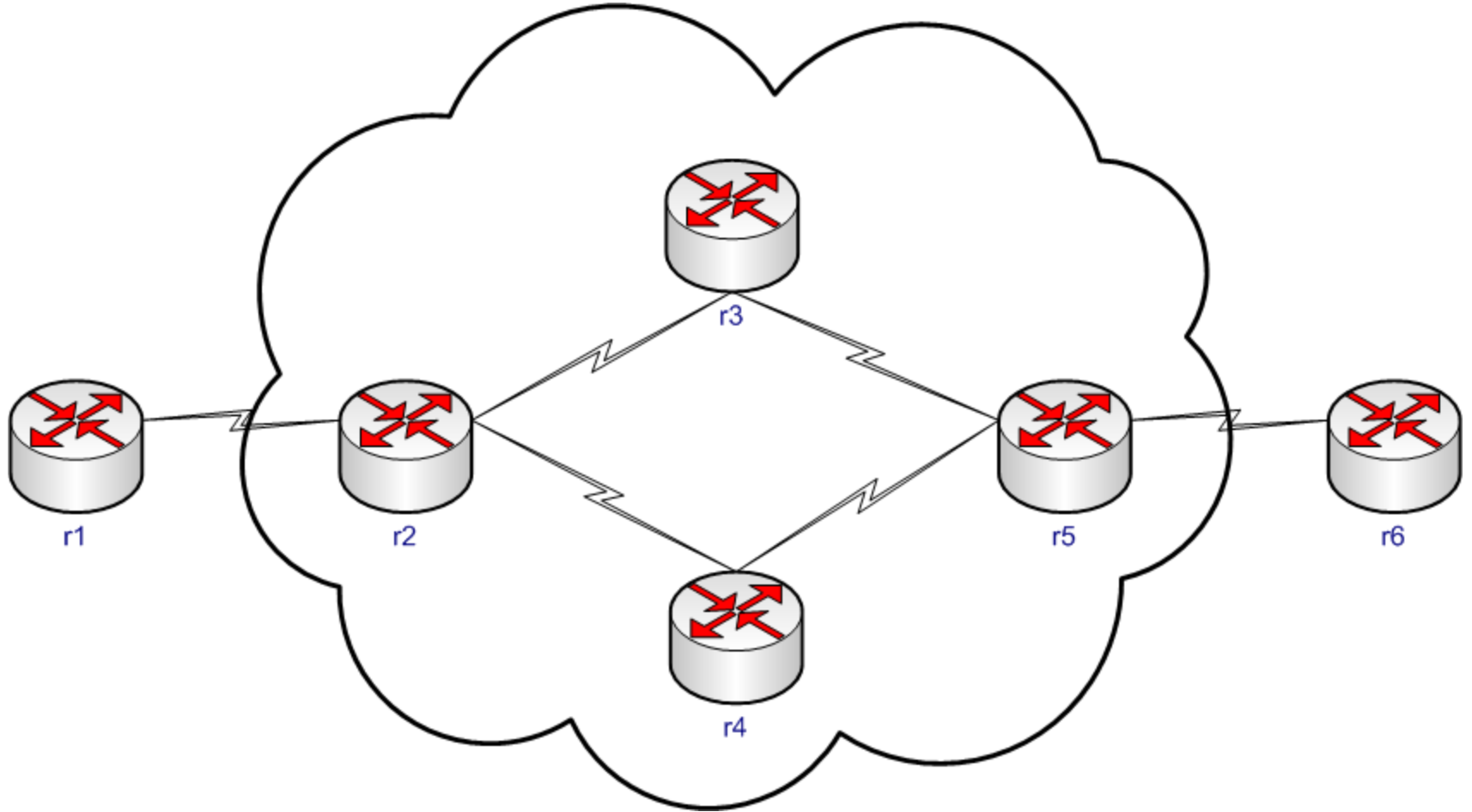
**Customer Edge Router (CE or CER)** – Router at edge of customer network(peers with PE)

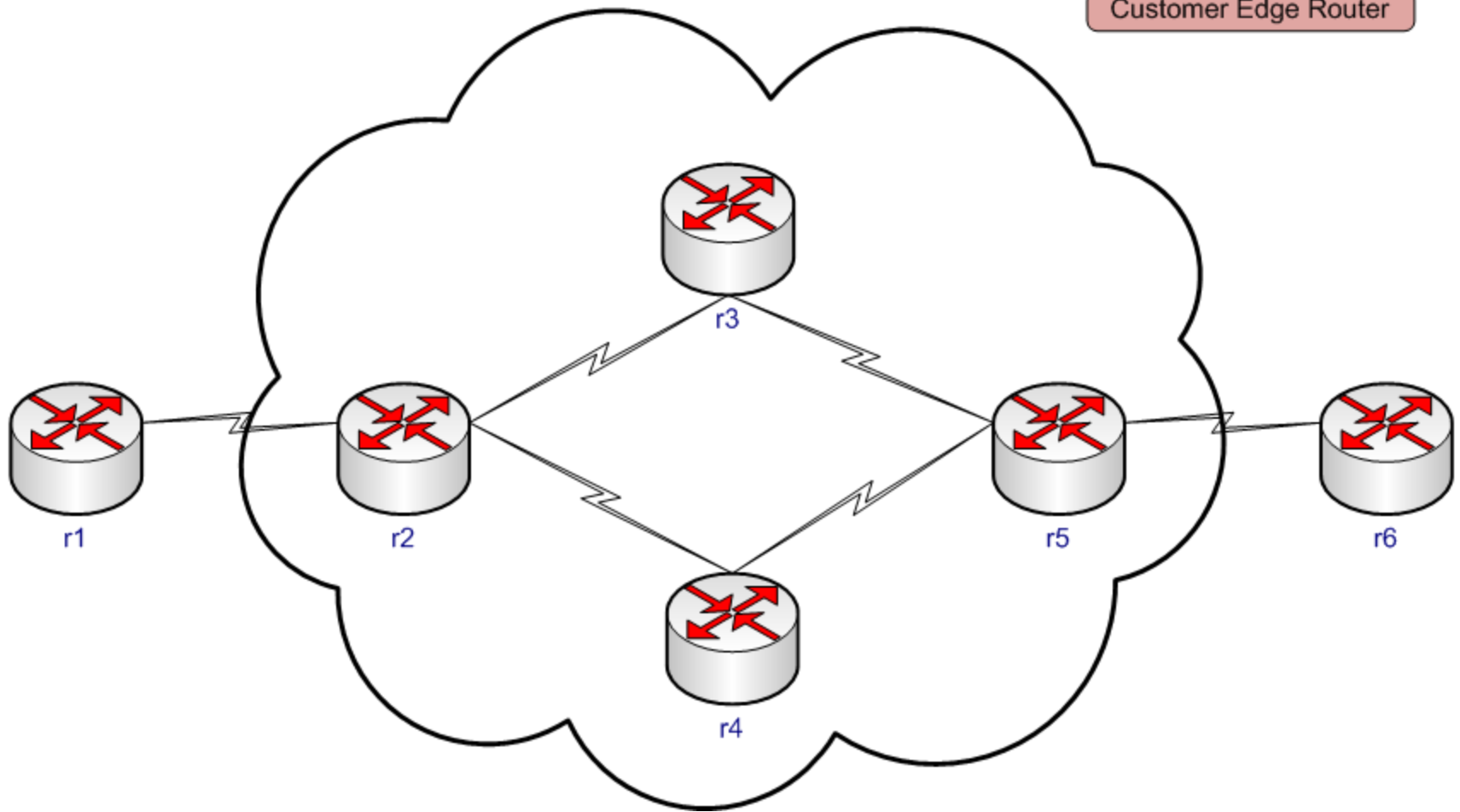
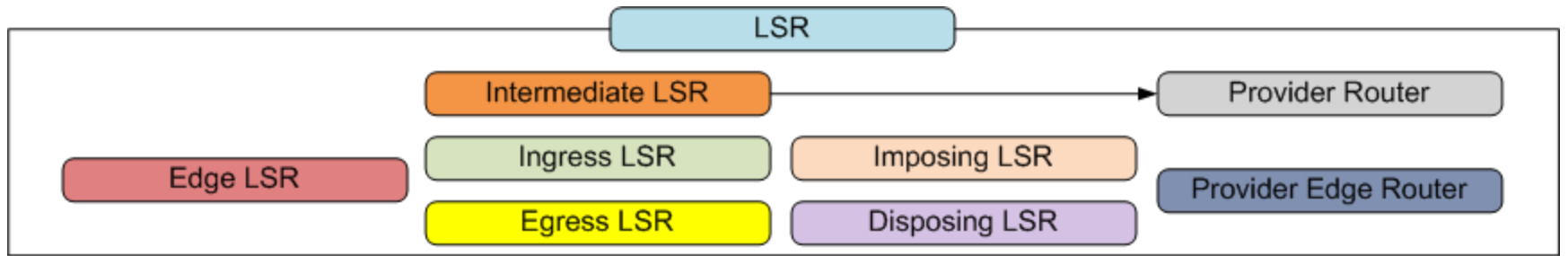
**\*I've seen LSR used as a synonym for ONLY P/Intermediate routers**

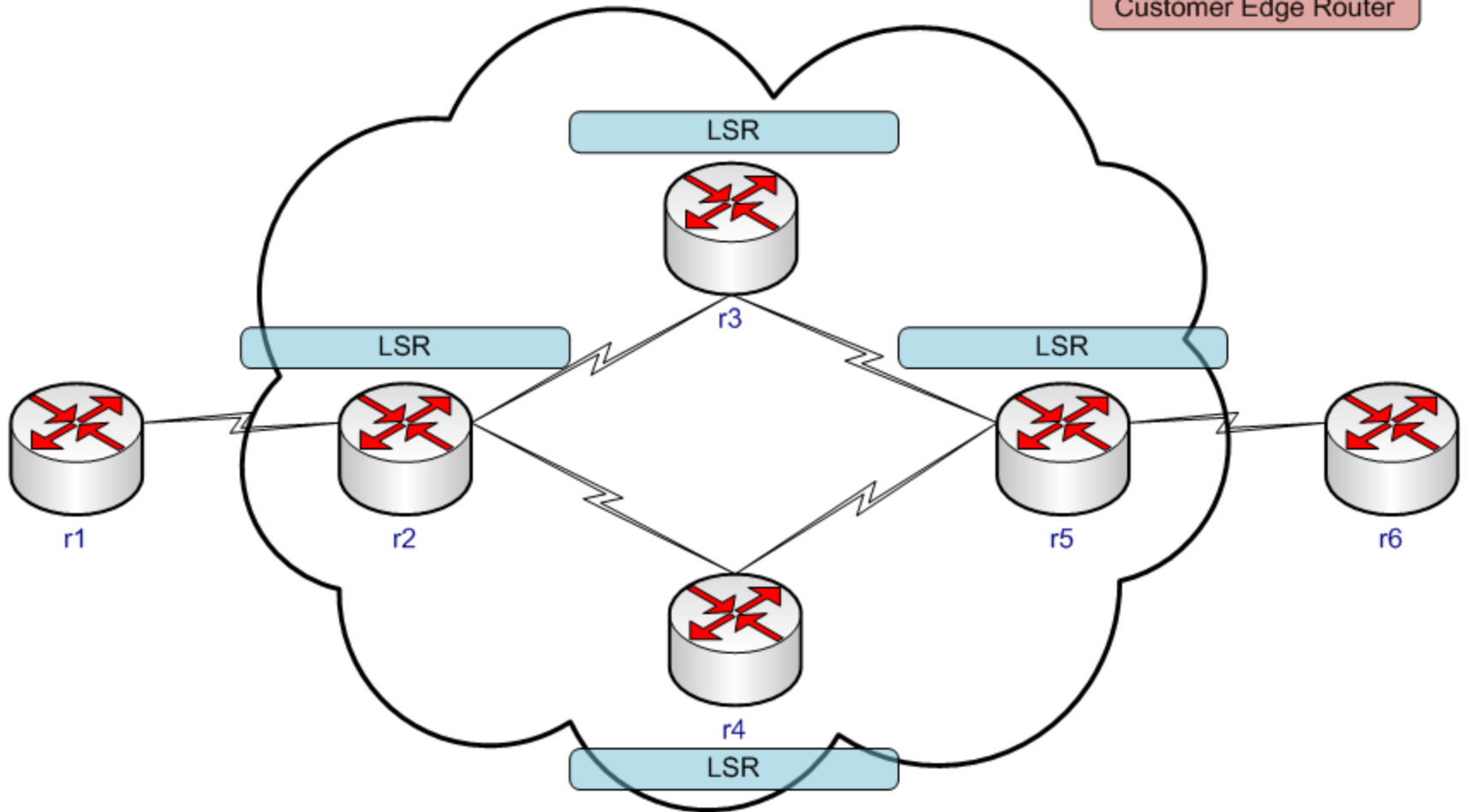
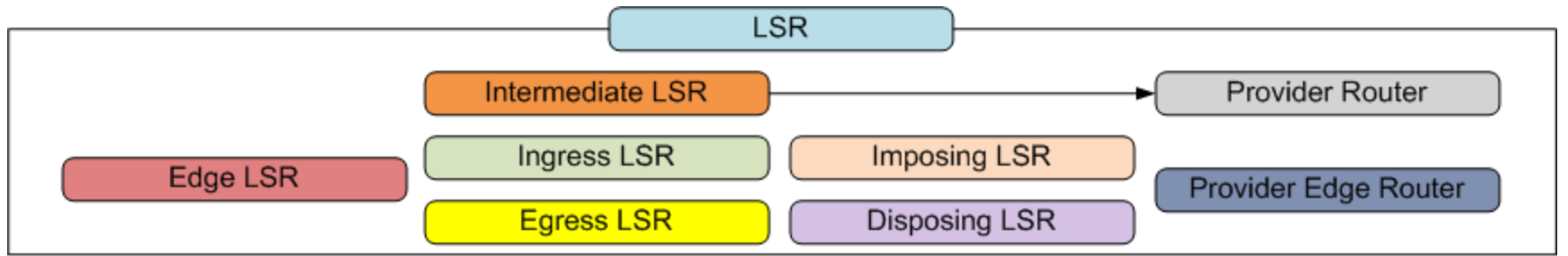


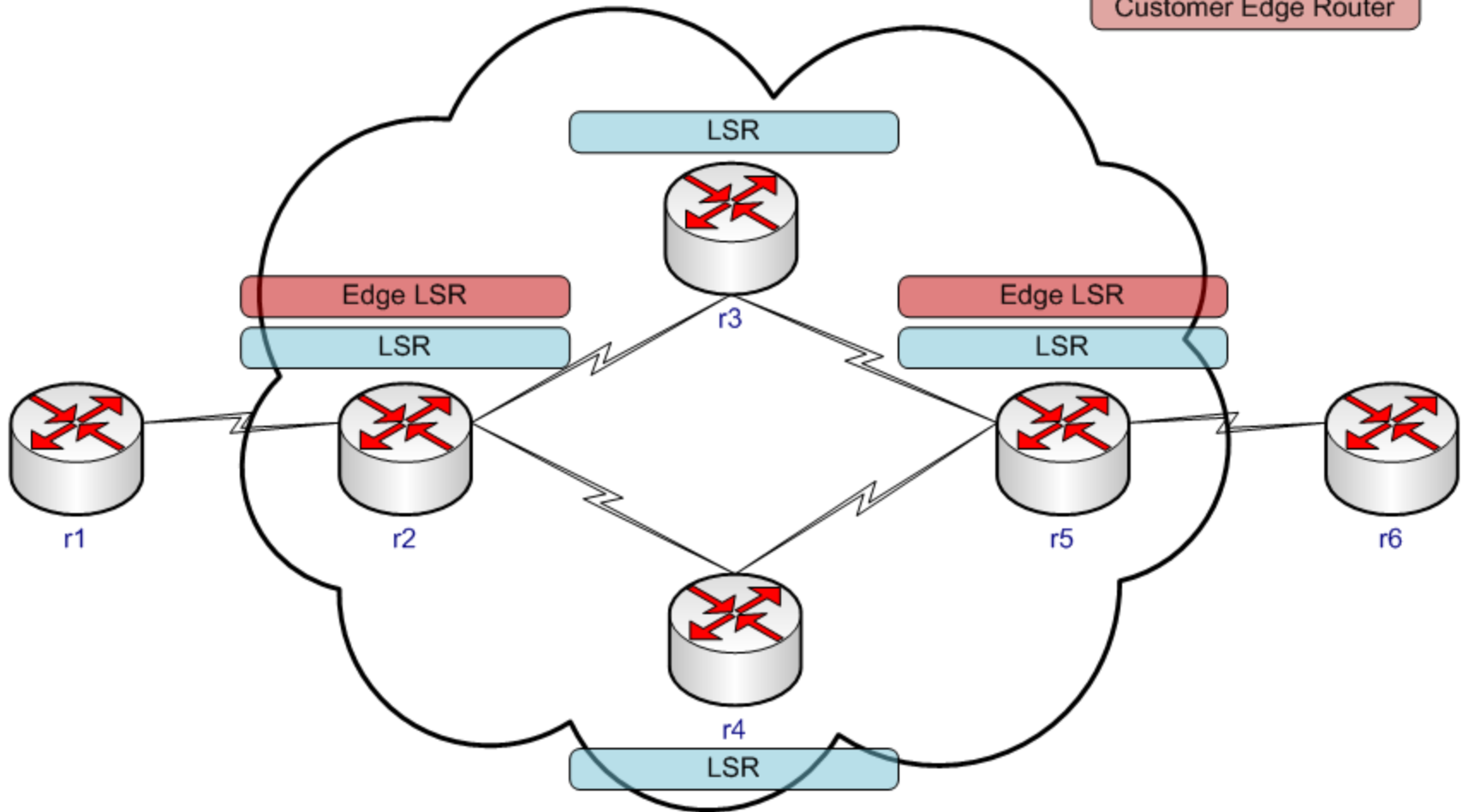
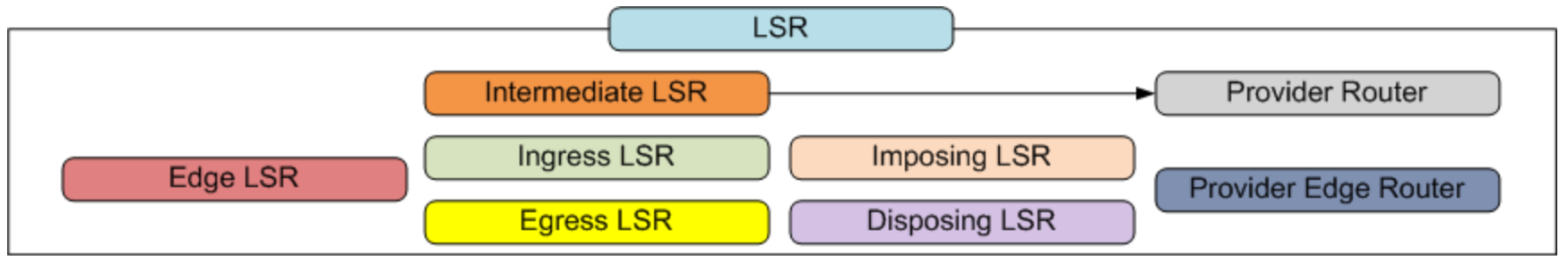
## LSR Terminology Relationships

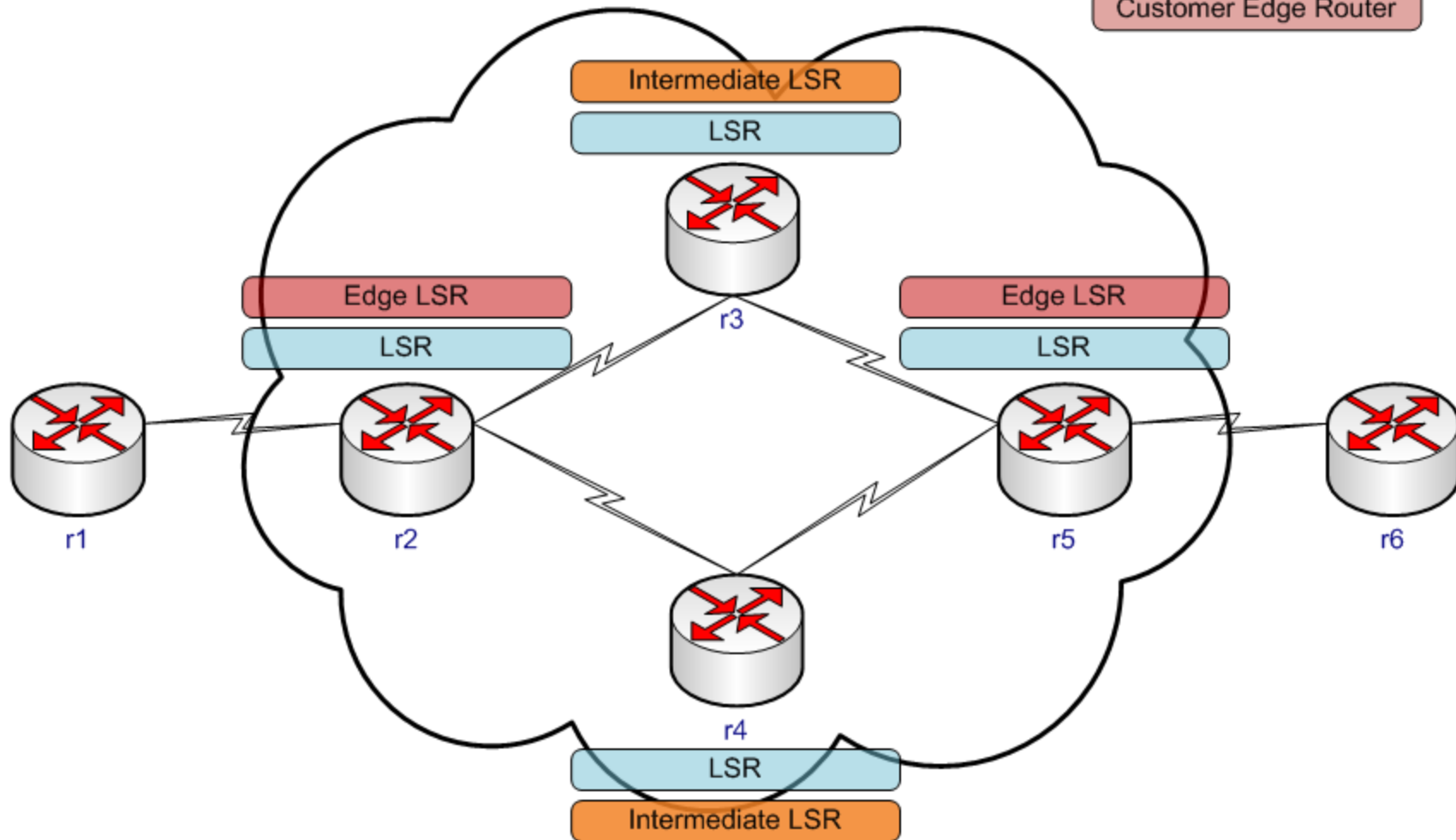
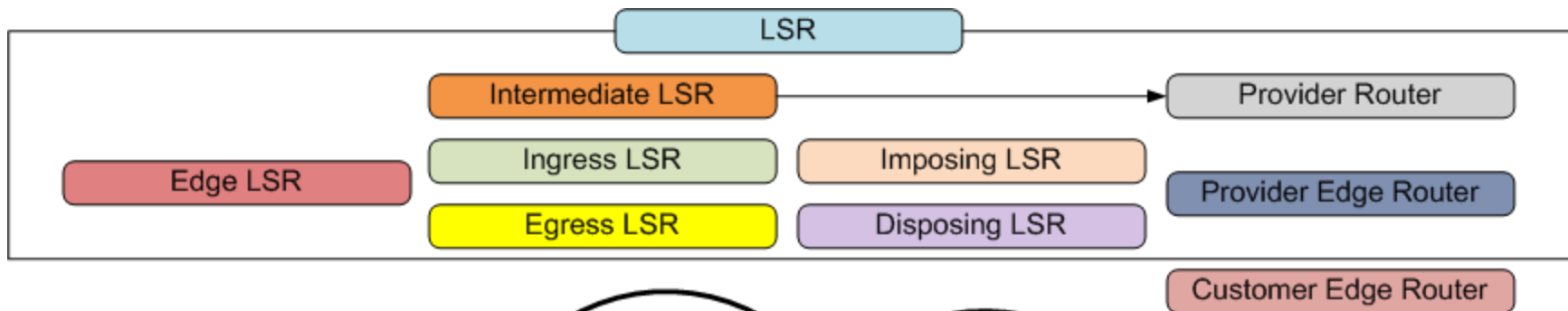


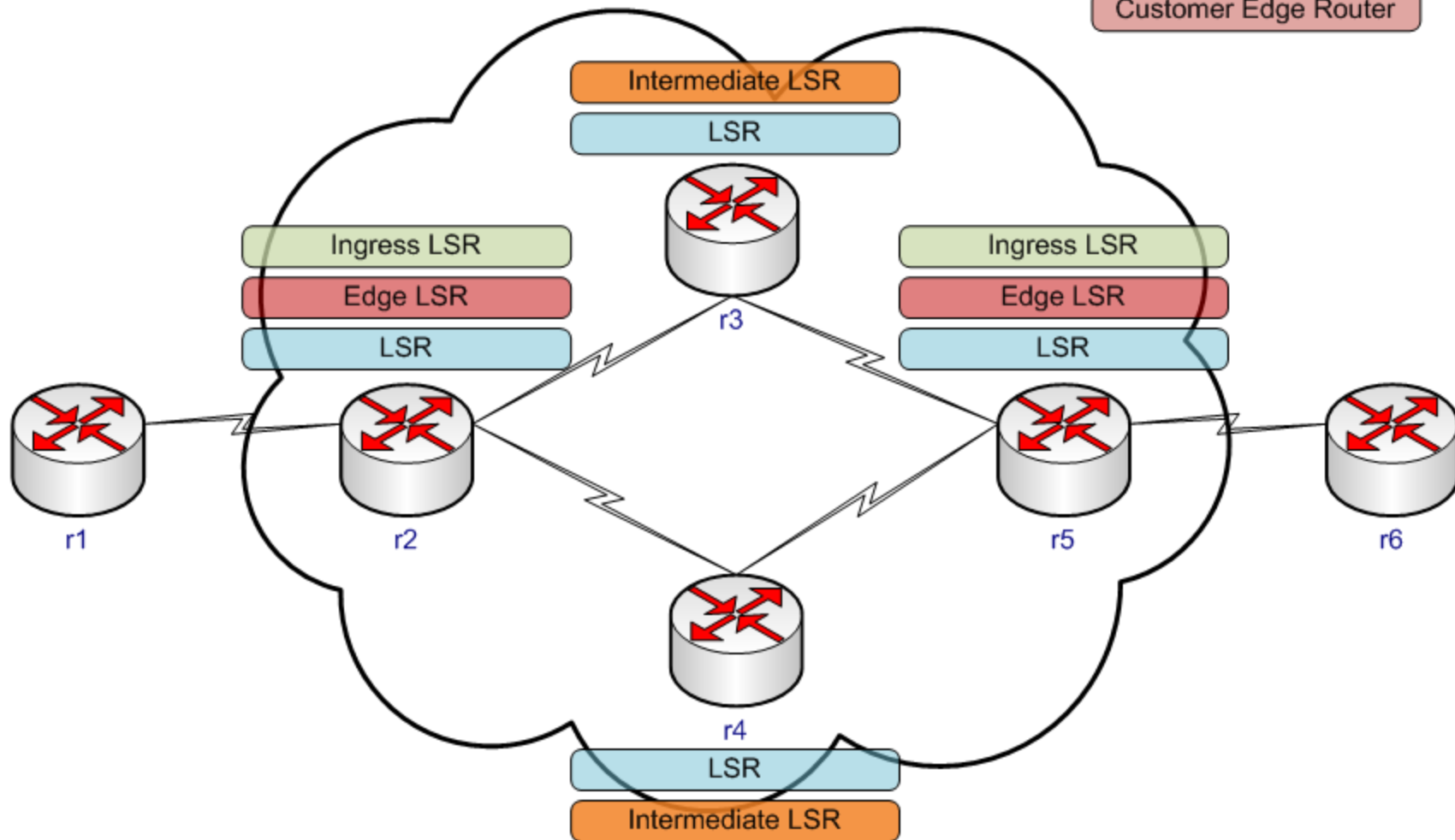
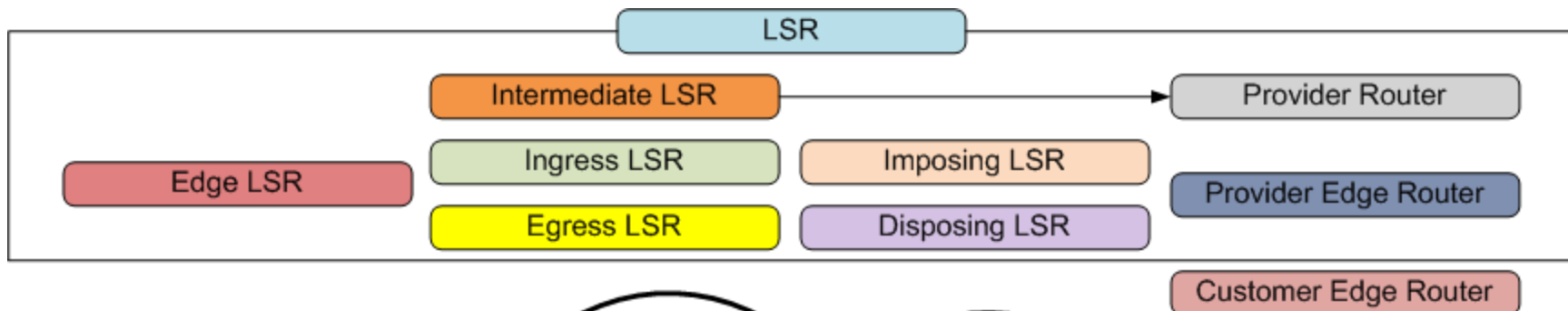


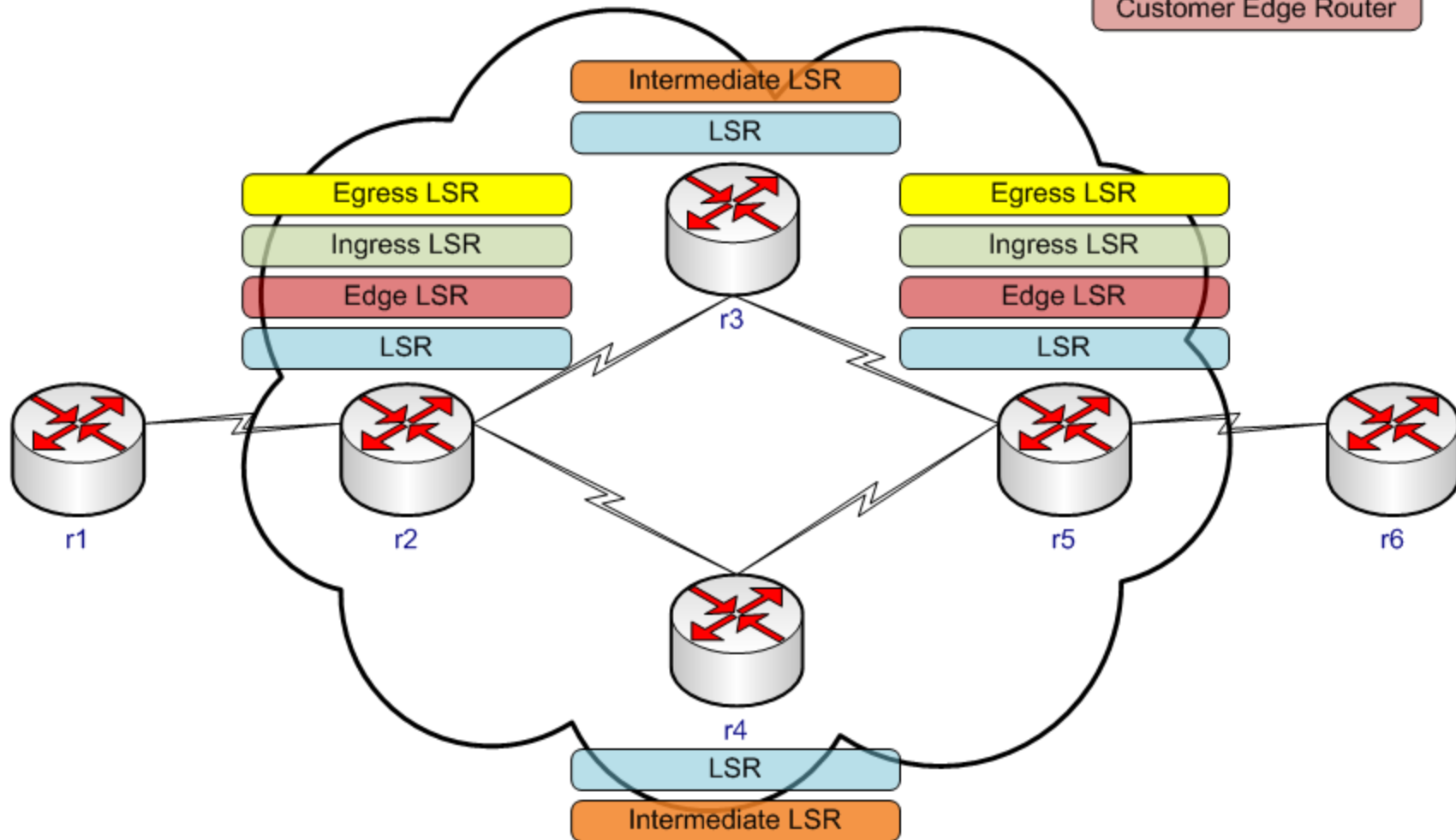
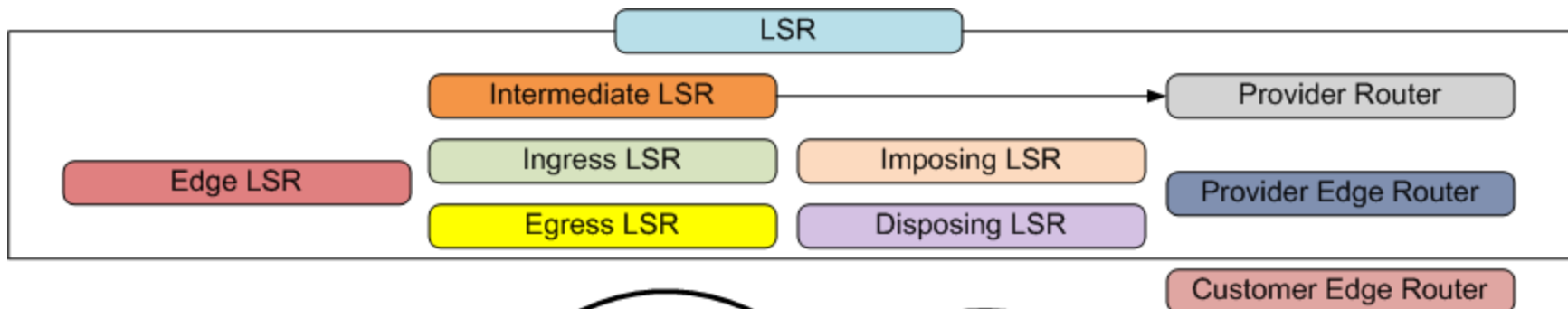


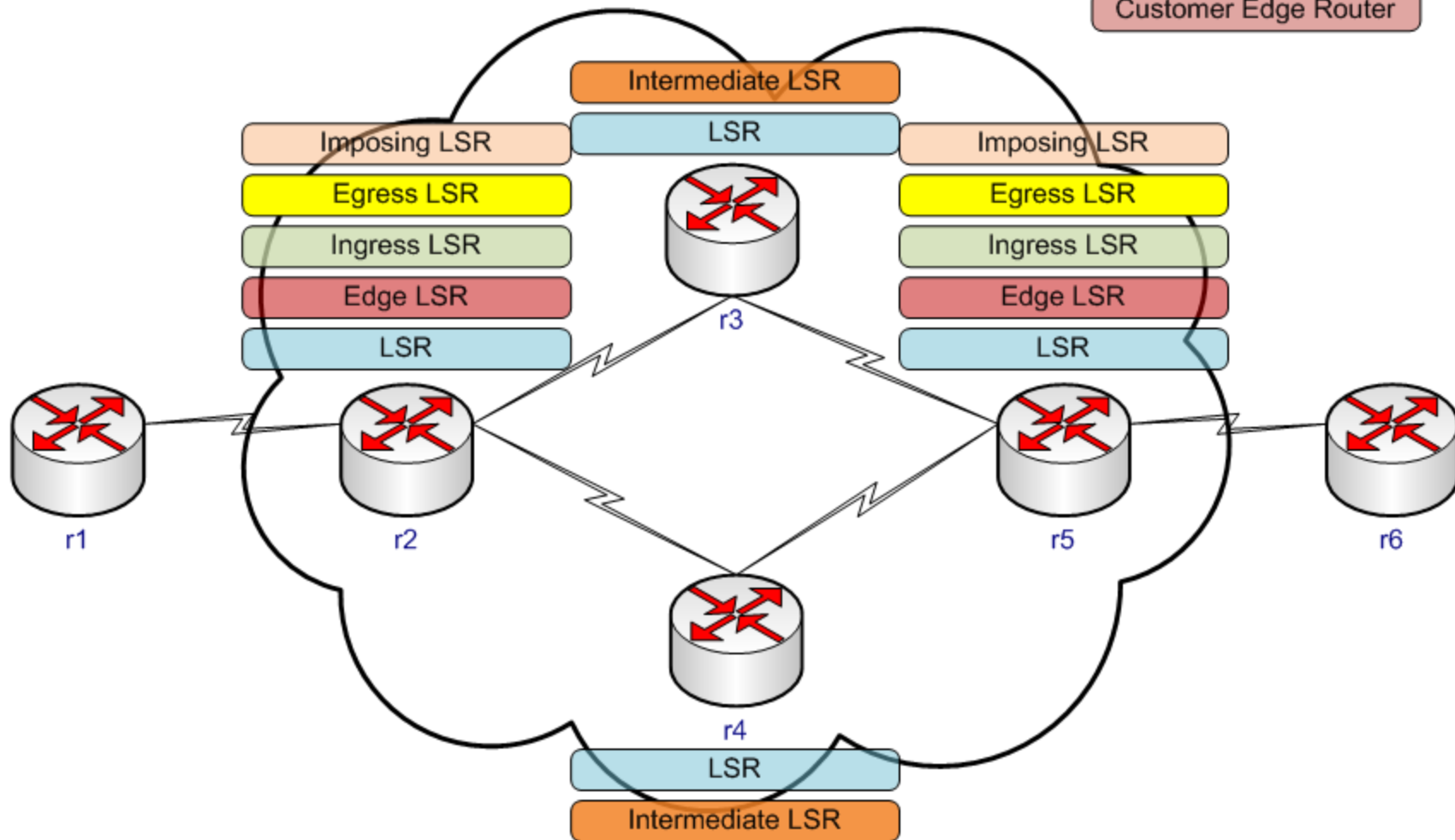
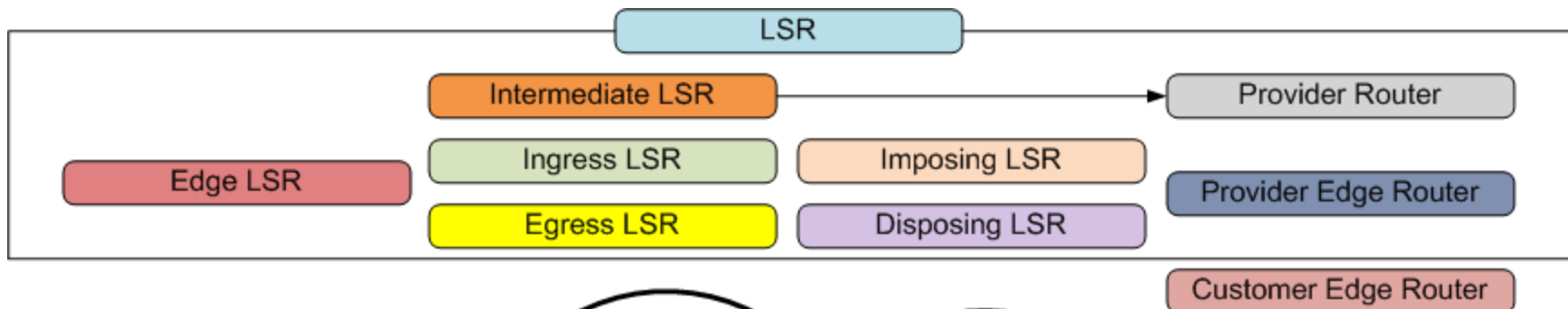


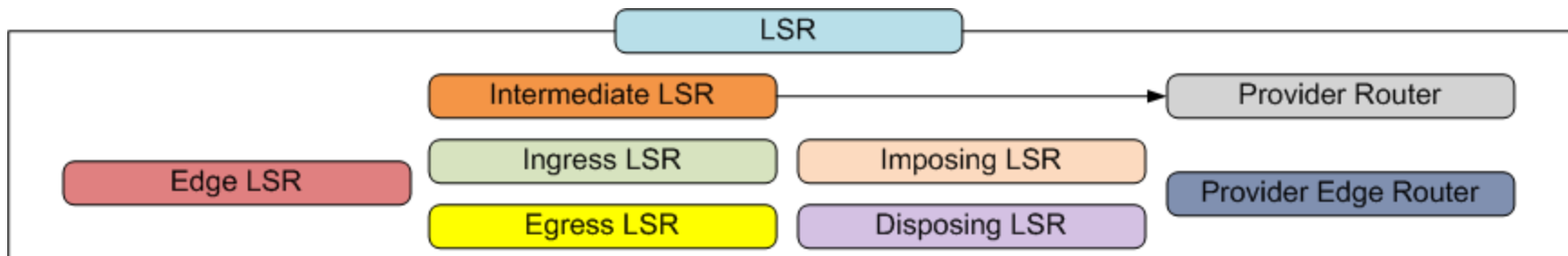




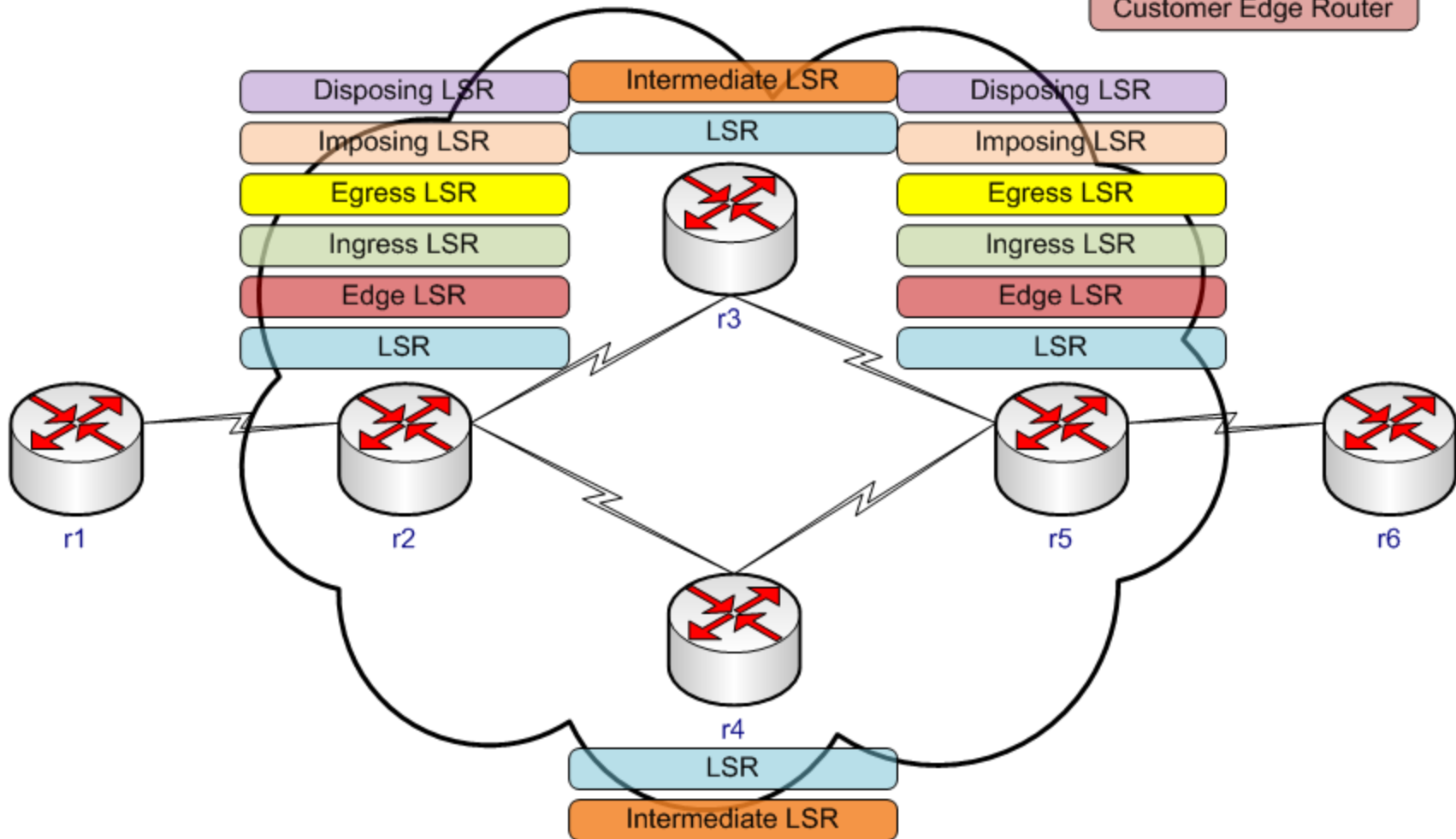


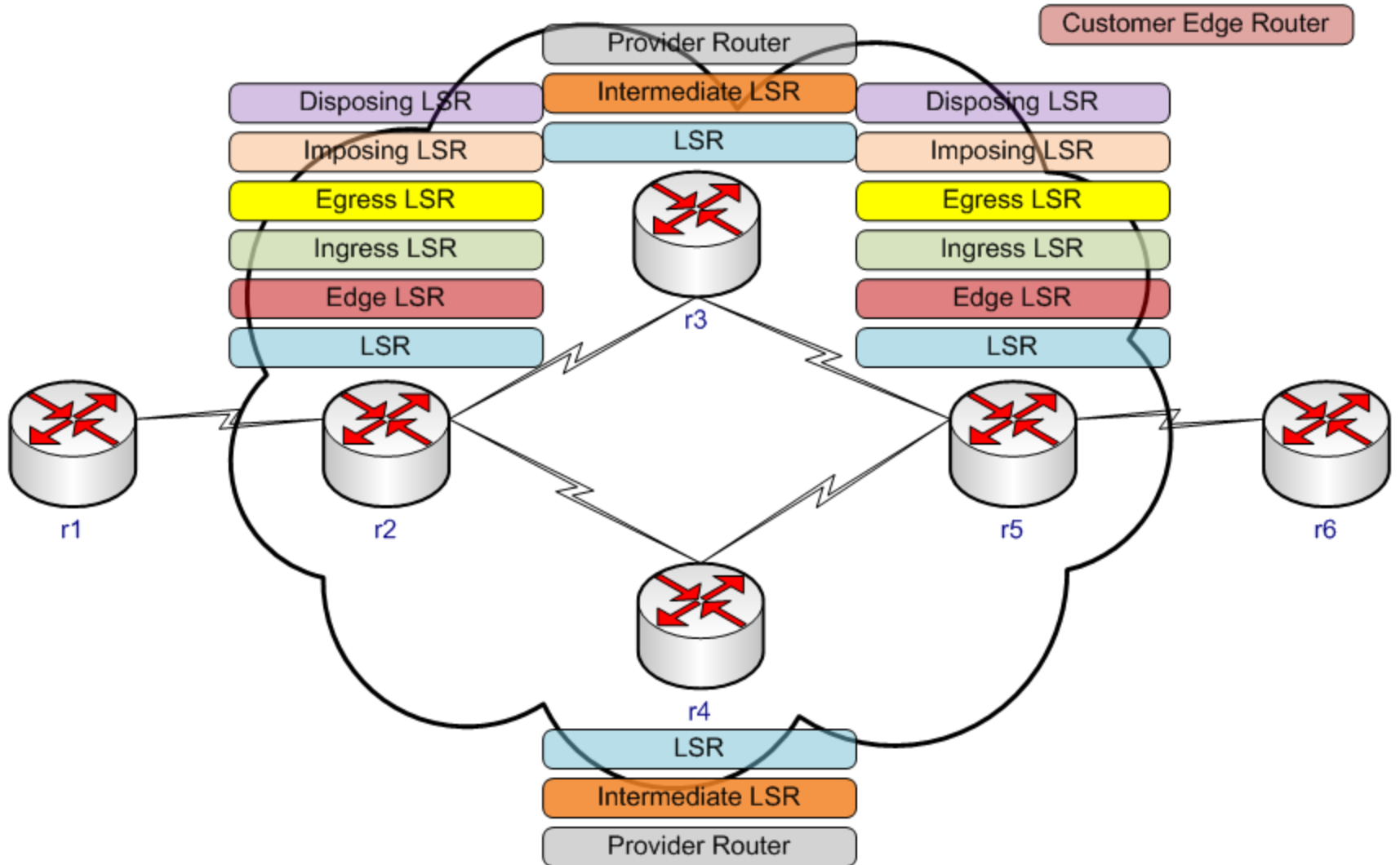
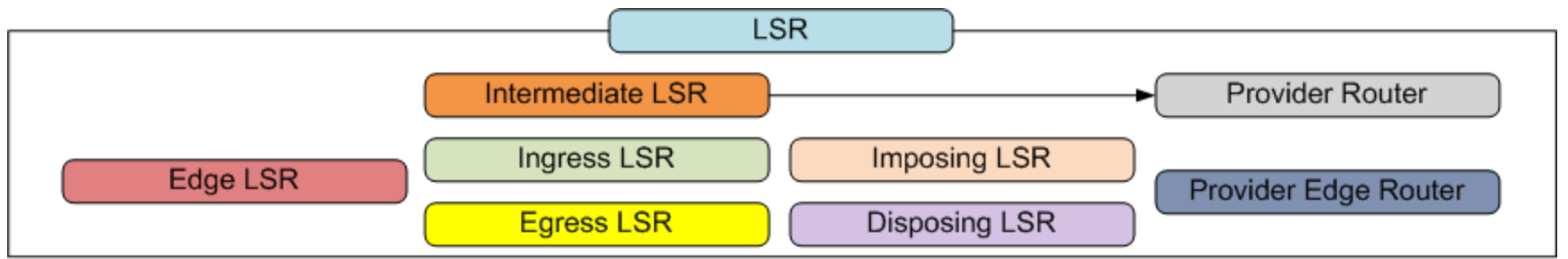


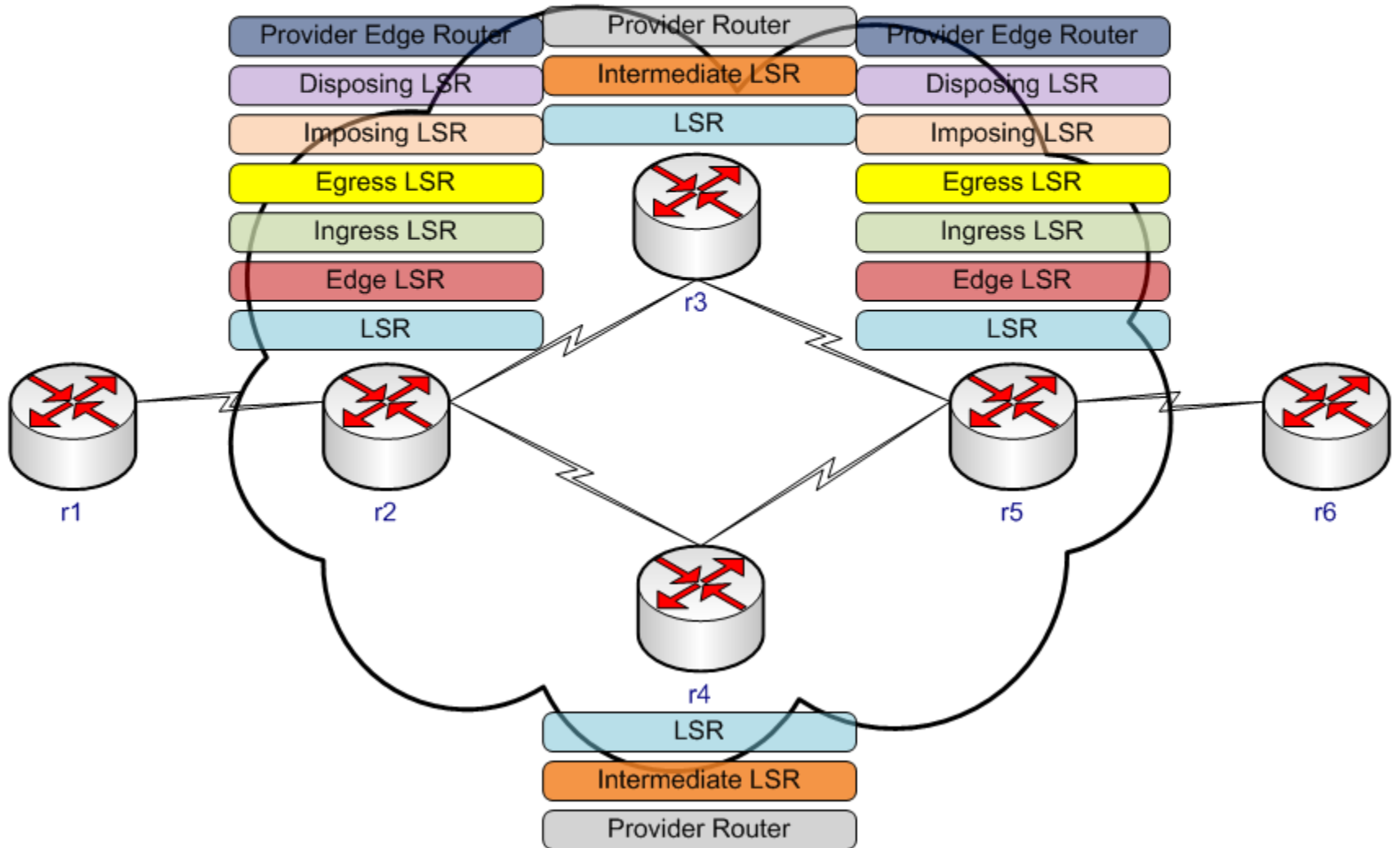
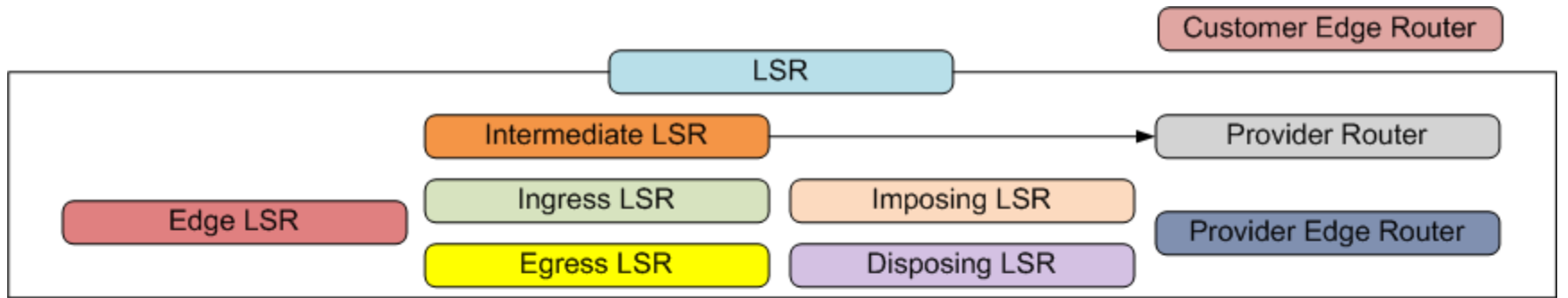


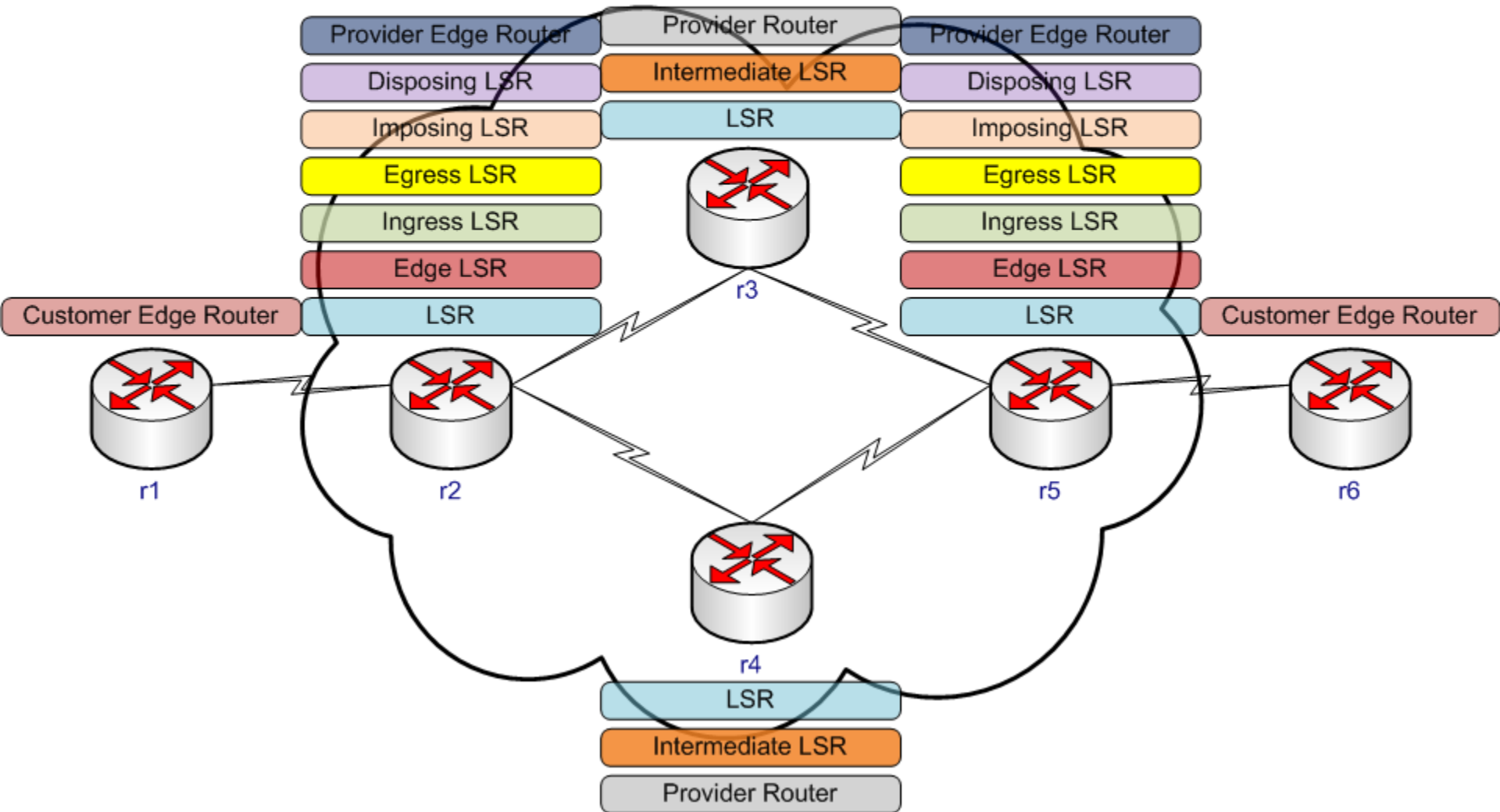
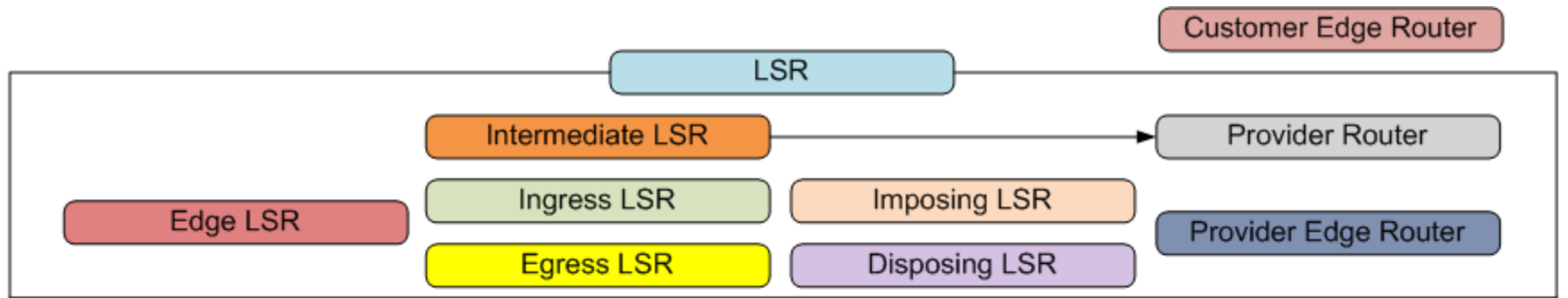


Customer Edge Router (Light Red)











## Upstream versus Downstream

Upstream and downstream are relative terms in the MPLS world. They always refer to a prefix (more appropriately, a Forwarding Equivalence Class).

**Data flows from upstream to downstream to reach a FEC.**

