

I2RS Overlay usecase

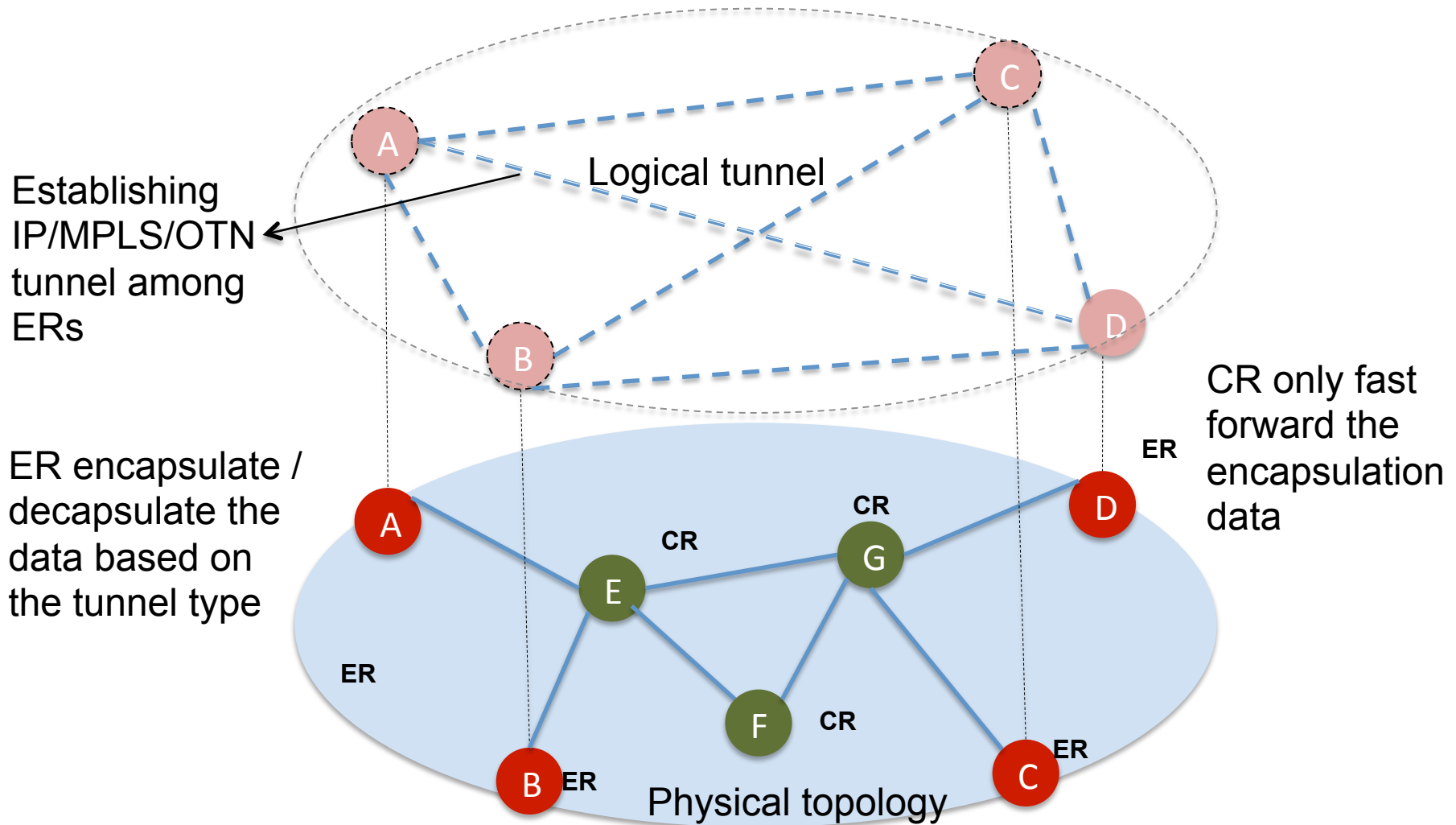
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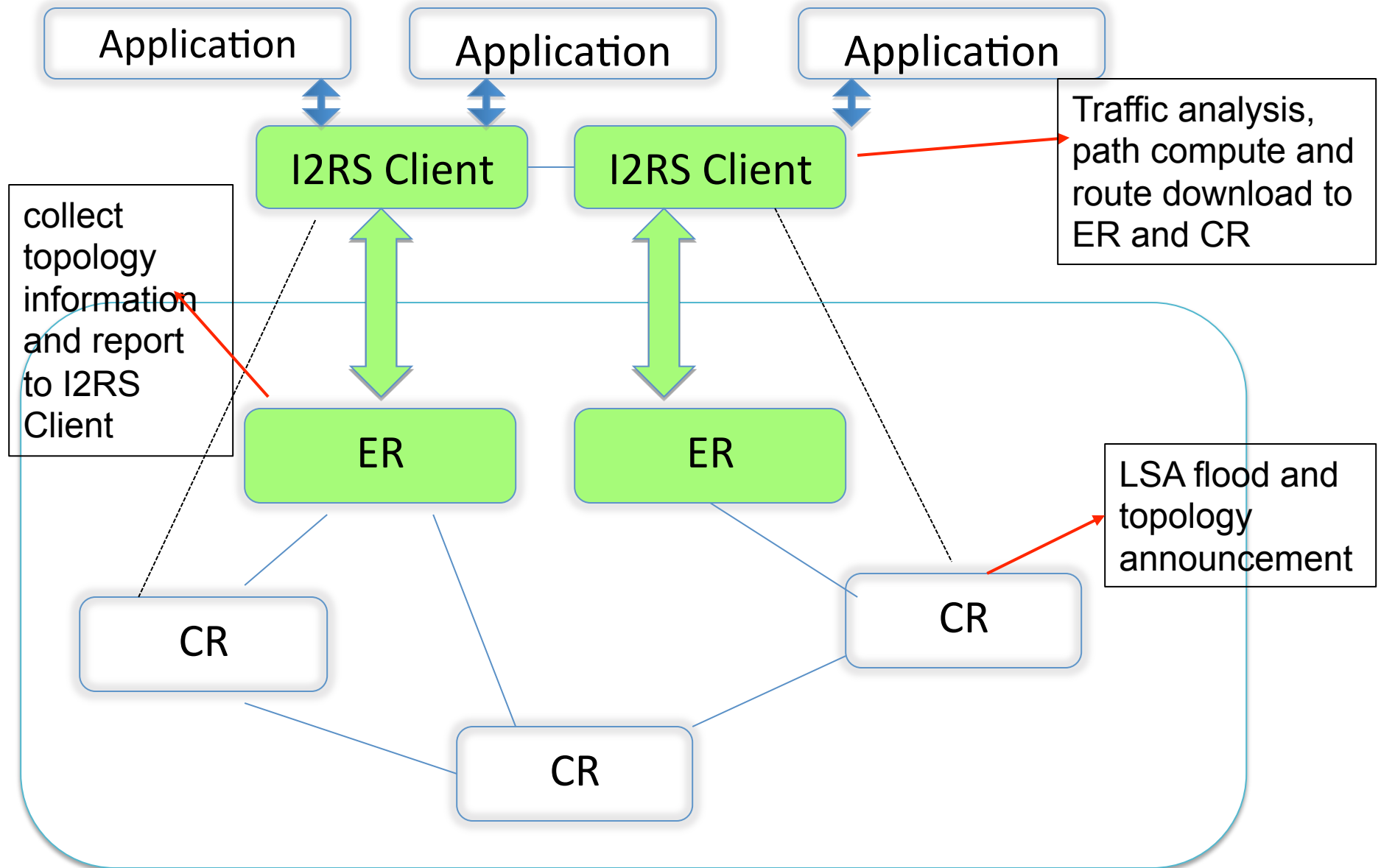
Goals

- Two types Router in the I2RS network
 - ER(Edge Router): Perform data encapsulation, topology and traffic report to control
 - CR(Core Router): Simplicity and cost down, focus only on fast data forwarding
- Provides an overlay structure
 - Benefit:
 - Lower cost down for Core Routers
 - Improved network security
 - Support of network virtualization

Overlay Model



Overlay Structure



Core Router (CR): high capability, and simplicity

- CR node(Core Node):
 - Mainly focus on fast forwarding of encapsulated data
 - The control plane is very simple
 - Topology announcement and flooding
 - For compatibility, Route computing may need to be performed, but this may not necessary

Edge Router (ER)

- The Requirement for ER:
 - Use Access authentication, authorization, and resource controller
 - Topology management
 - Policy management
 - Route and signal protocol
 - Tunnel management control
 - Traffic analysis and report
 - Service Management

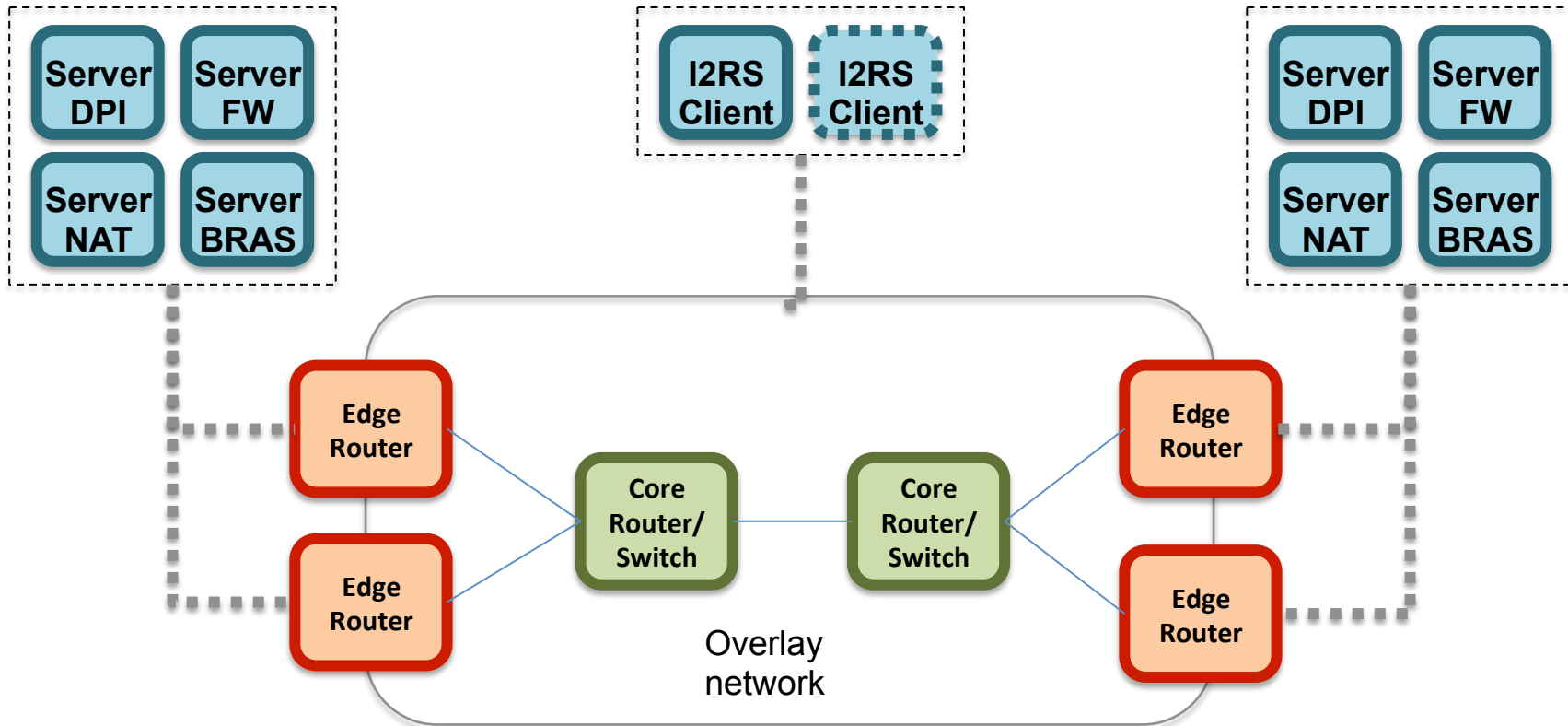
Network Virtualization (NV)

- The ERs may support many services, and be complex
- The Network Virtualization for ERs (control and forward elements virtualization)
 - Reduce ER complexity and equipment costs
 - Flexible and fast new services deployment
 - Increase scalability and reliability
 - Easy for function combination, achieving co-existence with hardware based network platform
 - Rapid Service prototyping
 - Service/Access agility

Network Virtualization

- Requirements (control and forward elements virtualization)
 - Tunnel gateway elements: IPSec/SSL VPN gateway
 - Traffic analytics: DPI, QoS measurement, SLA agent
 - Converged and network-wide function: AAA Server, policy control and charging platform
 - Security function: Firewalls, virus scanners, intrusion detection and prevention systems, spam protection

Overlay + Network Virtualization Structure



The Server DPI(FW, NAT) is located in the application model in the I2RS structure

Next Step

- Comments and feedback?
- Call for WG adoption?

Thank you!!!!