What is a Logical Router?

• A Logical Router (LR) is a router architecture that divides the physical resources of one router into multiple independent routers within one platform
• Each LR could have its own control plane
• Each LR is configured and operated, independently
• Enables service isolation to support different functional and organizational requirements
LR Architectural Considerations

- Control plane - how are resources allocated?
  - CPU, memory, disk

- Forwarding plane implementation?
  - Inter-LR communication implementation?
  - Shared forwarding plane?

- LR power management

- Inter-LR security

- LR operational model

- Single-point of failure
Logical Router Applications

• Organizational separation
  – Abilene - lr-0
  – Engineering and Science Research - lr-1
  – Health Science Research - lr-2
  – K20 - lr-3

• Functional separation
  – IPv6 - lr-4
  – MPLS - lr-5
  – VoIP - lr-6
  – Observatory context #1 - lr-7
  – Observatory context #2 - lr-8
LR Topology

Backbone

Abilene Ir-0
Health Sciences Ir-1
VoIP Ir-N

Logical Router Architecture

Switched Network

RON

Campus

Routed Network

Switched Network

Optronics
Optronics
Optronics
Optronics