

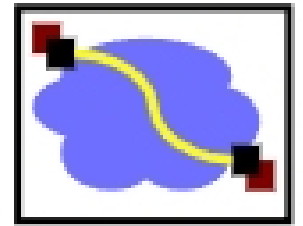


15-441 Computer Networking

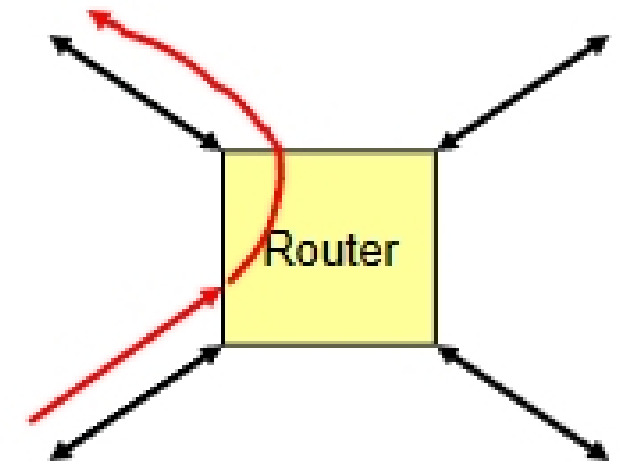
Lecture 10: Intra-Domain Routing

RIP (Routing Information Protocol) &
OSPF (Open Shortest Path First)

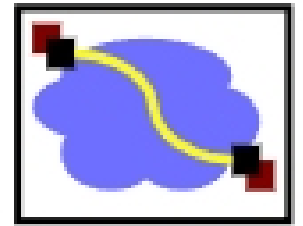
IP Forwarding



- The Story So Far...
 - IP addresses are structured to reflect Internet structure
 - IP packet headers carry these addresses
 - When Packet Arrives at Router
 - Examine header to determine intended destination
 - *Look up in table to determine next hop in path*
 - Send packet out appropriate port
- This/next lecture
 - How to generate the forwarding table



Graph Model



- Represent each router as node
- Direct link between routers represented by edge
 - Symmetric links \Rightarrow undirected graph
- Edge “cost” $c(x,y)$ denotes measure of difficulty of using link
 - delay, \$ cost, or congestion level
- Task
 - Determine least cost path from every node to every other node
 - Path cost $d(x,y)$ = sum of link costs

