

INTRODUCTION TO INTERNET ENGINEERING

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Routing and Reliable Transport in TCP/IP Networks

Outline

1. Routing in IP Networks
 - OSI reference model layers 3 and 4
 - The Internet Protocol and IP networks
 - Routing tables and forwarding
 - Distance vectors and the Routing Information Protocol (RIP)
 - Link state methods and Open Shortest Path First (OSPF)
2. Algorithms for Shortest Path Calculations
 - Sequential optimisation and dynamic programming (DP)
 - Distributed Bellman-Ford algorithm
 - Dijkstra's algorithm
 - Linear algebraic interpretation
3. Operation of the Transmission Control Protocol (TCP)
 - Structure and role of TCP
 - Slow-Start and Congestion Avoidance
 - TCP Reno and Vegas
 - TCP as a feedback control system