

1. Record Nr.	UNINA9910141636903321
Autore	Perez Andre
Titolo	IP, Ethernet, and MPLS networks : resource and fault management / / Andre Perez
Pubbl/distr/stampa	London, England ; ; Hoboken, New Jersey : , : ISTE : , : Wiley, , 2011 ©2011
ISBN	1-118-61720-7 1-118-61729-0 1-118-61688-X
Edizione	[1st edition]
Descrizione fisica	1 online resource (288 p.)
Collana	ISTE
Disciplina	004.6
Soggetti	Computer networks - Management Computer networks - Quality control Resource allocation Fault-tolerant computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Copyright Page; Table of Contents; Preface; Chapter 1. Network Operation; 1.1. Basic concepts; 1.1.1. Layered structure; 1.1.2. LANs; 1.1.3. WANs networks; 1.1.4. Protocol architecture; 1.1.5. Addressing principles; 1.2. IP technology; 1.2.1. Routing; 1.2.2. The IPv4 protocol; 1.2.3. The IPv6 protocol; 1.3. The MPLS technology; 1.3.1. Label switching; 1.3.2. Tables in the LSR; 1.3.3. The PHP function; 1.3.4. The format of the MPLS header; 1.3.5. Encapsulation of a labeled packet; 1.4. The ICMP; 1.5. Ethernet technology; 1.5.1. The physical layer; 1.5.2. The data link layer Chapter 2. Characterizing Quality of Service2.1. Quality of service functions; 2.2. Quality of network operation; 2.2.1. Availability; 2.2.2. Admissibility; 2.2.3. Loss ratio; 2.2.4. Delay; 2.2.5. Jitter; 2.2.6. Classes of service; 2.2.7. Bandwidth; 2.3. Requirements of applications; 2.3.1. Voice; 2.3.2. Video; 2.3.3. Application and control data; 2.4. The service contract; 2.4.1. The "Enterprise" section; 2.4.2. The "Service" section; 2.4.3. The "Technology" section; 2.4.4. The Quality of Service report; Chapter 3. Transport Protocols; 3.1. Introduction; 3.2. The TCP

3.2.1. Format of the TCP header; 3.2.2. Initiating and closing a connection; 3.2.3. Data transfer; 3.2.4. The slow start and congestion avoidance mechanisms; 3.2.5. The fast retransmit and fast recovery mechanisms; 3.2.6. The ECN mechanism; 3.3. The UDP; 3.3.1. Format of the UDP header; 3.4. The RTP; 3.4.1. Format of the RTP header; 3.5. The RTCP; 3.5.1. Format of the SR message; 3.5.2. Format of the RR message; 3.6. The DCCP; 3.6.1. DCCP procedure; 3.6.2. Congestion control; 3.6.3. Format of the DCCP header; 3.6.4. Options; 3.7. The SCTP; 3.7.1. Format of the SCTP header; 3.7.2. Association; 3.7.3. Data transfer; Chapter 4. Implementing Operation Quality; 4.1. The architectural framework; 4.2. Implementation of resource management; 4.2.1. Relative QoS; 4.2.2. Guaranteed QoS; 4.2.3. Resource reservation scenarios; 4.2.4. Mechanisms associated with the user plane; 4.2.5. Load balancing; 4.2.6. Link optimization mechanisms; 4.3. Implementing fault management; 4.3.1. Network reconfiguration; 4.3.2. Fault detection; 4.3.3. Equipment reconfiguration; Chapter 5. IP Technology - Resource Management; 5.1. Introduction; 5.2. The DiffServ model; 5.2.1. The DSCP field; 5.2.2. The DiffServ architecture; 5.3. The IntServ model; 5.3.1. Principles of resource reservation; 5.3.2. The RSVP; 5.4. The ARSVP protocol; 5.4.1. Principles of aggregation; 5.4.2. The ARSVP procedure; Chapter 6. IP Technology - Fault Management; 6.1. Introduction; 6.2. Hot Standby Router Protocol; 6.2.1. Operating principles; 6.2.2. Format of the HSRP message; 6.2.3. Load balancing; 6.3. Virtual Router Redundancy Protocol; 6.3.1. Operating principles; 6.3.2. Format of the VRRP message; 6.4. OSPF protocol; 6.4.1. Operating principles; 6.4.2. Format of the OSPF message; 6.4.3. Restarting the OSPF protocol

Sommario/riassunto

This book summarizes the key Quality of Service technologies deployed in telecommunications networks: Ethernet, IP, and MPLS. The QoS of the network is made up of two parts: fault and resource management. Network operation quality is among the functions to be fulfilled in order to offer QoS to the end user. It is characterized by four parameters: packet loss, delay, jitter or the variation of delay over time, and availability. Resource management employs mechanisms that enable the first three parameters to be guaranteed or optimized. Fault management aims to ensure continuity of service.