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CONCEPTS, TECHNIQUES AND METHODS

Second Edition

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CONTENTS

Preface xix

Acknowledgements xxi

1 Network Concepts 1

1.1 Wide Area Networks 1

- 1.1.1 Computer-communications evolution 1
 - Remote batch transmission 2
 - IBM 3270 Information Display System 3
 - Communications controller 4
 - Control units 4

1.1.2 Modern mainframe access 5

1.1.3 Network construction 7

1.1.4 Network characteristics 10

1.2 Local Area Networks 10

- 1.2.1 Comparison to WANs 11
 - Geographic area 11
 - Data transmission and error rates 12
 - Ownership 13
 - Regulation 13
 - Data routing and topology 14
 - Type of information carried 14

1.2.2 Utilization benefits 15

1.3 Standards Organizations and the OSI Reference Model 16

- 1.3.1 International standards organizations 17
 - ITU-T 18
 - ISO 18
 - The ISO Reference Model 19
 - Layered architecture 20

1.3.2 IEEE 26

- 802 Committees 26
- Data link subdivision 28
- Physical layer subdivision 29

1.3.3	ATM Forum	29
2	Local Area Networks	31
2.1	Technological Characteristics	31
2.1.1	Topology	32
	Loop	32
	Bus	33
	Ring	33
	Star	34
	Tree	34
	Mixed topologies	35
	Comparison of topologies	35
2.1.2	Signaling methods	36
	Broadband versus baseband	36
	Broadband signaling	37
	Baseband signaling	38
2.1.3	High speed encoding techniques	39
	MLT-3	40
	Bit transformation	41
	4B5B	42
	Other coding techniques	43
2.1.4	Transmission medium	43
	Twisted-pair wire	44
	Coaxial cable	45
	Hardware interface	46
	Broadband coaxial cable	47
	Fiber optic cable	49
2.1.5	Cabling standards	50
	Backbone cabling	50
	Horizontal cabling	50
	UTP categories	51
2.1.6	Access method	52
	Listeners and talkers	53
	Carrier-Sense Multiple Access with Collision Detection (CSMA/CD)	53
	Carrier-Sense Multiple Access with Collision Avoidance (CSMA/CA)	55
	Token passing	56
	Switch-based, connection-oriented	56
2.2	Popular Types of LANs	58
2.2.1	Ethernet	59
	Ethernet frame	60
	Types of Ethernet	62
	Coaxial versus twisted-pair	64
2.2.2	Fast Ethernet	65
	Frame format	66
	Start of stream delimiter	67
	End of stream delimiter	67
	100BASE-T overview	67

	Physical layer	68	
	100BASE-T4	69	
	100BASE-TX	71	
	4B5B coding	72	
	100BASE-FX	72	
2.2.3	Token passing	72	
	Bus operation	72	
	Ring operation	74	
	Data flow	75	
	Network access, token and frame formats		75
	Data flow example	81	
2.2.4	FDDI	82	
	Advantages	82	
	Hardware components	83	
	Dual Attached Station	84	
	Single Attached Station	84	
	Encoding and signaling	85	
	Frame formats	86	
	FDDI token	88	
	FDDI frame	88	
	Bandwidth allocation	89	
	Classes of traffic	89	
	Timers	90	
	Synchronous transmission	91	
	Asynchronous transmission	91	
	Transmission example	92	
	Status	93	
2.2.5	Logical link control frame format		94
	Types and classes of service		95
	Type 1	96	
	Type 2	96	
	Type 3	97	
	Classes of Service	97	
	Other Ethernet frame types		97
	Ethernet-802.3	97	
	Ethernet-SNAP	98	
	Frame determination	99	
2.3	ATM	100	
2.3.1	Rationale	100	
	The ATM cell	100	
	Scalability	101	
	Transparency	101	
	Traffic classification	102	
2.3.2	The ATM protocol stack	103	
	ATM Adaptation Layer	104	
	The ATM Layer	104	
	Physical Layer	105	
2.3.3	ATM operation	106	
	Components	106	
	ATM network interface cards		106
	LAN switch	106	

	ATM router	107	
	ATM switches	107	
	ATM service processor	108	
2.3.4	Network interfaces	108	
	User-to-network interface	109	
	Network-to-node interface	109	
2.3.5	The ATM cell header	109	
	Generic flow control field	109	
	Virtual path identifier field	110	
	Virtual channel identifier field	111	
	Payload type identifier field	112	
	Cell loss priority field	112	
	Header error check field	112	
2.3.6	ATM connections and cell switching	113	
	Connections	113	
	Cell switching	113	
	Types of switch	114	
	Using connection identifiers	114	
	General operation	116	

3 Local Area Networking 117

3.1	Hardware Components	118	
3.1.1	Repeaters	118	
	Types	118	
	Utilization	119	
	Repeater rules	121	
3.1.2	Bridges	121	
	Operation	121	
	Flooding	123	
	Filtering and forwarding	125	
	Types	125	
	Transparent bridge	125	
	Translating bridge	126	
	Features	127	
	Filtering and forwarding	127	
	Selective forwarding	128	
	Multiple port support	129	
	Local and wide area interface support	129	
	Transparent operation	130	
	Frame translation	130	
	Frame encapsulation	131	
	Fabrication	131	
	Routing method	132	
3.1.3	Routers	132	
	Network address utilization	134	
	Table operation	135	
	Advantages of use	135	
	Multiple path transmission and routing control	136	
	Flow control	136	
	Frame fragmentation	137	

3.1.4	Brouters	137	
	Operation	137	
	Utilization	138	
3.1.5	Gateway	139	
	Definition	140	
	Operation	141	
3.1.6	File servers	142	
	Types of server	142	
	Location considerations	144	
3.1.7	Wire hubs	145	
	Advantages	145	
	Intelligent hubs	145	
3.1.8	LAN switches	146	
	Conventional hub bottlenecks	147	
	Ethernet hub operations	147	
	Token-Ring hub operation	149	
	Bottleneck creation	149	
	Switching operations	150	
	Basic components	151	
	Key advantages of use	152	
	Delay times	153	
	Switching techniques	154	
	Cross-point switching	154	
	Store-and-forward	155	
	Hybrid	157	
	Port-based switching	158	
	Segment-based switching	159	
	Using LAN switches	161	
	Network redistribution	161	
	Server segmentation	162	
	Backbone operation	164	
	Handling speed incompatibilities	165	
	Backpressure	165	
	Server software module	166	
	ATM considerations	166	
3.2	Software Requirements	169	
3.2.1	DOS	170	
3.2.2	Network operating system	172	
	Services	173	
	Looking at NetWare	173	
	Architecture	174	
	Looking at Windows NT	175	
	Multiple protocol support	176	
3.2.3	Application software	189	
4	Constructing Local Area Networks	191	
4.1	10BASE-T Ethernet	191	
4.1.1	Wire hub	192	
	Interconnecting hubs	194	

4.1.2	Network access	195
4.1.3	Attachment Unit Interface	195
4.1.4	Using fiber optic technology	197
	Optical transceiver	198
4.1.5	Fiber hubs	198
4.1.6	Fiber adapter	198
	Distance limits	199
4.1.7	Coax adapter	200
4.1.8	Expanding a 10BASE-T network	201
	Segmentation options	202
	Bridge segmentation	203
4.2	100BASE-T Fast Ethernet	205
4.2.1	Repeater rules	205
4.2.2	Segmentation methods	206
4.2.3	Backbone operation	206
4.2.4	Switch segmentation	208
4.3	IBM Token-Ring Networks	209
4.3.1	Multistation access unit	209
4.3.2	IBM Cabling System	211
	Cable types	211
	Type 1	212
	Type 2	212
	Type 3	212
	Type 5	213
	Type 6	213
	Type 7	213
	Type 8	213
	Type 9	214
	Connectors	214
	Cable distance	214
4.3.3	Network adapters	215
4.3.4	Device and wiring constraints	217
	Ring size	217
	Adjusted ring length	217
4.3.5	Token-Ring repeaters	219
4.3.6	Bridge	220
4.3.7	Controlled Access Unit	221
4.3.8	Network processor	222
4.3.9	Connectivity overview	224
	Gateways	226
	SDLC adapter connectivity	227
	3278/9 adapter connectivity	227
4.3.10	The Interconnect Controller	228
4.3.11	Token-Ring switching	229

	Backbone ring performance	230
	Creating a collapsed backbone	231
	Token-Ring switch operations	232
	The dedicated Token-Ring standard	232
	Recent developments	233
5	Wide Area Networks and Network Facilities	235
5.1	Circuit Switched Networks	235
5.1.1	Types of facility	237
	Analog	237
	Modem utilization	238
	DSL	239
	Operation	241
	Discrete multitone modulation	242
	Carrierless amplitude/phase modulation	242
	Digital	243
	DSU utilization	243
	ISDN	245
	Basic Rate Interface	245
	Primary Rate Interface	247
	Utilization	248
5.2	Leased Line Networks	249
5.2.1	Frequency division multiplexing	249
	ITU-T FDM recommendations	250
	Analog leased lines	251
	Modem utilization	251
5.2.2	Time division multiplexing	253
5.2.3	T-carrier evolution	253
	Channel banks	254
	Digital transmission facilities	255
	T3	256
5.3	Packet Switching Networks	259
5.3.1	Multiplexing versus packet switching	259
5.3.2	Packet network construction	259
5.3.3	Packet network recommendations	260
5.3.4	The PDN and value-added networks	261
5.3.5	Packet network architecture	262
	Datagram packet networks	262
	Virtual circuit packet networks	263
5.3.6	Packet formation	264
	X.25	264
	Packet format and content	265
	Call establishment	266
	Flow control	267
5.3.7	Advantages of X.25 packet networks	269
5.3.8	Internetwork utilization	269
5.3.9	Remote access	270

The rapid increase in Internet connections has caused a dramatic rise in the technological and administrative difficulties experienced by LAN and WAN users and managers as they try to meet the demand for interoperability between diverse systems. This practical book addresses these challenges by covering the latest technological advancements, including high speed LANs FDDI, Fast Ethernet and ATM, token ring, TCP/IP, and more. Content: Chapter 1 Network Concepts (pages 1-30): Chapter 2 Local Area Networks (pages 31-116): Chapter 3 Local Area Networking (pages 117-190): Chapter 4 Constructing Lo... Library of Congress Cataloging-in-Publication Data Held, Gilbert, 1943- Internetworking LANs and WANs : concepts, techniques, and methods / Gilbert Held. Internetworking LANs and WANs : concepts, techniques and methods. Item Preview. remove-circle. LAN, Internet, Computer-Netzwerke, DATENKOMMUNIKATION (COMPUTERSYSTEME), LAN, LOCAL AREA NETWORKS (COMPUTERSYSTEME), WAN, WIDE AREA NETWORKS (COMPUTERSYSTEME), INTERNET + WORLD WIDE WEB (COMPUTERSYSTEME), TRANSMISSION DE DONNÉES (SYSTÈMES INFORMATIQUES), DATA COMMUNICATIONS (COMPUTER SYSTEMS), LAN, LOCAL AREA NETWORKS (SYSTÈMES INFORMATIQUES), LAN, LOCAL AREA NETWORKS (COMPUTER SYSTEMS), WAN, WIDE AREA NETWORKS (SYSTÈMES. 2 Internetworks Internetwork = Network of networks Two or more networks connected become an internetwork, or internet KU Network TU Network CU Network 2. 3 Internetworks Internetworking two LANs with a MAN or a WAN Bangkok Obvious example The Internet Kampangsae 3. 4 The Internet (Conceptual View) ISP: Internet Service Provider NAP: Network access point (switching station) 4. 5 Wide Area Network (WAN) Enterprise Network: WAN owned by a company 5. 6 Traditional WAN Architecture 6. 7 Traditional WAN Architecture LAN WAN 7. 8 WAN Connection DCE generates clock for DTE generates clock WAN DTE DC Wans versus other networks. Although WANs serve a purpose similar to that of LANs, WANs are structured and operated quite differently. The user of a WAN usually does not own the communication lines that connect the remote computer systems but instead subscribes to a service through a telecommunications provider. Unlike LANs, WANs typically do not link individual computers, but rather are used to link LANs in what are known as internetworks, using devices called routers and remote bridges. Held, Gilbert. Internetworking LANs and WANs: Concepts, Techniques, Methods. 2nd ed. New York: John Wiley & Sons, 1998. Hierarchical Networks. LANs and WANs. The realm of LAN interconnection devices offers a number of options, including hubs, LAN switches, virtual LANs (VLANs), bridges, routers, and IP switches. These options are described in the following sections. Hubs. Intelligent hubs often provide integrated management and internetworking capabilities, as well as Simple Network Management Protocol (SNMP) based network management. New generations also offer bridging, routing, and switching functions. Figure 6.7 shows a network that uses a combination of interconnection devices. Intelligent hubs provide connectivity between workstations that comprise a given cluster. An internal backbone is used to internetwork the intelligent hubs to move between different clusters.