Memory Tables

Chapter 2

Table 2-2 Examples of Types of Ethernet

Speed	Common Name	Informal IEEE Standard Name	Formal IEEE Standard Name	Cable Type, Maximum Length
10 Mbps			802.3	
100 Mbps			802.3u	
1000 Mbps			802.3z	
1000 Mbps			802.3ab	
10 Gbps			802.3an	

Table 2-3 10BASE-T and 100BASE-TX Pin Pairs Used

Transmits on Pins 1,2	Transmits on Pins 3,6
	—

Chapter 3

Table 3-3 Comparing HDLC Header Fields to Ethernet

HDLC Header or Trailer Field	Ethernet Equivalent	Description
Flag		
Address		
Type		
FCS		

Chapter 4

Table 4-6 All Possible Valid Network Numbers

Class	First Octet Range	Valid Network Numbers
A		
B		
C		

Chapter 5

Table 5-2 TCP/IP Transport Layer Features

Function	Description
Multiplexing using ports	
Error recovery (reliability)	
Flow control using windowing	
Connection establishment and termination	
Ordered data transfer and data segmentation	

Table 5-3 Popular Applications and Their Well-Known Port Numbers

Port Number	Protocol	Application
20	TCP	
21	TCP	
22	TCP	
23	TCP	
25	TCP	
53	UDP, TCP	
67, 68	UDP	
69	UDP	
80	TCP	
110	TCP	
161	UDP	
443	TCP	

Chapter 6

Table 6-2 Switch Internal Processing

Switching Method	Description
Store-and-forward	
Cut-through	
Fragment-free	

Table 6-3 Benefits of Segmenting Ethernet Devices Using Hubs, Switches, and Routers

Feature	Hub	Switch	Router
Greater cabling distances are allowed			
Creates multiple collision domains			
Increases bandwidth			
Creates multiple broadcast domains			

Chapter 7

Table 7-5 Key Sequences for Command Edit and Recall

Keyboard Command	What Happens
Up arrow or Ctrl-P	
Down arrow or Ctrl-N	
Left arrow or Ctrl-B	
Right arrow or Ctrl-F	
Backspace	
Ctrl-A	
Ctrl-E	
Ctrl-R	
Ctrl-D	
Ctrl-Shift-6	

Table 7-6 Common Switch Configuration Modes

Prompt	Name of Mode	Context-Setting Command(s) to Reach This Mode
hostname(config)#		
hostname(config-line)#		
hostname(config-if)#		
hostname(vlan)#		

Table 7-7 Names and Purposes of the Two Main Cisco IOS Configuration Files

Configuration Filename	Purpose	Where It Is Stored
Startup config		
Running config		

Chapter 8

Table 8-2 Banners and Their Use

Banner	Typical Use
Message of the Day (MOTD)	
Login	
Exec	

Table 8-3 Commands Related to the History Buffer

Command	Description
show history	
history size *x*	
terminal history size *x*	

Table 8-4 Actions When Port Security Violation Occurs

Option on the switchport port-security violation Command	Protect	Restrict	Shutdown*
Discards offending traffic			
Sends log and SNMP messages			
Disables the interface, discarding all traffic			

* **shutdown** is the default setting.

Chapter 9

Table 9-3 Expected Trunking Operational Mode Based on the Configured Administrative Modes

Administrative Mode	Access	Dynamic Auto	Trunk	Dynamic Desirable
access				
dynamic auto				
trunk				
dynamic desirable				

1 When two switches configure a mode of "access" on one end and "trunk" on the other, problems occur. Avoid this combination.

Chapter 10

Table 10-4 LAN Switch Interface Status Codes

Line Status	Protocol Status	Interface Status	Typical Root Cause
Administratively Down	Down		
Down	Down		
Up	Down		
Down	Down (err-disabled)		
Up	Up		

Chapter 11

Table 11-2 RFC 1918 Private Address Space

Class of Networks	Private IP Networks	Number of Networks
A		
B		
C		

Chapter 12

Table 12-2 IPv4 Address Classes Based on First Octet Values

Class	First Octet Values	Purpose
A		
B		
C		
D		
E		

Table 12-3 Key Facts for Classes A, B, and C

	Class A	Class B	Class C
First octet range			
Valid network numbers			
Total networks			
Hosts per network			
Octets (bits) in network part			
Octets (bits) in host part			
Default mask			

Chapter 13

Table 13-4 Nine Possible Values in One Octet of a Subnet Mask

Binary Mask Octet	Decimal Equivalent	Number of Binary 1s
00000000		
10000000		
11000000		
11100000		
11110000		
11111000		
11111100		
11111110		
11111111		

Chapter 14

Table 14-2 Summary of Subnet ID Key Facts

Definition	
Numeric Value	
Literal Synonyms	
Common-Use Synonyms	
Typically Seen In...	

Chapter 15

Table 15-2 Interface Status Codes and Their Meanings

Name	Location	General Meaning
Line status		
Protocol status		

Table 15-4 Key Commands to List Router Interface Status

Command	Lines of Output per Interface	IP Configuration Listed	Interface Status Listed?
show ip interface brief			
show protocols [*type number*]			
show interfaces [*type number*]			

Chapter 16

Table 16-2 Comparisons of Packet Switching, Fast Switching, and CEF

Improves Routing Efficiency by…	Process Switching	Fast Switching	CEF
…saving data link headers used for encapsulating packets			
…using other tables, with faster lookup time, before looking at the routing table			
…organizing the tables using tree structures for very fast searches and less time to route packets			

Chapter 17

Table 17-2 IP IGP Metrics

IGP	Metric	Description
RIP-2	Hop count	The number of routers (hops) between a router and the destination subnet.
OSPF		
EIGRP		

Table 17-3 Interior IP Routing Protocols Compared

Feature	RIP-1	RIP-2	EIGRP	OSPF	IS-IS
Classless/sends mask in updates/ supports VLSM	No	Yes			Yes
Algorithm (DV, advanced DV, LS)	DV	DV			LS
Supports manual summarization	No	Yes			Yes
Cisco-proprietary	No	No			No
Routing updates are sent to a multicast IP address	No	Yes			—
Convergence	Slow	Slow			Fast

1 Although Cisco created EIGRP, and has kept it as a proprietary protocol for many years, Cisco happened to choose to publish EIGRP as an informational RFC around the time this book was published in early 2013. This choice allows other vendors to implement EIGRP, while Cisco retains the rights to the protocol.

Table 17-4 Default Administrative Distances

Route Type	Administrative Distance
Connected	
Static	
BGP (external routes)	20
EIGRP (internal routes)	
IGRP	100
OSPF	
IS-IS	
RIP	
EIGRP (external routes)	170
BGP (internal routes)	200
Unusable	255

Table 17-5 Example OSPF **network** Commands on R3, with Expected Results

Command	Logic in Command	Matched Interfaces
network 10.1.0.0 0.0.255.255		G0/0.341 G0/0.342 S0/0/0
network 10.0.0.0 0.255.255.255		G0/0.341 G0/0.342 S0/0/0
network 0.0.0.0 255.255.255.255		G0/0.341 G0/0.342 S0/0/0
network 10.1.13.0 0.0.255.255		S0/0/0
network 10.1.3.1 0.0.0.0		G0/0.341

Chapter 20

Table 20-2 Classless and Classful Interior IP Routing Protocols

Routing Protocol	Is It Classless?	Sends Mask in Updates?	Supports VLSM?	Supports Manual Route Summarization?
RIP-1				
IGRP				
RIP-2				
EIGRP				
OSPF				

Chapter 24

Table 24-2 RFC 1918 Private Address Space

Range of IP Addresses	Class of Networks	Number of Networks
10.0.0.0 to 10.255.255.255		
172.16.0.0 to 172.31.255.255		
192.168.0.0 to 192.168.255.255		

Chapter 25

Table 25-3 Hexadecimal/Binary Conversion Chart

Hex	Binary	Hex	Binary
0		8	
1		9	
2		A	
3		B	
4		C	
5		D	
6		E	
7		F	

Chapter 26

Table 26-2 Some Types of IPv6 Addresses and Their First Hex Digit(s)

Address Type	First Hex Digits
Global Unicast	
Unique Local	
Multicast	
Link-Local	

Chapter 27

Table 27-3 Key IPv6 Local-Scope Multicast Addresses

Short Name	Multicast Address	Meaning	IPv4 Equivalent
All-nodes			
All-routers			
All-OSPF, All-OSPF-DR			
EIGRPv6 Routers			

Chapter 28

Table 28-2 NDP Function Summary

Function	Protocol Messages	Who Discovers Info	Who Supplies Info	Info Supplied
Router discovery				
Prefix/length discovery				
Neighbor discovery				
Duplicate Address Detection				

Table 28-3 Comparison of Stateless and Stateful DHCPv6 Services

Feature	Stateful DHCP	Stateless DHCP
Remembers IPv6 address (state information) of clients that make requests		
Leases IPv6 address to client		
Supplies list of DNS server addresses		
Commonly used with SLAAC		

Chapter 29

Table 29-2 Summary of Version Terminology for Interior Routing Protocols

	RIP	OSPF	EIGRP
Latest version that supports IPv4 routes			
Version that supports IPv6 routes			

Table 29-3 OSPFv2 and Matching OSPFv3 **show** Commands

To Display Details About...	OSPFv2	OSPFv3
OSPF process		
All sources of routing information		
Details about OSPF-enabled interfaces		
Concise info about OSPF-enabled interfaces		
List of neighbors		
Summary of LSDB		
OSPF-learned routes		