

i-Net+

The Cram Sheet

This Cram Sheet contains the distilled, key facts about the i-Net+ Exam. Review this information before you enter the test room, paying special attention to those areas where you feel you need the most review. You can transfer any of these facts from your head onto a blank sheet of paper before beginning the exam.

i-Net+ Basics

1. The Internet depends upon the TCP/IP protocol and its suite of features.
2. Every IP host must have a unique address--a 32-bit binary number. Every IP host must also have a subnet mask and a default gateway setting.
3. Internet Service Providers (ISPs) provide access to the Internet through Network Access Points (NAPs).
4. A Uniform Resource Locator (URL) is used to access resources on the Internet. The URL specifies the protocol used to access the resource (such as http: for a Web page), the name of the server where the resource resides (such as www.domain.com), the port (such as :8080), and the path to the resource (such as /folder/file.htm).
5. Know the common TCP/IP ports:
 - * FTP--21
 - * Telnet--23
 - * SMTP--25
 - * HTTP (WWW)--80
 - * POP3--110
 - * NNTP--119
 - * LDAP--389
6. Caching allows RAM to be used instead of actual access to speed up operations. Caching can be done on the client or server. A client can also cache Web data, increasing the overall efficiency with which Web pages are retrieved later.
7. To require that a word appear in the results of a keyword search, use a plus sign before the keyword. To ensure that a word does not appear in the results, use a minus sign before the keyword.

i-Net+ Clients

8. TCP/IP is required for a client to access the Internet. Implementations of TCP/IP differ between operating systems. Microsoft implements TCP/IP as a Windows Socket DLL in the Windows operating system.
9. An FTP client can choose to download a file in different formats (binary/ASCII) and use

the following commands for interacting with files:

- * **put**--To copy a file to a remote site
- * **get**--To retrieve a file from a remote site
- * **mput**--To copy multiple files to a remote site
- * **mget**--To retrieve multiple files from a remote site

10. Name resolution can translate names into addresses by using any of the following methods:

- * **HOSTS file**--Resolves host names to IP addresses.
- * **LMHOSTS file**--Resolves NetBIOS names to IP addresses on computers running Windows operating systems.
- * **DNS**--The hierarchical system used on the Internet.
- * **WINS**--The method associated with Windows NT. WINS uses a distributed database.

11. The configuration of TCP/IP can be automated through the use of DHCP (Dynamic Host Configuration Protocol) servers. Whereas static IP addresses must be manually assigned, DHCP servers can dynamically configure the assignment of client IP addresses.

12. MIME (Multipurpose Internet Mail Extensions) makes it possible to send non-ASCII files by email.

13. Cookies hold values about a user's preferences locally on the user's machine. Browsers can be configured to control the behavior of cookies. For example, cookies can be automatically accepted, or the user can be prompted before a cookie is sent from a server.

Development

14. Application programming interfaces (APIs) serve as building blocks for creating software that interacts with the operating-system components.

15. CGI (Common Gateway Interface) is a common language used for creating server-based applications.

16. Java allows programs to be run in a Java Virtual Machine in almost any operating system.

17. XML (Extensible Markup Language) surpasses HTML (Hypertext Markup Language) in features and allows for multiple links from one hot spot.

18. Active Server Pages (ASP) allow processing to be done on the server or on the client. When processing is done on the server, the client sees only the result as pure HTML.

19. Open Database Connectivity (ODBC) allows Web servers to interact with SQL Server.

20. BinHex converts binary data into ASCII.

21. Use Shockwave to create interactive content. Because Flash uses vector-based imaging, it is ideal for creating smooth and spectacular effects.

22. GIF, JPEG, and PNG are image file formats used for Web graphics. JPEG is better suited for photographs, and GIF is better suited for simple graphics. PNG is a newer specification designed to replace GIF and avoid licensing problems.
23. GIF89, a newer GIF specification, adds support for transparency and animation.
24. The following are basic HTML tags and their functions.

Opening tag	Closing tag	Function
<HTML>	</HTML>	A tag common to all Web pages; used to enclose the Web page.
<HEAD>	</HEAD>	A tag common to all Web pages; used to enclose other tags, which will apply to the entire document.
<TITLE>	</TITLE>	A tag common to all Web pages; used to enclose the Web page's title.
<BODY>	</BODY>	A tag common to all Web pages; used to enclose the content of the Web page.
<!--	-->	Allows comments to be inserted that will not be displayed by the browser.
		Makes text bold.
<I>	</I>	Makes text italic.
<H#>	</H#>	Where # is a number from one to six--creates headings of various levels, with one being the highest.
		Creates a bulleted, unordered list.
		Creates a numbered, ordered list.
<DL>	</DL>	Creates a glossary-like definition list.
<FORM>	</FORM>	Creates a form to solicit user input.
<TABLE>	</TABLE>	Creates a table to organize and present information.

25. The following are the character entity codes for special characters.

Character	Entity name	Entity number
Less than (<)	&lt;	&#060;
Greater than (>)	&gt;	&#062;
Copyright (©)	&copy;	&#169;
Registered trademark (®)	&reg;	&#174;

26. The following are examples of hyperlinks:

- * Text link--Go home
- * Graphical link--
- * Email link--Email Comptia

Networking

27. The following are characteristics of the three primary classes of networks.

Class	First octet	Networks available	Hosts available
A	1-126	126	116,777,214
B	128-191	16,384	65,534
C	192-223	2,097,152	254

28. Memorize the following default subnet masks:

- * Class A--255.0.0.0
- * Class B--255.255.0.0
- * Class C--255.255.255.0

29. Subnetting divides the maximum number of hosts available in an IP address set into a number of subnetworks with a limited number of hosts for each. The following are examples for a Class C network:

- * 255.255.255.192 provides 2 networks with 62 hosts each.
- * 255.255.255.224 provides 6 networks with 30 hosts each.
- * 255.255.255.240 provides 14 networks with 14 hosts each.
- * 255.255.255.248 provides 30 networks with 6 hosts each.
- * 255.255.255.252 provides 62 networks with 2 hosts each.

30. Class D networks are used for multicasting.

31. 127.0.0.1 is reserved for loopback.

32. Private IP addresses are used when you do not need your network to connect to the outside world.

33. SLIP is the oldest line protocol, offering no error correction or support for dynamic IP addressing. PPP replaces SLIP and allows for error correction, dynamic IP addressing, and the use of protocols other than TCP/IP.

34. Tunneling protocols include PPTP, L2F, L2TP, and IPsec. All are Layer 2 protocols, except IPsec, which is a Layer 3 protocol.

35. PPTP is newer than PPP and adds the ability to tunnel and create secure connections. One alternative to PPTP is L2F.

36. IP addresses on a host can be seen with the Ipconfig, Winipcfg, or Ifconfig utilities.

37. PING is the all-purpose connectivity diagnostic utility. It is surpassed in operation by TRACERT, which traces a packet over the various hops from a computer to a host.

38. Types of modems that can be used for connectivity include:

- * Analog--The traditional modem used over the Public Switched Telephone Network (PSTN).
- * Integrated Services Digital Network (ISDN)--Provides high-speed digital connectivity over a communications network optimized for data, voice, and video transmissions.

- * Digital Subscriber Line (DSL)--Provides high-speed digital connectivity over upgraded telephone lines.
 - * Cable--Provides high-speed connection using the coaxial cable used for cable television.
39. ISDN is a digital system that provides for the simultaneous transfer of voice and data. Data speeds can reach up to 128Kbps.
40. The two main categories of DSL include ADSL and SDSL.
41. Networks can be connected via bridges, routers, brouters, or gateways.
42. Internet bandwidth technologies include T1 and its European equivalent, E1.
43. The top-level domains include:
- * com--Commercial organizations
 - * edu--Educational organizations
 - * gov--Government institutions
 - * mil--Military groups
 - * net--Internet infrastructure organizations
 - * org--Non-profit organizations and those not covered above

i-Net+ Security

44. Choose passwords that are alphanumeric and, if possible, use special characters. Never choose a password from a dictionary. Ensure that passwords are at least six to eight characters long.
45. A firewall or a proxy is used to protect a network from external threats by filtering data based upon address or ports. A firewall can be hardware or software implemented.
46. Anti-virus software should be running on all systems on the network, and you should temporarily disable virus protection when installing software.
47. Auditing involves checking log files and using intrusion-detection utilities.
48. SET (Secure Electronic Transactions) is a standard for using digital signatures for credit transactions.
49. Virtual Private Networks (VPNs) use tunneling and encryption, and they are used for creating extranets. VPNs securely connect two or more nodes across a public network.
50. Suspicious activity can include Denial of Service (DoS) attacks and multiple logon failures.
51. A Denial of Service (DoS) attack is typically a deliberate attack to overwhelm the resources on a system so that the system is unable to respond to legitimate requests.
52. SYN floods overwhelm a host with requests for connections at the server entry ports.
53. Spam is the electronic equivalent of junk mail. This includes unsolicited email sent to multiple recipients, or multiple simultaneous postings to newsgroups.

Business Concepts

- 54. Copyrights are used to protect Web content. The copyright holder has exclusive access to the content.
- 55. Copyrights cannot protect items that patents and trademarks were intended to cover.
- 56. Unicode allows for easy translation of characters into different languages.
- 57. Pull technology requires a browser to request information from a server. Push technology sends information to a browser before it is requested.
- 58. Electronic Data Interchange (EDI) allows information to be transferred between dissimilar applications. EDI describes the set of standards for the transfer of business documents between systems.
- 59. An intranet is a private network that utilizes TCP/IP and Internet technologies, and it is typically used for the management and dissemination of information within an organization.
- 60. An extranet is created as an extension to the corporate intranet, or when two or more intranets are joined. An extranet improves communication and efficiency between an organization and its customers, vendors, and business partners.