Control hijacking in computer security is a type of attack where an unauthorized party takes control of a communication or established connection. This is often referred to as a man-in-the-middle attack. Here's a simplified breakdown:

Overview:

- Control hijacking involves an attacker seizing control of an ongoing communication.

Method:

- The attacker intercepts messages, like those in a public key exchange, and retransmits them with their own alterations, making it seem like the two parties are still communicating directly.

Impersonation:

- The attacker can use a program that looks like the server to the client and appears as the client to the server.

Objectives:

- The attacker's goal can be to gain access to messages or modify them before retransmitting.

Goals of Control Hijacking:

- a. Takeover Target Machine:
    - For example, seizing control of a web server.

- b. Execute Arbitrary Code:
    - By manipulating application control flow, the attacker aims to run their own code on the target.

Types of Control Hijacking:

- a. Buffer Overflow Attacks:
    - Exploiting programs that allow more data into a space (buffer) than it can handle, leading to overwriting and control takeover.
- b. Integer Overflow Attacks:
    - Manipulating integer values to overflow their allotted size, potentially causing unexpected behavior and control compromise.
- c. Format String Vulnerabilities:
    - Exploiting vulnerabilities related to how programs handle format specifiers in input, which can lead to control hijacking.

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50. Explain advantages and disadvantages of different types of IDS.
51. What are the features of intrusion detection system ?
52. What are the components of IDS ?
53. What is an intrusion detection system ? What are the difficulties in anomaly detection ?
54. Why is security hard ?
55. What is Access Control list (ACL) and also define what are the technologies used in access control ?
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71. Discuss threat modelling methodologies.
72. Explain tools used for threats modelling.
73. How to create a threat model ?
74. What is rendering ? Discuss rendering engine. List some rendering engine in web browser.
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79. How can we prevent CSRF attack ?
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84. What is the principle of public key cryptography ? Discuss the applications for public key cryptography.
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88. Describe briefly the term digital envelope.
89. Explain the digital signatures.
90. Describe the steps used in creating digital signature.
91. Write a short note on Message Digest (MD) hash function.
92. What are the properties and requirements for a digital signature ?
93. Explain the variants of digital signatures.
94. What is hash function ? Discuss SHA-512 with all required steps, round function and block diagram.
95. What are the characteristics of SHA function ?
96. Discuss public key distribution. Describe the various schemes used for public key distribution.
97. Discuss X.509 certificates in detail. What is the role ofX.509 certificates in cryptography ?
98. Discuss X.509 digital certificate format.
99. What do you mean by PGP ? Discuss its application.
100. Discuss the steps that are followed for the transmission and reception of PGP messages.
101. Explain real world protocols.
102. List the basic terminology used in cryptography.
103. Discuss the functionality of S/MIME.
104. What is email security ?
105. What is an email certificate ?
106. What is Transport Layer Security (TLS) ?
107. What are the components of TLS ? Explain the working of TLS.
108. Explain internet protocol security (IPSec) in detail.

109. Write a short note on the applications of IP security.
110. What are the advantages of IPSec ?
111. What are the uses of IP security ?
112. Discuss components of IP Security.
113. Explain the working of IP Security.
114. Describe briefly Domain Name Server (DNS).
115. How DNS security works ?
116. Explain the DNS security threats.
117. Discuss measures against DNS attacks.
118. Explain SSL encryption. What are the steps involved inSSL server authentication ?
119. What is DES ? Why were double and triple DES created and what are they ?
120. Write short note on secret key cryptography. Also list its advantages, disadvantages and examples.
121. Define internet infrastructure. What are different internet infrastructures ?
122. Explain the advantages and disadvantages of in TCP/IP model.
123. Give a short summary of IP protocol functions.
124. Define routing protocols.
125. What are the types of routing protocols ?
126. Discuss the advantages and disadvantages of different routing protocols.
127. What do you mean by DNS ? Explain DNS rebinding attack.
128. How DNS rebinding work ?
129. Discuss the features of DNS rebinding attack.
130. How can we prevent DNS rebinding attack ?
131. Explain key management protocol
132. What are the advantages and disadvantages of key management protocol ?
133. What are the security and operational requirements forkey management protocol ?
134. Write a short note on VPN and tunnel mode.

135. Discuss link layer connection in TCP/IP model.
136. Write short note on firewall.
137. What is packet filtering firewall ? Explain its advantage and disadvantage.
138. Write short note on telnet.
139. Explain briefly fragmentation at network layer.
140. Write short note on proxy firewall.
141. Write short note on intrusion detection.
142. What is packet filtering firewall ? Explain its advantage and disadvantage.
143. What is Cyberethics?