

Table 16.1 A Comparison of Threats on the Web

	Threats	Consequences	Countermeasures
Integrity	<ul style="list-style-type: none"> •Modification of user data •Trojan horse browser •Modification of memory •Modification of message traffic in transit 	<ul style="list-style-type: none"> •Loss of information •Compromise of machine •Vulnerability to all other threats 	Cryptographic checksums
Confidentiality	<ul style="list-style-type: none"> •Eavesdropping on the net •Theft of info from server •Theft of data from client •Info about network configuration •Info about which client talks to server 	<ul style="list-style-type: none"> •Loss of information •Loss of privacy 	Encryption, Web proxies
Denial of Service	<ul style="list-style-type: none"> •Killing of user threads •Flooding machine with bogus requests •Filling up disk or memory •Isolating machine by DNS attacks 	<ul style="list-style-type: none"> •Disruptive •Annoying •Prevent user from getting work done 	Difficult to prevent
Authentication	<ul style="list-style-type: none"> •Impersonation of legitimate users •Data forgery 	<ul style="list-style-type: none"> •Misrepresentation of user •Belief that false information is valid 	Cryptographic techniques

Table 16.2 SSL Handshake Protocol Message Types

Message Type	Parameters
hello_request	null
client_hello	version, random, session id, cipher suite, compression method
server_hello	version, random, session id, cipher suite, compression method
certificate	chain of X.509v3 certificates
server_key_exchange	parameters, signature
certificate_request	type, authorities
server_done	null
certificate_verify	signature
client_key_exchange	parameters, signature
finished	hash value

Table 16.3 SSH Transport Layer Cryptographic Algorithms

Cipher	
3des-cbc*	Three-key 3DES in CBC mode
blowfish-cbc	Blowfish in CBC mode
twofish256-cbc	Twofish in CBC mode with a 256-bit key
twofish192-cbc	Twofish with a 192-bit key
twofish128-cbc	Twofish with a 128-bit key
aes256-cbc	AES in CBC mode with a 256-bit key
aes192-cbc	AES with a 192-bit key
aes128-cbc**	AES with a 128-bit key
Serpent256-cbc	Serpent in CBC mode with a 256-bit key
Serpent192-cbc	Serpent with a 192-bit key
Serpent128-cbc	Serpent with a 128-bit key
arcfour	RC4 with a 128-bit key
cast128-cbc	CAST-128 in CBC mode

MAC algorithm	
hmac-sha1*	HMAC-SHA1; digest length = key length = 20
hmac-sha1-96**	First 96 bits of HMAC-SHA1; digest length = 12; key length = 20
hmac-md5	HMAC-SHA1; digest length = key length = 16
hmac-md5-96	First 96 bits of HMAC-SHA1; digest length = 12; key length = 16

Compression algorithm	
none*	No compression
zlib	Defined in RFC 1950 and RFC 1951

* = Required

** = Recommended