# WebSocket Implementation Tes



Summary report generated on 2011-11-02T08:47:35Z (UTC) by <u>Autobahn</u> WebSockets v0.4.3.

Pass	Test case was executed and passed successfully.
Non-Strict	Test case was executed and passed non-strictly. A non-strict behavior is one that does not adhere to a SHOULD-behavior as described in the protocol specification or a well-defined, canonical behavior that appears to be desirable but left open in the protocol specification. An implementation with non-strict behavior is still conformant to the protocol specification.
Fail	Test case was executed and failed. An implementation which fails a test case - other than a performance/limits related one - is non-conforming to a MUST-behavior as described in the protocol specification.
Missing	Test case is missing, either because it was skipped via the test suite configuration or deactivated, i.e. because the implementation does not implement the tested feature or breaks during running the test case.

1 Framing	WASDv10.1.0+1.0.0
1.1 Text Messages	
<u>Case 1.1.1</u>	<u>Pass</u>
<u>Case 1.1.2</u>	<u>Pass</u>
<u>Case 1.1.3</u>	<u>Pass</u>
<u>Case 1.1.4</u>	<u>Pass</u>
<u>Case 1.1.5</u>	<u>Pass</u>
<u>Case 1.1.6</u>	<u>Pass</u>
<u>Case 1.1.7</u>	<u>Pass</u>
<u>Case 1.1.8</u>	<u>Pass</u>
1 Framing	WASDv10.1.0+1.0.0
1.2 Binary Messages	
<u>Case 1.2.1</u>	<u>Pass</u>

<u>Case 1.2.2</u>	<u>Pass</u>
<u>Case 1.2.3</u>	<u>Pass</u>
<u>Case 1.2.4</u>	<u>Pass</u>
<u>Case 1.2.5</u>	<u>Pass</u>
<u>Case 1.2.6</u>	<u>Pass</u>
<u>Case 1.2.7</u>	<u>Pass</u>
<u>Case 1.2.8</u>	<u>Pass</u>
2 Pings/Pongs	WASDv10.1.0+1.0.0
<u>Case 2.1</u>	<u>Pass</u>
<u>Case 2.2</u>	<u>Pass</u>
<u>Case 2.3</u>	<u>Pass</u>
<u>Case 2.4</u>	<u>Pass</u>
<u>Case 2.5</u>	<u>Pass</u>
<u>Case 2.6</u>	<u>Pass</u>
<u>Case 2.7</u>	<u>Pass</u>
<u>Case 2.8</u>	<u>Pass</u>
<u>Case 2.9</u>	<u>Pass</u>
<u>Case 2.10</u>	<u>Pass</u>
<u>Case 2.11</u>	<u>Pass</u>
3 Reserved Bits	WASDv10.1.0+1.0.0
<u>Case 3.1</u>	<u>Pass</u>
<u>Case 3.2</u>	<u>Pass</u>
<u>Case 3.3</u>	<u>Pass</u>
<u>Case 3.4</u>	<u>Pass</u>
<u>Case 3.5</u>	<u>Pass</u>
<u>Case 3.6</u>	<u>Pass</u>
<u>Case 3.7</u>	<u>Pass</u>
4 Opcodes	WASDv10.1.0+1.0.0
4.1 Non-control Opcodes	
<u>Case 4.1.1</u>	<u>Pass</u>
<u>Case 4.1.2</u>	<u>Pass</u>

Case 4.1.3	<u>Pass</u>
<u>Case 4.1.4</u>	<u>Pass</u>
<u>Case 4.1.5</u>	<u>Pass</u>
4 Opcodes	WASDv10.1.0+1.0.0
4.2 Control Opcodes	
<u>Case 4.2.1</u>	<u>Pass</u>
Case 4.2.2	<u>Pass</u>
Case 4.2.3	<u>Pass</u>
<u>Case 4.2.4</u>	<u>Pass</u>
<u>Case 4.2.5</u>	<u>Pass</u>
5 Fragmentation	WASDv10.1.0+1.0.0
<u>Case 5.1</u>	<u>Pass</u>
<u>Case 5.2</u>	<u>Pass</u>
<u>Case 5.3</u>	<u>Pass</u>
<u>Case 5.4</u>	<u>Pass</u>
<u>Case 5.5</u>	<u>Pass</u>
<u>Case 5.6</u>	<u>Pass</u>
<u>Case 5.7</u>	<u>Pass</u>
<u>Case 5.8</u>	<u>Pass</u>
<u>Case 5.9</u>	<u>Pass</u>
<u>Case 5.10</u>	<u>Pass</u>
<u>Case 5.11</u>	<u>Pass</u>
<u>Case 5.12</u>	<u>Pass</u>
<u>Case 5.13</u>	<u>Pass</u>
<u>Case 5.14</u>	<u>Pass</u>
<u>Case 5.15</u>	<u>Pass</u>
<u>Case 5.16</u>	<u>Pass</u>
<u>Case 5.17</u>	<u>Pass</u>
<u>Case 5.18</u>	<u>Pass</u>
<u>Case 5.19</u>	<u>Pass</u>
<u>Case 5.20</u>	<u>Pass</u>

6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.1 Valid UTF-8 with zero payload fragments		
<u>Case 6.1.1</u>	<u>Pass</u>	
<u>Case 6.1.2</u>	<u>Pass</u>	
<u>Case 6.1.3</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.2 Valid UTF-8 unfragmented, fragmented on code-point	s and within code-points	
<u>Case 6.2.1</u>	<u>Pass</u>	
<u>Case 6.2.2</u>	<u>Pass</u>	
<u>Case 6.2.3</u>	<u>Pass</u>	
<u>Case 6.2.4</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.3 Invalid UTF-8 differently fragmented		
<u>Case 6.3.1</u>	<u>Pass</u>	
<u>Case 6.3.2</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.4 Fail-fast on invalid UTF-8		
<u>Case 6.4.1</u>	<u>Pass</u>	
<u>Case 6.4.2</u>	<u>Pass</u>	
<u>Case 6.4.3</u>	<u>Pass</u>	
<u>Case 6.4.4</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.5 Some valid UTF-8 sequences		
<u>Case 6.5.1</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.6 All prefixes of a valid UTF-8 string that contains multi-byte code points		
<u>Case 6.6.1</u>	<u>Pass</u>	
<u>Case 6.6.2</u>	<u>Pass</u>	
<u>Case 6.6.3</u>	<u>Pass</u>	
<u>Case 6.6.4</u>	<u>Pass</u>	

<u>Case 6.6.5</u>	<u>Pass</u>	
<u>Case 6.6.6</u>	<u>Pass</u>	
<u>Case 6.6.7</u>	<u>Pass</u>	
<u>Case 6.6.8</u>	<u>Pass</u>	
<u>Case 6.6.9</u>	<u>Pass</u>	
<u>Case 6.6.10</u>	<u>Pass</u>	
<u>Case 6.6.11</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.7 First possible sequence of a certain length		
<u>Case 6.7.1</u>	<u>Pass</u>	
<u>Case 6.7.2</u>	<u>Pass</u>	
<u>Case 6.7.3</u>	<u>Pass</u>	
<u>Case 6.7.4</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.8 First possible sequence length 5/6 (invalid codepoints)		
<u>Case 6.8.1</u>	<u>Pass</u>	
<u>Case 6.8.2</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.9 Last possible sequence of a certain length		
<u>Case 6.9.1</u>	<u>Pass</u>	
<u>Case 6.9.2</u>	<u>Pass</u>	
<u>Case 6.9.3</u>	<u>Pass</u>	
<u>Case 6.9.4</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.10 Last possible sequence length 4/5/6 (invalid codepoints)		
<u>Case 6.10.1</u>	<u>Pass</u>	
<u>Case 6.10.2</u>	<u>Pass</u>	
<u>Case 6.10.3</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.11 Other boundary conditions		

Case 6.11.1	<u>Pass</u>
<u>Case 6.11.2</u>	<u>Pass</u>
<u>Case 6.11.3</u>	<u>Pass</u>
<u>Case 6.11.4</u>	<u>Pass</u>
<u>Case 6.11.5</u>	<u>Pass</u>
6 UTF-8 Handling	WASDv10.1.0+1.0.0
6.12 Unexpected continuation bytes	
<u>Case 6.12.1</u>	<u>Pass</u>
<u>Case 6.12.2</u>	<u>Pass</u>
<u>Case 6.12.3</u>	<u>Pass</u>
<u>Case 6.12.4</u>	<u>Pass</u>
<u>Case 6.12.5</u>	<u>Pass</u>
<u>Case 6.12.6</u>	<u>Pass</u>
<u>Case 6.12.7</u>	<u>Pass</u>
<u>Case 6.12.8</u>	<u>Pass</u>
6 UTF-8 Handling	WASDv10.1.0+1.0.0
6.13 Lonely start characters	
<u>Case 6.13.1</u>	<u>Pass</u>
<u>Case 6.13.2</u>	<u>Pass</u>
<u>Case 6.13.3</u>	<u>Pass</u>
<u>Case 6.13.4</u>	<u>Pass</u>
<u>Case 6.13.5</u>	<u>Pass</u>
6 UTF-8 Handling	WASDv10.1.0+1.0.0
6.14 Sequences with last continuation byte missing	
<u>Case 6.14.1</u>	<u>Pass</u>
<u>Case 6.14.2</u>	<u>Pass</u>
<u>Case 6.14.3</u>	<u>Pass</u>
<u>Case 6.14.4</u>	<u>Pass</u>
<u>Case 6.14.5</u>	<u>Pass</u>
<u>Case 6.14.6</u>	<u>Pass</u>
<u>Case 6.14.7</u>	<u>Pass</u>

<u>Case 6.14.8</u>	<u>Pass</u>	
<u>Case 6.14.9</u>	<u>Pass</u>	
<u>Case 6.14.10</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.15 Concatenation of incomplete sequences		
<u>Case 6.15.1</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.16 Impossible bytes		
<u>Case 6.16.1</u>	<u>Pass</u>	
<u>Case 6.16.2</u>	<u>Pass</u>	
<u>Case 6.16.3</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.17 Examples of an overlong ASCII character		
<u>Case 6.17.1</u>	<u>Pass</u>	
<u>Case 6.17.2</u>	<u>Pass</u>	
<u>Case 6.17.3</u>	<u>Pass</u>	
<u>Case 6.17.4</u>	<u>Pass</u>	
<u>Case 6.17.5</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.18 Maximum overlong sequences		
<u>Case 6.18.1</u>	<u>Pass</u>	
<u>Case 6.18.2</u>	<u>Pass</u>	
<u>Case 6.18.3</u>	<u>Pass</u>	
<u>Case 6.18.4</u>	<u>Pass</u>	
Case 6.18.5	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.19 Overlong representation of the NUL character		
<u>Case 6.19.1</u>	<u>Pass</u>	
<u>Case 6.19.2</u>	<u>Pass</u>	
Case 6.19.3	<u>Pass</u>	

<u>Case 6.19.4</u>	<u>Pass</u>	
<u>Case 6.19.5</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.20 Single UTF-16 surrogates		
<u>Case 6.20.1</u>	<u>Pass</u>	
<u>Case 6.20.2</u>	<u>Pass</u>	
<u>Case 6.20.3</u>	<u>Pass</u>	
<u>Case 6.20.4</u>	<u>Pass</u>	
<u>Case 6.20.5</u>	<u>Pass</u>	
<u>Case 6.20.6</u>	<u>Pass</u>	
<u>Case 6.20.7</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.21 Paired UTF-16 surrogates		
<u>Case 6.21.1</u>	<u>Pass</u>	
<u>Case 6.21.2</u>	<u>Pass</u>	
<u>Case 6.21.3</u>	<u>Pass</u>	
<u>Case 6.21.4</u>	<u>Pass</u>	
<u>Case 6.21.5</u>	<u>Pass</u>	
<u>Case 6.21.6</u>	<u>Pass</u>	
Case 6.21.7	<u>Pass</u>	
<u>Case 6.21.8</u>	<u>Pass</u>	
6 UTF-8 Handling	WASDv10.1.0+1.0.0	
6.22 Non-character code points (valid UTF-8)		
<u>Case 6.22.1</u>	<u>Pass</u>	
Case 6.22.2	<u>Pass</u>	
<u>Case 6.22.3</u>	<u>Pass</u>	
<u>Case 6.22.4</u>	<u>Pass</u>	
<u>Case 6.22.5</u>	<u>Pass</u>	
<u>Case 6.22.6</u>	<u>Pass</u>	
<u>Case 6.22.7</u>	<u>Pass</u>	
Case 6.22.8	<u>Pass</u>	

<u>Case 6.22.9</u>	<u>Pass</u>
Case 6.22.10	<u>Pass</u>
<u>Case 6.22.11</u>	<u>Pass</u>
Case 6.22.12	<u>Pass</u>
<u>Case 6.22.13</u>	<u>Pass</u>
<u>Case 6.22.14</u>	<u>Pass</u>
<u>Case 6.22.15</u>	<u>Pass</u>
<u>Case 6.22.16</u>	<u>Pass</u>
<u>Case 6.22.17</u>	<u>Pass</u>
<u>Case 6.22.18</u>	<u>Pass</u>
<u>Case 6.22.19</u>	<u>Pass</u>
<u>Case 6.22.20</u>	<u>Pass</u>
<u>Case 6.22.21</u>	<u>Pass</u>
<u>Case 6.22.22</u>	<u>Pass</u>
<u>Case 6.22.23</u>	<u>Pass</u>
<u>Case 6.22.24</u>	<u>Pass</u>
<u>Case 6.22.25</u>	<u>Pass</u>
<u>Case 6.22.26</u>	<u>Pass</u>
Case 6.22.27	<u>Pass</u>
<u>Case 6.22.28</u>	<u>Pass</u>
<u>Case 6.22.29</u>	<u>Pass</u>
<u>Case 6.22.30</u>	<u>Pass</u>
<u>Case 6.22.31</u>	<u>Pass</u>
Case 6.22.32	<u>Pass</u>
Case 6.22.33	<u>Pass</u>
<u>Case 6.22.34</u>	<u>Pass</u>
6 UTF-8 Handling	WASDv10.1.0+1.0.0
6.23 Unicode replacement character	
<u>Case 6.23.1</u>	<u>Pass</u>
7 Close Handling	WASDv10.1.0+1.0.0
7.1 Basic close behavior (fuzzer initiated)	

Case 7.1.1	<u>Pass</u>	
<u>Case 7.1.2</u>	<u>Pass</u>	
<u>Case 7.1.3</u>	<u>Pass</u>	
<u>Case 7.1.4</u>	<u>Pass</u>	
<u>Case 7.1.5</u>	<u>Pass</u>	
7 Close Handling	WASDv10.1.0+1.0.0	
7.3 Close frame structure: payload length (fuzzer initiated	)	
<u>Case 7.3.1</u>	<u>Pass</u>	
<u>Case 7.3.2</u>	<u>Pass</u>	
<u>Case 7.3.3</u>	<u>Pass</u>	
<u>Case 7.3.4</u>	<u>Pass</u>	
<u>Case 7.3.5</u>	<u>Pass</u>	
<u>Case 7.3.6</u>	<u>Pass</u>	
7 Close Handling	WASDv10.1.0+1.0.0	
7.5 Close frame structure: payload value (fuzzer initiated)		
<u>Case 7.5.1</u>	<u>Pass</u>	
7 Close Handling	WASDv10.1.0+1.0.0	
7.7 Close frame structure: valid close codes (fuzzer initiate	ed)	
<u>Case 7.7.1</u>	<u>Pass</u>	
<u>Case 7.7.2</u>	<u>Pass</u>	
<u>Case 7.7.3</u>	<u>Pass</u>	
<u>Case 7.7.4</u>	<u>Pass</u>	
<u>Case 7.7.5</u>	<u>Pass</u>	
<u>Case 7.7.6</u>	<u>Pass</u>	
<u>Case 7.7.7</u>	<u>Pass</u>	
<u>Case 7.7.8</u>	<u>Pass</u>	
<u>Case 7.7.9</u>	<u>Pass</u>	
<u>Case 7.7.10</u>	<u>Pass</u>	
<u>Case 7.7.11</u>	<u>Pass</u>	

7 Close Handling	WASDv10.1.0+1.0.0	
7.9 Close frame structure: invalid close codes (fuzzer initiated)		
<u>Case 7.9.1</u>	<u>Pass</u>	
<u>Case 7.9.2</u>	<u>Pass</u>	
<u>Case 7.9.3</u>	<u>Pass</u>	
<u>Case 7.9.4</u>	<u>Pass</u>	
<u>Case 7.9.5</u>	<u>Pass</u>	
<u>Case 7.9.6</u>	<u>Pass</u>	
<u>Case 7.9.7</u>	<u>Pass</u>	
<u>Case 7.9.8</u>	<u>Pass</u>	
<u>Case 7.9.9</u>	<u>Pass</u>	
<u>Case 7.9.10</u>	<u>Pass</u>	
Case 7.9.11	<u>Pass</u>	
9 Limits/Performance	WASDv10.1.0+1.0.0	
9.1 Text Message (increasing size)		
<u>Case 9.1.1</u>	<u>Pass</u> 2577 ms	
<u>Case 9.1.2</u>	<u>Pass</u> 7418 ms	
<u>Case 9.1.3</u>	<u>Pass</u> 23867 ms	
<u>Case 9.1.4</u>	<u>Pass</u> 89847 ms	
<u>Case 9.1.5</u>	<u>Pass</u> 194252 ms	
<u>Case 9.1.6</u>	<u>Pass</u> 378726 ms	
9 Limits/Performance	WASDv10.1.0+1.0.0	
9.2 Binary Message (increasing size)		
<u>Case 9.2.1</u>	<u>Pass</u> 2640 ms	
<u>Case 9.2.2</u>	<u>Pass</u> 7375 ms	
<u>Case 9.2.3</u>	<u>Pass</u> 26511 ms	

<u>Case 9.2.4</u>	<u>Pass</u> 101941 ms		
<u>Case 9.2.5</u>	<u>Pass</u> 196400 ms		
<u>Case 9.2.6</u>	<u>Pass</u> 383757 ms		
9 Limits/Performance	WASDv10.1.0+1.0.0		
9.3 Fragmented Text Message (fixed size, increasing fragi	9.3 Fragmented Text Message (fixed size, increasing fragment size)		
Case 9.3.1	<u>Pass</u> 81647 ms		
<u>Case 9.3.2</u>	<u>Pass</u> 60435 ms		
<u>Case 9.3.3</u>	<u>Pass</u> 91721 ms		
<u>Case 9.3.4</u>	<u>Pass</u> 87029 ms		
<u>Case 9.3.5</u>	<u>Pass</u> 95010 ms		
<u>Case 9.3.6</u>	<u>Pass</u> 86960 ms		
Case 9.3.7	<u>Pass</u> 88575 ms		
<u>Case 9.3.8</u>	<u>Pass</u> 89434 ms		
<u>Case 9.3.9</u>	<u>Pass</u> 89529 ms		
9 Limits/Performance	WASDv10.1.0+1.0.0		
9.4 Fragmented Binary Message (fixed size, increasing fragment size)			
<u>Case 9.4.1</u>	<u>Pass</u> 93215 ms		
<u>Case 9.4.2</u>	<u>Pass</u> 96566 ms		
<u>Case 9.4.3</u>	<u>Pass</u> 80704 ms		
<u>Case 9.4.4</u>	<u>Pass</u> 95685 ms		
<u>Case 9.4.5</u>	<u>Pass</u> 91013 ms		

<u>Case 9.4.6</u>	<u>Pass</u> 92909 ms	
<u>Case 9.4.7</u>	<u>Pass</u> 93359 ms	
<u>Case 9.4.8</u>	<u>Pass</u> 90169 ms	
<u>Case 9.4.9</u>	<u>Pass</u> 92017 ms	
9 Limits/Performance	WASDv10.1.0+1.0.0	
9.5 Text Message (fixed size, increasing chop size)		
<u>Case 9.5.1</u>	<u>Pass</u> 23370 ms	
<u>Case 9.5.2</u>	<u>Pass</u> 24181 ms	
<u>Case 9.5.3</u>	<u>Pass</u> 24222 ms	
<u>Case 9.5.4</u>	<u>Pass</u> 24022 ms	
<u>Case 9.5.5</u>	<u>Pass</u> 24370 ms	
<u>Case 9.5.6</u>	<u>Pass</u> 23995 ms	
9 Limits/Performance	WASDv10.1.0+1.0.0	
9.6 Binary Text Message (fixed size, increasing chop size)		
<u>Case 9.6.1</u>	<u>Pass</u> 27775 ms	
<u>Case 9.6.2</u>	<u>Pass</u> 27832 ms	
<u>Case 9.6.3</u>	<u>Pass</u> 27716 ms	
<u>Case 9.6.4</u>	<u>Pass</u> 26632 ms	
<u>Case 9.6.5</u>	<u>Pass</u> 26135 ms	
<u>Case 9.6.6</u>	<u>Pass</u> 25920 ms	
9 Limits/Performance	WASDv10.1.0+1.0.0	
9.7 Text Message Roundtrip Time (fixed number, increasing size)		

<u>Case 9.7.1</u>	<u>Pass</u> 4472 ms
<u>Case 9.7.2</u>	<u>Pass</u> 4447 ms
<u>Case 9.7.3</u>	<u>Pass</u> 4530 ms
<u>Case 9.7.4</u>	<u>Pass</u> 46407 ms
<u>Case 9.7.5</u>	<u>Pass</u> 49438 ms
<u>Case 9.7.6</u>	<u>Pass</u> 56004 ms
9 Limits/Performance	WASDv10.1.0+1.0.0
9.8 Binary Message Roundtrip Time (fixed number, increasing size)	
<u>Case 9.8.1</u>	<u>Pass</u> 4438 ms
<u>Case 9.8.2</u>	<u>Pass</u> 4445 ms
<u>Case 9.8.3</u>	<u>Pass</u> 4679 ms
<u>Case 9.8.4</u>	<u>Pass</u> 46861 ms
<u>Case 9.8.5</u>	<u>Pass</u> 48592 ms
<u>Case 9.8.6</u>	<u>Pass</u> 54339 ms
10 Autobahn Protocol Options	WASDv10.1.0+1.0.0
10.1 Auto-Fragmentation	
<u>Case 10.1.1</u>	<u>Pass</u>

# Case 1.1.1

# **Case Description**

Send text message with payload  ${\tt 0}.$ 

#### **Case Expectation**

Receive echo'ed text message (with empty payload). Clean close with normal code.

# Case 1.1.2

#### **Case Description**

Up

Send text message message with payload of length 125.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent). Clean close with normal code.

# Case 1.1.3

#### **Case Description**



Send text message message with payload of length 126.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent). Clean close with normal code.

# Case 1.1.4

### **Case Description**



Send text message message with payload of length 127.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent). Clean close with normal code.

# Case 1.1.5

#### **Case Description**

Up

Send text message message with payload of length 128.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent). Clean close with normal code.

### Case 1.1.6

#### **Case Description**



Send text message message with payload of length 65535.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent). Clean close with normal code.

### Case 1.1.7

#### **Case Description**



Send text message message with payload of length 65536.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent). Clean close with normal code.

# Case 1.1.8

#### **Case Description**



Send text message message with payload of length 65536. Sent out data in chops of 997

Toggle Details



octets.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent). Clean close with normal code.

# Case 1.2.1

#### **Case Description**

Up

Send binary message with payload 0.

#### **Case Expectation**

Receive echo'ed binary message (with empty payload). Clean close with normal code.

# Case 1.2.2

#### **Case Description**

Up

Send binary message message with payload of length 125.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent). Clean close with normal code.

# Case 1.2.3

#### **Case Description**

Up

Send binary message message with payload of length 126.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent). Clean close with normal code.

# Case 1.2.4

#### **Case Description**

Up

Send binary message message with payload of length 127.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent). Clean close with normal code.

# Case 1.2.5

#### **Case Description**

Up

Send binary message message with payload of length 128.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent). Clean close with normal code.

# **Case 1.2.6**

#### **Case Description**

Up

Send binary message message with payload of length 65535.

### **Case Expectation**

Receive echo'ed binary message (with payload as sent). Clean close with normal code.

# Case 1.2.7

#### **Case Description**



Send binary message message with payload of length 65536.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent). Clean close with normal code.

# Case 1.2.8

#### **Case Description**

Up

Send binary message message with payload of length 65536. Sent out data in chops of 997 octets.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent). Clean close with normal code.

# **Case 2.1**

## **Case Description**



Send ping without payload.

#### **Case Expectation**

Pong (with empty payload) is sent in reply to Ping. Clean close with normal code.

# **Case 2.2**

# **Case Description**



Send ping with small text payload.

#### **Case Expectation**

Pong with payload echo'ed is sent in reply to Ping. Clean close with normal code.

# **Case 2.3**

#### **Case Description**

Up

Send ping with small binary (non UTF-8) payload.

#### **Case Expectation**

Pong with payload echo'ed is sent in reply to Ping. Clean close with normal code.

# **Case 2.4**

#### **Case Description**

Up

Send ping with binary payload of 125 octets.

#### **Case Expectation**

Pong with payload echo'ed is sent in reply to Ping. Clean close with normal code.

# **Case 2.5**

#### **Case Description**

Up

Send ping with binary payload of 126 octets.

#### **Case Expectation**

Connection is failed immediately (1002/Protocol Error), since control frames are only allowed to have payload up to and including 125 octets..

# **Case 2.6**

#### **Case Description**

Up

Send ping with binary payload of 125 octets, send in octet-wise chops.

#### **Case Expectation**

Pong with payload echo'ed is sent in reply to Ping. Implementations must be TCP clean. Clean close with normal code.

# **Case 2.7**

#### **Case Description**



Send unsolicited pong without payload. Verify nothing is received. Clean close with normal code.

#### **Case Expectation**

Nothing.

# **Case 2.8**

#### **Case Description**



Send unsolicited pong with payload. Verify nothing is received. Clean close with normal code.

#### **Case Expectation**

Nothing.

# **Case 2.9**

#### **Case Description**



Send unsolicited pong with payload. Send ping with payload. Verify pong for ping is received.

#### **Case Expectation**

Nothing in reply to own Pong, but Pong with payload echo'ed in reply to Ping. Clean close with normal code.

# Case 2.10

#### **Case Description**

Up

Send 10 Pings with payload.

#### **Case Expectation**

Pongs for our Pings with all the payloads. Note: This is not required by the Spec .. but we check for this behaviour anyway. Clean close with normal code.

# **Case 2.11**

#### **Case Description**

Up

Send 10 Pings with payload. Send out octets in octet-wise chops.

#### **Case Expectation**

Pongs for our Pings with all the payloads. Note: This is not required by the Spec .. but we check for this behaviour anyway. Clean close with normal code.

# **Case 3.1**

#### **Case Description**

Up

Send small text message with RSV = 1.

#### **Case Expectation**

The connection is failed immediately (1002/protocol error), since RSV must be 0, when no extension defining RSV meaning has been negoiated.

# **Case 3.2**

#### **Case Description**

Up

Send small text message, then send again with RSV = 2, then send Ping.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since RSV must be 0, when no extension defining RSV meaning has been negoiated. The Pong is not received.

# **Case 3.3**

#### **Case Description**

Up

Send small text message, then send again with RSV = 3, then send Ping. Octets are sent in frame-wise chops. Octets are sent in octet-wise chops.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since RSV must be 0, when no extension defining RSV meaning has been negoiated. The Pong is not received.

# **Case 3.4**

# **Case Description**

Up

Send small text message, then send again with **RSV = 4**, then send Ping. Octets are sent in octet-wise chops.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since RSV must be 0, when no extension defining RSV meaning has been negoiated. The Pong is not received.

# **Case 3.5**

#### **Case Description**

Up

Send small binary message with RSV = 5.

#### **Case Expectation**

The connection is failed immediately, since RSV must be 0.

# **Case 3.6**

### **Case Description**

Up

Send Ping with RSV = 6.

#### **Case Expectation**

The connection is failed immediately, since RSV must be 0.

# **Case 3.7**

#### **Case Description**

Up

Send Close with RSV = 7.

### **Case Expectation**

The connection is failed immediately, since RSV must be 0.

# Case 4.1.1

#### **Case Description**

Up

Send frame with reserved non-control **Opcode = 3**.

#### **Case Expectation**

The connection is failed immediately.

# Case 4.1.2

#### **Case Description**

Up

Send frame with reserved non-control **Opcode = 4** and non-empty payload.

#### **Case Expectation**

The connection is failed immediately.

# Case 4.1.3

#### **Case Description**

Up

Send small text message, then send frame with reserved non-control **Opcode = 5**, then send Ping.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since reserved opcode frame is used. A Pong is not received.

# Case 4.1.4

#### **Case Description**



Send small text message, then send frame with reserved non-control **Opcode = 6** and non-empty payload, then send Ping.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since reserved opcode frame is used. A Pong is not received.

# Case 4.1.5

#### **Case Description**



Send small text message, then send frame with reserved non-control **Opcode = 7** and non-empty payload, then send Ping.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since reserved opcode frame is used. A Pong is not received.

# Case 4.2.1

#### **Case Description**



Send frame with reserved control **Opcode = 11**.

#### **Case Expectation**

The connection is failed immediately.

# Case 4.2.2

#### **Case Description**



Send frame with reserved control **Opcode = 12** and non-empty payload.

#### **Case Expectation**

The connection is failed immediately.

### Case 4.2.3

#### **Case Description**

Up

Send small text message, then send frame with reserved control **Opcode = 13**, then send Ping.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since reserved opcode frame is used. A Pong is not received.

# Case 4.2.4

#### **Case Description**

Up

Send small text message, then send frame with reserved control **Opcode = 14** and non-empty payload, then send Ping.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since reserved opcode frame is used. A Pong is not received.

# Case 4.2.5

#### **Case Description**

Up

Send small text message, then send frame with reserved control **Opcode = 15** and

non-empty payload, then send Ping.

#### **Case Expectation**

Echo for first message is received, but then connection is failed immediately, since reserved opcode frame is used. A Pong is not received.

# **Case 5.1**

#### **Case Description**

Up

Send Ping fragmented into 2 fragments.

#### **Case Expectation**

Connection is failed immediately, since control message MUST NOT be fragmented.

# **Case 5.2**

# **Case Description**

Up

Send Pong fragmented into 2 fragments.

#### **Case Expectation**

Connection is failed immediately, since control message MUST NOT be fragmented.

# **Case 5.3**

#### **Case Description**

Up

Send text Message fragmented into 2 fragments.

#### **Case Expectation**

Message is processed and echo'ed back to us.

# **Case 5.4**

#### **Case Description**

Up

Send text Message fragmented into 2 fragments, octets are sent in frame-wise chops.

#### **Case Expectation**

Message is processed and echo'ed back to us.

# **Case 5.5**

#### **Case Description**



Send text Message fragmented into 2 fragments, octets are sent in octet-wise chops.

#### **Case Expectation**

Message is processed and echo'ed back to us.

# **Case 5.6**

#### **Case Description**



Send text Message fragmented into 2 fragments, one ping with payload in-between.

#### **Case Expectation**

A pong is received, then the message is echo'ed back to us.

# **Case 5.7**

#### **Case Description**



Send text Message fragmented into 2 fragments, one ping with payload in-between. Octets are sent in frame-wise chops.

#### **Case Expectation**

A pong is received, then the message is echo'ed back to us.

# **Case 5.8**

#### **Case Description**



Send text Message fragmented into 2 fragments, one ping with payload in-between. Octets are sent in octet-wise chops.

#### **Case Expectation**

A pong is received, then the message is echo'ed back to us.

# **Case 5.9**

#### **Case Description**



Send unfragmented Text Message after Continuation Frame with FIN = true, where there is nothing to continue, sent in one chop.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

# **Case 5.10**

#### **Case Description**



Send unfragmented Text Message after Continuation Frame with FIN = true, where there is nothing to continue, sent in per-frame chops.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

### Case 5.11

#### **Case Description**

Up

Send unfragmented Text Message after Continuation Frame with FIN = true, where there is nothing to continue, sent in octet-wise chops.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

# Case 5.12

#### **Case Description**

Up

Send unfragmented Text Message after Continuation Frame with FIN = false, where there is nothing to continue, sent in one chop.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

# Case 5.13

#### **Case Description**

Up

Send unfragmented Text Message after Continuation Frame with FIN = false, where there is nothing to continue, sent in per-frame chops.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

# Case 5.14

#### **Case Description**

Up

Send unfragmented Text Message after Continuation Frame with FIN = false, where there is nothing to continue, sent in octet-wise chops.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

# Case 5.15

#### **Case Description**

Up

Send text Message fragmented into 2 fragments, then Continuation Frame with FIN = false where there is nothing to continue, then unfragmented Text Message, all sent in one chop.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

# **Case 5.16**

#### **Case Description**

Up

Repeated 2x: Continuation Frame with FIN = false (where there is nothing to continue), then text Message fragmented into 2 fragments.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

# Case 5.17

#### **Case Description**

Up

Repeated 2x: Continuation Frame with FIN = true (where there is nothing to continue), then text Message fragmented into 2 fragments.

#### **Case Expectation**

The connection is failed immediately, since there is no message to continue.

### Case 5.18

#### **Case Description**

Up

Send text Message fragmented into 2 fragments, with both frame opcodes set to text, sent in one chop.

#### **Case Expectation**

The connection is failed immediately, since all data frames after the initial data frame must have opcode 0.

# **Case 5.19**

#### **Case Description**

Up

A fragmented text message is sent in multiple frames. After sending the first 2 frames of the text message, a Ping is sent. Then we wait 1s, then we send 2 more text fragments, another Ping and then the final text fragment. Everything is legal.

#### **Case Expectation**

The peer immediately answers the first Ping before it has received the last text message fragment. The peer pong's back the Ping's payload exactly, and echo's the payload of the fragmented message back to us.

### Case 5.20

#### **Case Description**

Up

Same as Case 5.19, but send all frames with SYNC = True. Note, this does not change the octets sent in any way, only how the stream is chopped up on the wire.

#### **Case Expectation**

Same as Case 5.19. Implementations must be agnostic to how octet stream is chopped up on wire (must be TCP clean).

### Case 6.1.1

#### **Case Description**



Send text message of length 0.

#### **Case Expectation**

A message is echo'ed back to us (with empty payload).

# Case 6.1.2

#### **Case Description**



Send fragmented text message, 3 fragments each of length 0.

#### **Case Expectation**

A message is echo'ed back to us (with empty payload).

# Case 6.1.3

#### **Case Description**

Up

Send fragmented text message, 3 fragments, first and last of length 0, middle non-empty.

#### **Case Expectation**

A message is echo'ed back to us (with payload = payload of middle fragment).

### Case 6.2.1

#### **Case Description**

Up

Send a valid UTF-8 text message in one fragment.

MESSAGE:

Hello-µ@ßöäüàá-UTF-8!!

48656c6c6f2dc2b540c39fc3b6c3a4c3bcc3a0c3a12d5554462d382121

#### **Case Expectation**

The message is echo'ed back to us.

### Case 6.2.2

#### **Case Description**

Up

Send a valid UTF-8 text message in two fragments, fragmented on UTF-8 code point boundary.

**MESSAGE FRAGMENT 1:** 

Hello-µ@ßöä

48656c6c6f2dc2b540c39fc3b6c3a4

MESSAGE FRAGMENT 2:

üàá-UTF-8!!

c3bcc3a0c3a12d5554462d382121

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.2.3

#### **Case Description**

Up

Send a valid UTF-8 text message in fragments of 1 octet, resulting in frames ending on positions which are not code point ends.

#### MESSAGE:

Hello-µ@ßöäüàá-UTF-8!!

48656c6c6f2dc2b540c39fc3b6c3a4c3bcc3a0c3a12d5554462d382121

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.2.4

#### **Case Description**

Up

Send a valid UTF-8 text message in fragments of 1 octet, resulting in frames ending on positions which are not code point ends.

#### MESSAGE:

κόσμε

cebae1bdb9cf83cebcceb5

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.3.1

#### **Case Description**



Send invalid UTF-8 text message unfragmented.

MESSAGE:

κόσμε♦edited

cebae1bdb9cf83cebcceb5eda080656469746564

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.3.2

#### **Case Description**

Up

Send invalid UTF-8 text message in fragments of 1 octet, resulting in frames ending on positions which are not code point ends.

MESSAGE:

κόσμε♦edited

cebae1bdb9cf83cebcceb5eda080656469746564

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

### Case 6.4.1

#### **Case Description**

Up

Send invalid UTF-8 text message in 3 fragments (frames). First frame payload is valid, then wait, then 2nd frame which contains the payload making the sequence invalid, then wait, then 3rd frame with rest. Note that PART1 and PART3 are valid UTF-8 in themselves, PART2 is a 0x11000 encoded as in the UTF-8 integer encoding scheme, but the codepoint is invalid (out of range).

MESSAGE PARTS:

PART1 =  $\kappa \acute{o} \sigma \mu \epsilon$  (cebae1bdb9cf83cebcceb5)

PART2 = (f4908080)

PART3 = edited (656469746564)

The first frame is accepted, we expect to timeout on the first wait. The 2nd frame should be rejected immediately (fail fast on UTF-8). If we timeout, we expect the connection is failed at least then, since the complete message payload is not valid UTF-8.

## Case 6.4.2

#### **Case Description**

Up

Same as Case 6.4.1, but in 2nd frame, we send only up to and including the octet making the complete payload invalid.

**MESSAGE PARTS:** 

PART1 = κόσμε� (cebae1bdb9cf83cebcceb5f4)

PART2 = (90)

PART3 = • edited (8080656469746564)

#### **Case Expectation**

The first frame is accepted, we expect to timeout on the first wait. The 2nd frame should be rejected immediately (fail fast on UTF-8). If we timeout, we expect the connection is failed at least then, since the complete message payload is not valid UTF-8.

## Case 6.4.3

### **Case Description**

Up

Same as Case 6.4.1, but we send message not in 3 frames, but in 3 chops of the same message frame.

MESSAGE PARTS:

PART1 =  $\kappa \acute{o} \sigma \mu \epsilon$  (cebae1bdb9cf83cebcceb5)

PART2 = (f4908080)

PART3 = edited (656469746564)

#### **Case Expectation**

The first chop is accepted, we expect to timeout on the first wait. The 2nd chop should be rejected immediately (fail fast on UTF-8). If we timeout, we expect the connection is Toggle Details

failed at least then, since the complete message payload is not valid UTF-8.

## Case 6.4.4

#### **Case Description**

Up ]

Same as Case 6.4.2, but we send message not in 3 frames, but in 3 chops of the same message frame.

**MESSAGE PARTS:** 

PART1 = κόσμε� (cebae1bdb9cf83cebcceb5f4)

PART2 = (90)

PART3 = ()

#### **Case Expectation**

The first chop is accepted, we expect to timeout on the first wait. The 2nd chop should be rejected immediately (fail fast on UTF-8). If we timeout, we expect the connection is failed at least then, since the complete message payload is not valid UTF-8.

## Case 6.5.1

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

κόσμε

cebae1bdb9cf83cebcceb5

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.6.1

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



ce

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.6.2

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

Κ

ceba

### **Case Expectation**

The message is echo'ed back to us.

## Case 6.6.3

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



cebae1

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.6.4

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



cebae1bd

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.6.5

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

κó

cebae1bdb9

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.6.6

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:

ко҆�

cebae1bdb9cf

#### **Case Expectation**

## Case 6.6.7

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

κόσ

cebae1bdb9cf83

### **Case Expectation**

The message is echo'ed back to us.

## Case 6.6.8

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:

κόσ�

cebae1bdb9cf83ce

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.6.9

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

κόσμ

cebae1bdb9cf83cebc

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.6.10

#### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:

κόσμ�

cebae1bdb9cf83cebcce

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.6.11

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

κόσμε

cebae1bdb9cf83cebcceb5

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.7.1

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

00

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.7.2

## **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

20

c280

### **Case Expectation**

The message is echo'ed back to us.

## Case 6.7.3

## **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

08

e0a080

### **Case Expectation**

The message is echo'ed back to us.

## Case 6.7.4

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

010

f0908080

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.8.1

## **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f888808080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

# Case 6.8.2

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.9.1

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

00 1E

7f

## **Case Expectation**

The message is echo'ed back to us.

## Case 6.9.2

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

韶

dfbf

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.9.3

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

efbfbf

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.9.4

## **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

匷

f48fbfbf

### **Case Expectation**

The message is echo'ed back to us.

## Case 6.10.1

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f7bfbfbf

### **Case Expectation**

## Case 6.10.2

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fbbfbfbfbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.10.3

## **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fdbfbfbfbfbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

# Case 6.11.1

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:



The message is echo'ed back to us.

## Case 6.11.2

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

E0 00

ee8080

### **Case Expectation**

The message is echo'ed back to us.

## Case 6.11.3

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:



efbfbd

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.11.4

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

EEE.

f48fbfbf

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.11.5

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f4908080

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.12.1

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



80

### **Case Expectation**

## Case 6.12.2

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



bf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.12.3

## **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



80bf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

# Case 6.12.4

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.12.5

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



80bf80bf

## **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.12.6

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



80bf80bf80

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.12.7



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



80bf80bf80bf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.12.8

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:

\$\displaystyle{\psi} \displaystyle{\psi} \disp

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.13.1

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:

c020c120c220c320c420c520c620c720c820c920ca20cb20cc20cd20ce20cf20d020d120d220d320d4

#### **Case Expectation**

## Case 6.13.2

#### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:

e020e120e220e320e420e520e620e720e820e920ea20eb20ec20ed20ee20

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.13.3

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:

\* \* \* \* \* \* \* \*

f020f120f220f320f420f520f620

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.13.4

#### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.13.5

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fc20

## **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.1

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



c0

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.2

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



e080

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.3

## **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f08080

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.4

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f8808080

#### **Case Expectation**

## Case 6.14.5

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fc80808080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.6

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



df

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.7

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.8

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f7bfbf

## **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.9

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fbbfbfbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.14.10

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fdbfbfbfbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.15.1

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.16.1

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fe

#### **Case Expectation**

## Case 6.16.2

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



ff

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.16.3

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



# **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.17.1

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.17.2

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



e080af

## **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.17.3

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f08080af

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.17.4

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f8808080af

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.17.5

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fc80808080af

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.18.1

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



c1bf

### **Case Expectation**

## Case 6.18.2

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



e09fbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.18.3

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f08fbfbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.18.4

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.18.5

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fc83bfbfbfbf

## **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.19.1

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



c080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.19.2

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



e08080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.19.3

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f0808080

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.19.4

## **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



f880808080

### **Case Expectation**

## Case 6.19.5

### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



fc8080808080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.20.1

## **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



eda080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

# Case 6.20.2

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.20.3

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edae80

## **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.20.4

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edafbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.20.5

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edb080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.20.6

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edbe80

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.20.7

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edbfbf

#### **Case Expectation**

## Case 6.21.1

#### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



eda080edb080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.21.2

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



eda080edbfbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

# Case 6.21.3

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edadbfedb080

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.21.4

#### **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edadbfedbfbf

## **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.21.5

## **Case Description**

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edae80edb080

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.21.6

Up

Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edae80edbfbf

#### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.21.7

#### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edafbfedb080

### **Case Expectation**

The connection is failed immediately, since the payload is not valid UTF-8.

## Case 6.21.8

### **Case Description**



Send a text message with payload which is not valid UTF-8 in one fragment.

MESSAGE:



edafbfedbfbf

#### **Case Expectation**

## Case 6.22.1

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

臣

efbfbe

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.22.2

## **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

efbfbf

#### **Case Expectation**

The message is echo'ed back to us.

## Case 6.22.3

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

f09fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.4

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OIE EEE

f09fbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.5

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OZE EEE

f0afbfbe

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.6

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

鹠

f0afbfbf

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.7

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

f0bfbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.8

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

鹠

f0bfbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.9

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PHE I

f18fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.10

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OME.

f18fbfbf

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.11

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEE

f19fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.12

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEE.

f19fbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.13

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

05F FFE

f1afbfbe

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.14

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEF.

f1afbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.15

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OTF EFE

f1bfbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.16

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEE

f1bfbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.17

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

08F

f28fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.18

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

03F

f28fbfbf

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.19

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

09F EFE

f29fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.20

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

09F FFF

f29fbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.21

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEE

f2afbfbe

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.22

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEFF

f2afbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.23

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OBE

f2bfbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.24

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OBE

f2bfbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.25

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEE

f38fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.26

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OCF EEE

f38fbfbf

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.27

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

[ODF]

f39fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.28

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PPE |

f39fbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.29

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEF

f3afbfbe

#### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.30

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEF

f3afbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.31

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

OFF

f3bfbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.32

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

PEE I

f3bfbfbf

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.33

### **Case Description**

Up

Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

TOF

f48fbfbe

### **Case Expectation**

The message is echo'ed back to us.

# Case 6.22.34

### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:

IDF.

f48fbfbf

#### **Case Expectation**

The message is echo'ed back to us.

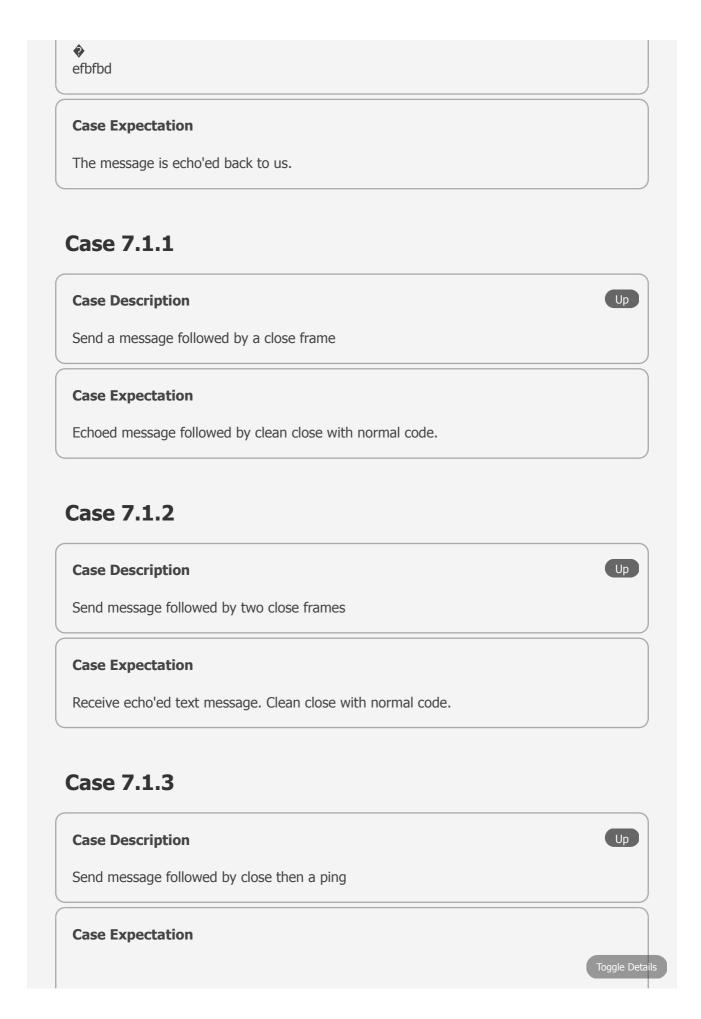
# Case 6.23.1

#### **Case Description**



Send a text message with payload which is valid UTF-8 in one fragment.

MESSAGE:



Receive echo'ed text message. Clean close with normal code.

# Case 7.1.4

### **Case Description**

Up

Send message followed by close the another message

#### **Case Expectation**

Receive echo'ed text message. Clean close with normal code.

# Case 7.1.5

### **Case Description**

Up

Send message fragment1 followed by close then fragment

#### **Case Expectation**

Clean close with normal code.

# Case 7.3.1

### **Case Description**

Up

Send a close frame with payload length 0 (no close code, no close reason)

### **Case Expectation**

Clean close with normal code.

# Case 7.3.2

# **Case Description**

Up

Send a close frame with payload length 1

### **Case Expectation**

Clean close with protocol error or drop TCP.

# Case 7.3.3

### **Case Description**

Up

Send a close frame with payload length 2 (regular close with a code)

### **Case Expectation**

Clean close with normal code.

# Case 7.3.4

### **Case Description**

Up

Send a close frame with close code and close reason

#### **Case Expectation**

Clean close with normal code.

# Case 7.3.5

### **Case Description**

Up

Send a close frame with close code and close reason of maximum length (123)

### **Case Expectation**

Clean close with normal code.

# Case 7.3.6

#### **Case Description**

Up

Send a close frame with close code and close reason which is too long (124) - total frame payload 126 octets

#### **Case Expectation**

Clean close with protocol error code or dropped TCP connection.

# Case 7.5.1

### **Case Description**

Up

Send a close frame with invalid UTF8 payload

### **Case Expectation**

Clean close with protocol error or invalid utf8 code or dropped TCP.

# Case 7.7.1

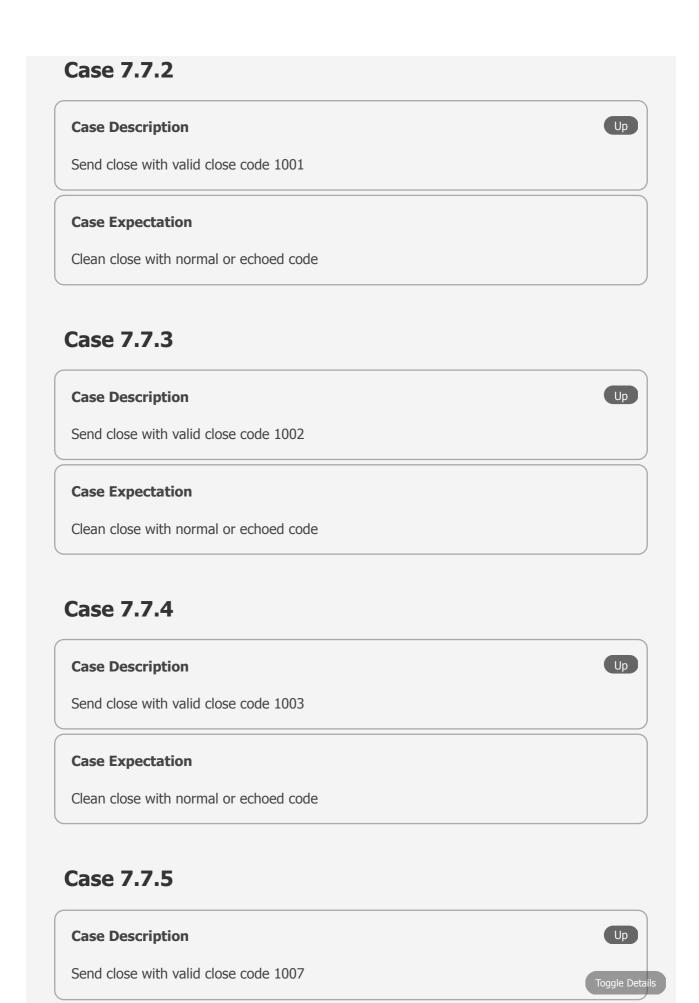
### **Case Description**

Up

Send close with valid close code 1000

### **Case Expectation**

Clean close with normal or echoed code



Clean close with normal or echoed code

# Case 7.7.6

### **Case Description**

Up

Send close with valid close code 1008

### **Case Expectation**

Clean close with normal or echoed code

# Case 7.7.7

### **Case Description**



Send close with valid close code 1009

### **Case Expectation**

Clean close with normal or echoed code

# Case 7.7.8

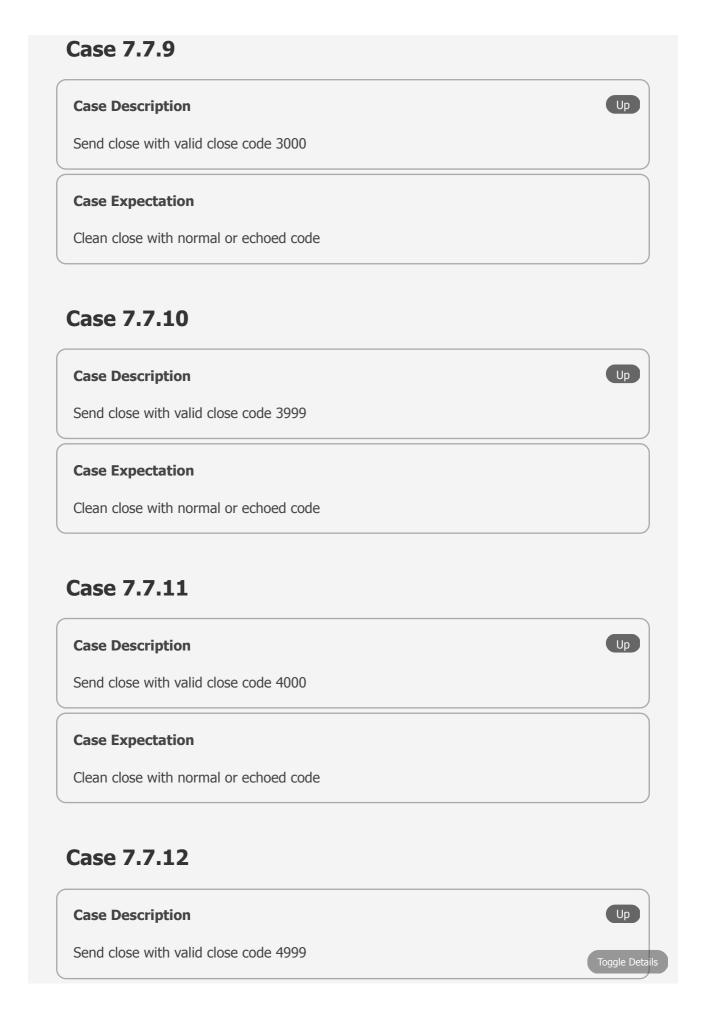
# **Case Description**



Send close with valid close code 1010

#### **Case Expectation**

Clean close with normal or echoed code



Clean close with normal or echoed code

# Case 7.9.1

### **Case Description**

Up

Send close with invalid close code 0

### **Case Expectation**

Clean close with protocol error code or drop TCP

# Case 7.9.2

### **Case Description**



Send close with invalid close code 999

### **Case Expectation**

Clean close with protocol error code or drop TCP

# Case 7.9.3

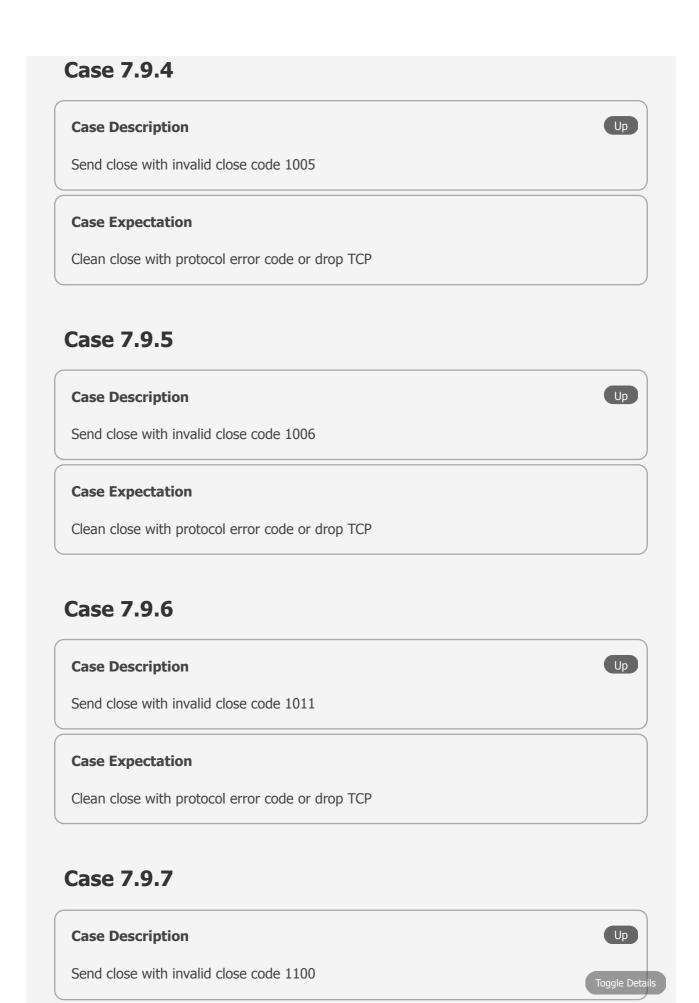
# **Case Description**



Send close with invalid close code 1004

#### **Case Expectation**

Clean close with protocol error code or drop TCP



Clean close with protocol error code or drop TCP

# Case 7.9.8

### **Case Description**

Up

Send close with invalid close code 2000

### **Case Expectation**

Clean close with protocol error code or drop TCP

# Case 7.9.9

#### **Case Description**

Up

Send close with invalid close code 2999

### **Case Expectation**

Clean close with protocol error code or drop TCP

# Case 7.9.10

# **Case Description**



Send close with invalid close code 5000

#### **Case Expectation**

Clean close with protocol error code or drop TCP

# Case 7.9.11

#### **Case Description**

Up

Send close with invalid close code 65535

### **Case Expectation**

Clean close with protocol error code or drop TCP

### Case 9.1.1

### **Case Description**



Send text message message with payload of length 64 \* 2\*\*10 (64k).

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.1.2

### **Case Description**



Send text message message with payload of length 256 \* 2\*\*10 (256k).

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.1.3

### **Case Description**



Send text message message with payload of length 1 \* 2\*\*20 (1M).

Receive echo'ed text message (with payload as sent).

# Case 9.1.4

### **Case Description**

Up

Send text message message with payload of length 4 \* 2\*\*20 (4M).

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.1.5

#### **Case Description**

Up

Send text message message with payload of length 8 \* 2\*\*20 (8M).

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.1.6

### **Case Description**

Up

Send text message message with payload of length 16 \* 2\*\*20 (16M).

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.2.1

#### **Case Description**

Up

Send binary message message with payload of length 64 \* 2\*\*10 (64k).

### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

### Case 9.2.2

### **Case Description**

Up

Send binary message message with payload of length 256 \* 2\*\*10 (256k).

### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.2.3

### **Case Description**

Up

Send binary message message with payload of length 1 \* 2\*\*20 (1M).

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.2.4

#### **Case Description**



Send binary message message with payload of length 4 \* 2\*\*20 (4M).

Receive echo'ed binary message (with payload as sent).

# Case 9.2.5

#### **Case Description**

Up

Send binary message message with payload of length 8 \* 2\*\*20 (16M).

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.2.6

#### **Case Description**

Up

Send binary message message with payload of length 16 \* 2\*\*20 (16M).

### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.3.1

### **Case Description**

Up

Send fragmented text message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 64.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.3.2

### **Case Description**

Up

Send fragmented text message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 256.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.3.3

### **Case Description**

Up

Send fragmented text message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 1k.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.3.4

#### **Case Description**

Up

Send fragmented text message message with message payload of length 4\*2\*\*20 (4M). Sent out in fragments of 4k.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.3.5

### **Case Description**



Send fragmented text message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 16k.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.3.6

#### **Case Description**

Up

Send fragmented text message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 64k.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.3.7

#### **Case Description**

Up

Send fragmented text message message with message payload of length 4\*2\*\*20 (4M). Sent out in fragments of 256k.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.3.8

### **Case Description**

Up

Send fragmented text message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 1M.

Receive echo'ed text message (with payload as sent).

# Case 9.3.9

#### **Case Description**

Up

Send fragmented text message message with message payload of length 4 \* 2\*\*20 (8M). Sent out in fragments of 4M.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.4.1

#### **Case Description**

Up

Send fragmented binary message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 64.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.4.2

#### **Case Description**

Up

Send fragmented binary message message with message payload of length 4\*2\*\*20 (4M). Sent out in fragments of 256.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.4.3

#### **Case Description**

Up

Send fragmented binary message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 1k.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.4.4

#### **Case Description**

Up

Send fragmented binary message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 4k.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.4.5

# **Case Description**

Up

Send fragmented binary message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 16k.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

### Case 9.4.6

#### **Case Description**

Up

Send fragmented binary message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 64k.

### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.4.7

### **Case Description**

Up

Send fragmented binary message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 256k.

### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.4.8

#### **Case Description**

Up

Send fragmented binary message message with message payload of length 4\*2\*\*20 (4M). Sent out in fragments of 1M.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

# Case 9.4.9

### **Case Description**



Send fragmented binary message message with message payload of length 4 \* 2\*\*20 (4M). Sent out in fragments of 4M.

### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

### Case 9.5.1

#### **Case Description**

Up

Send text message message with payload of length 1 \* 2\*\*20 (1M). Sent out data in chops of 64 octets.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.5.2

#### **Case Description**

Up

Send text message message with payload of length 1 \* 2\*\*20 (1M). Sent out data in chops of 128 octets.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.5.3

#### **Case Description**

Up

Send text message message with payload of length 1 \* 2\*\*20 (1M). Sent out data in chops of 256 octets.

Receive echo'ed text message (with payload as sent).

# Case 9.5.4

#### **Case Description**

Up

Send text message message with payload of length 1\*2\*\*20 (1M). Sent out data in chops of 512 octets.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.5.5

#### **Case Description**

Up

Send text message message with payload of length 1 \* 2\*\*20 (1M). Sent out data in chops of 1024 octets.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.5.6

#### **Case Description**

Up

Send text message message with payload of length 1 \* 2\*\*20 (1M). Sent out data in chops of 2048 octets.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.6.1

#### **Case Description**

Up

Send binary message message with payload of length 1 \* 2\*\*20 (1M). Sent out data in chops of 64 octets.

#### **Case Expectation**

Receive echo'ed binary message (with payload as sent).

### Case 9.6.2

### **Case Description**

Up

Send binary message message with payload of length 1\*2\*\*20 (1M). Sent out data in chops of 128 octets.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.6.3

# **Case Description**

Up

Send binary message message with payload of length 1 \* 2\*\*20 (1M). Sent out data in chops of 256 octets.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.6.4

### **Case Description**

Up

Send binary message message with payload of length 1\*2\*\*20 (1M). Sent out data in chops of 512 octets.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

# Case 9.6.5

### **Case Description**

Up

Send binary message message with payload of length 1\*2\*\*20 (1M). Sent out data in chops of 1024 octets.

### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.6.6

#### **Case Description**

Up

Send binary message message with payload of length 1\*2\*\*20 (1M). Sent out data in chops of 2048 octets.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent).

### Case 9.7.1

### **Case Description**



Send 1000 text messages of payload size 0 to measure implementation/network RTT (round trip time) / latency.

### **Case Expectation**

Receive echo'ed text messages (with payload as sent). Timeout case after 60 secs.

### Case 9.7.2

#### **Case Description**

Up

Send 1000 text messages of payload size 16 to measure implementation/network RTT (round trip time) / latency.

### **Case Expectation**

Receive echo'ed text messages (with payload as sent). Timeout case after 60 secs.

# Case 9.7.3

#### **Case Description**

Up

Send 1000 text messages of payload size 64 to measure implementation/network RTT (round trip time) / latency.

### **Case Expectation**

Receive echo'ed text messages (with payload as sent). Timeout case after 60 secs.

# Case 9.7.4

#### **Case Description**



Send 1000 text messages of payload size 256 to measure implementation/network RTT (round trip time) / latency.

Receive echo'ed text messages (with payload as sent). Timeout case after 120 secs.

### Case 9.7.5

#### **Case Description**

Up

Send 1000 text messages of payload size 1024 to measure implementation/network RTT (round trip time) / latency.

### **Case Expectation**

Receive echo'ed text messages (with payload as sent). Timeout case after 240 secs.

# Case 9.7.6

#### **Case Description**

Up

Send 1000 text messages of payload size 4096 to measure implementation/network RTT (round trip time) / latency.

#### **Case Expectation**

Receive echo'ed text messages (with payload as sent). Timeout case after 480 secs.

# Case 9.8.1

#### **Case Description**

Up

Send 1000 binary messages of payload size 0 to measure implementation/network RTT (round trip time) / latency.

#### **Case Expectation**

Receive echo'ed binary messages (with payload as sent). Timeout case after 60 secs.

### Case 9.8.2

#### **Case Description**

Up

Send 1000 binary messages of payload size 16 to measure implementation/network RTT (round trip time) / latency.

### **Case Expectation**

Receive echo'ed binary messages (with payload as sent). Timeout case after 60 secs.

### Case 9.8.3

### **Case Description**



Send 1000 binary messages of payload size 64 to measure implementation/network RTT (round trip time) / latency.

#### **Case Expectation**

Receive echo'ed binary messages (with payload as sent). Timeout case after 60 secs.

### Case 9.8.4

### **Case Description**



Send 1000 binary messages of payload size 256 to measure implementation/network RTT (round trip time) / latency.

#### **Case Expectation**

Receive echo'ed binary messages (with payload as sent). Timeout case after 120 secs.

### Case 9.8.5

### **Case Description**

Up

Send 1000 binary messages of payload size 1024 to measure implementation/network RTT (round trip time) / latency.

### **Case Expectation**

Receive echo'ed binary messages (with payload as sent). Timeout case after 240 secs.

# Case 9.8.6

### **Case Description**

Up

Send 1000 binary messages of payload size 4096 to measure implementation/network RTT (round trip time) / latency.

### **Case Expectation**

Receive echo'ed binary messages (with payload as sent). Timeout case after 480 secs.

# Case 10.1.1

#### **Case Description**

Up

Send text message with payload of length 65536 and **autoFragmentSize = 1300**.

#### **Case Expectation**

Receive echo'ed text message (with payload as sent and transmitted frame counts as expected). Clean close with normal code.