

Smuxi - Bug # 802: SSL IRC connections usually only work on the first try (local engine)

Status:	Closed	Priority:	Normal
Author:	vith	Category:	Engine IRC
Created:	01/19/2013	Assigned to:	Mirco Bauer
Updated:	05/21/2015	Due date:	
Complexity:	High		
Found in Version:	0.8.11.0 (master/b14d3e4)		
Subject:	SSL IRC connections usually only work on the first try (local engine)		
Description:	<p>I can connect to morgan.freenode.net:6697 SSL once, but if I disconnect and reconnect I get this:</p> <pre>09:52 -!- Connecting to morgan.freenode.net port 6697... 09:52 -!- Connection failed! Reason: Could not connect to: morgan.freenode.net:6697 The authentication or decryption has failed.</pre> <p>However, I can still connect to a different SSL IRC server (turing.nullirc.net:6697 SSL). However, if I open a second connection tab to turing I sometimes get:</p> <pre>09:53 -!- Connecting to turing.nullirc.net port 6697... 09:53 -!- Connection failed! Reason: Could not connect to: turing.nullirc.net:6697 BeginWrite failure</pre> <p>If I close all NullIRC tabs, I can again connect to turing successfully. Attempting a second connection results in the same BeginWrite failure.</p> <p>There may be some randomness involved to when connections succeed or fail. If you just keep opening new server tabs, alternating between servers, it can start working again.</p> <p>Debug log is attached.</p> <p>smuxi-frontend-gnome is built from git master/b14d3e4</p> <pre>built with ./autogen.sh --prefix=\$HOME MCS=/usr/bin/dmcs && make && make install</pre> <p>Mono JIT compiler version 2.10.8.1 (Debian 2.10.8.1-5ubuntu1)</p> <pre>Linux vith-ubuntu-vm 3.5.0-22-generic #34-Ubuntu SMP Tue Jan 8 21:47:00 UTC 2013 x86_64 x86_64 x86_64 GNU/Linux</pre> <p>Ubuntu 12.10 64-bit Desktop in VMWare Workstation</p>		

Associated revisions

05/21/2015 04:40 PM - Mirco Bauer

Server, Frontend-GNOME: workaround TLS/SSL negotiation caching issues on Mono (closes: #802)

The symptom usually is that the first TLS/SSL connect works but no following ones to a specific server.

History

01/19/2013 05:30 PM - Mirco Bauer

- Complexity set to High

- Found in Version changed from GNOME frontend 0.8.11.0 (master/b14d3e4) to 0.8.11.0 (master/b14d3e4)

I can reproduce the 2nd SSL connect fails issue with morgan.freenode.net on Mono 3.0.1.

Also the issue that sometimes (tried it 6 times) the SSL connection to turing.nullirc.net fails, but I get this message instead:

```
<pre>
17:29:26 -!- Connection failed! Reason: Could not connect to: turing.nullirc.net:6697 The authentication or decryption has failed.
</pre>
```

01/19/2013 05:47 PM - Mirco Bauer

Here a minimal test-case to reproduce this issue with just Mono:

```
<pre>
wget https://raw.githubusercontent.com/mono/mono/master/mcs/class/Mono.Security/Test/tools/tlstest/tlstest.cs
dmcsc tlstest.cs -r:Mono.Security
mono tlstest.exe https://morgan.freenode.net:6697 https://morgan.freenode.net:6697
</pre>
```

Output:

```
<pre>
meebey@redhorse:~/tmp$ mono tlstest.exe https://morgan.freenode.net:6697 https://morgan.freenode.net:6697
```

```
https://morgan.freenode.net:6697
```

[Subject]

CN=*.freenode.net, OU=Gandi Standard Wildcard SSL, OU=Domain Control Validated

[Issuer]

CN=Gandi Standard SSL CA, O=GANDI SAS, C=FR

[Not Before]

1/14/2013 1:00:00 AM

[Not After]

1/15/2014 12:59:59 AM

[Thumbprint]

9C326008AF581A62A97053852CB53A6F320F5E67

Valid From: 1/14/2013 1:00:00 AM

Valid Until: 1/15/2014 12:59:59 AM

Error #-2146762486: CERT_E_CHAINING 0x800B010A

```
https://morgan.freenode.net:6697
```

```
FAILED: #-2146233087
```

```
System.IO.IOException: The authentication or decryption has failed. ---> Mono.Security.Protocol.Tls.TlsException: The server stopped the handshake.
```

```
at Mono.Security.Protocol.Tls.SslClientStream.SafeReceiveRecord (System.IO.Stream s) [0x00000] in <filename unknown>:0
```

```
at Mono.Security.Protocol.Tls.SslClientStream.OnNegotiateHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0
```

```
at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0
```

```
--- End of inner exception stack trace ---
```

```
at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0
```

```
</pre>
```

01/19/2013 05:52 PM - Mirco Bauer

When I tried to connect too often I get this:

```
<pre>
meebey@redhorse:~/tmp$ mono tlstest.exe https://morgan.freenode.net:6697 https://morgan.freenode.net:6697

https://morgan.freenode.net:6697
FAILED: #-2146233087
System.IO.IOException: EndWrite failure ---> System.Net.Sockets.SocketException: The socket has been shut down
  at System.Net.Sockets.Socket.EndSend (IAsyncResult result) [0x00000] in <filename unknown>:0
  at System.Net.Sockets.NetworkStream.EndWrite (IAsyncResult ar) [0x00000] in <filename unknown>:0
  --- End of inner exception stack trace ---
  at System.Net.Sockets.NetworkStream.EndWrite (IAsyncResult ar) [0x00000] in <filename unknown>:0
  at Mono.Security.Protocol.Tls.RecordProtocol.EndSendRecord (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0
    at Mono.Security.Protocol.Tls.RecordProtocol.SendRecord (ContentType contentType, System.Byte[] recordData) [0x00000] in <filename
unknown>:0
  at Mono.Security.Protocol.Tls.RecordProtocol.SendAlert (Mono.Security.Protocol.Tls.Alert alert) [0x00000] in <filename unknown>:0
  at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0

https://morgan.freenode.net:6697
FAILED: #-2146233087
System.IO.IOException: The authentication or decryption has failed. ---> Mono.Security.Protocol.Tls.TlsException: The authentication or decryption
has failed.
  at Mono.Security.Protocol.Tls.RecordProtocol.ReadRecordBuffer (Int32 contentType, System.IO.Stream record) [0x00000] in <filename unknown>:0

  at Mono.Security.Protocol.Tls.RecordProtocol.InternalReceiveRecordCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0
  --- End of inner exception stack trace ---
  at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0
</pre>
```

This makes it pretty clear that the 2nd connect issue is not really about SSL handshake but more about some invalid state, probably cached.

01/19/2013 06:27 PM - Mirco Bauer

After studying some of Mono's SSL code, I found the cache and the default lifetime of it (180 seconds) and a way to change that default lifetime:

```
<pre>
MONO_TLS_SESSION_CACHE_TIMEOUT=0 mono --debug tlstest.exe https://morgan.freenode.net:6697 https://morgan.freenode.net:6697
</pre>

<pre>
meebey@redhorse:~/tmp$ MONO_TLS_SESSION_CACHE_TIMEOUT=0 mono --debug tlstest.exe https://morgan.freenode.net:6697
https://morgan.freenode.net:6697

https://morgan.freenode.net:6697
[Subject]
  CN=*.freenode.net, OU=Gandi Standard Wildcard SSL, OU=Domain Control Validated

[Issuer]
  CN=Gandi Standard SSL CA, O=GANDI SAS, C=FR

[Not Before]
  1/14/2013 1:00:00 AM

[Not After]
  1/15/2014 12:59:59 AM
```

[Thumbprint]

9C326008AF581A62A97053852CB53A6F320F5E67

Valid From: 1/14/2013 1:00:00 AM

Valid Until: 1/15/2014 12:59:59 AM

Error #-2146762486: CERT_E_CHAINING 0x800B010A

https://morgan.freenode.net:6697

[Subject]

CN=*.freenode.net, OU=Gandi Standard Wildcard SSL, OU=Domain Control Validated

[Issuer]

CN=Gandi Standard SSL CA, O=GANDI SAS, C=FR

[Not Before]

1/14/2013 1:00:00 AM

[Not After]

1/15/2014 12:59:59 AM

[Thumbprint]

9C326008AF581A62A97053852CB53A6F320F5E67

Valid From: 1/14/2013 1:00:00 AM

Valid Until: 1/15/2014 12:59:59 AM

Error #-2146762486: CERT_E_CHAINING 0x800B010A

</pre>

Trying it too often, the IRCd server starts to hate us again and simply closes the socket after accepting the connection:

<pre>

meebey@redhorse:~/tmp\$ MONO_TLS_SESSION_CACHE_TIMEOUT=-1 mono --debug tlstest.exe https://morgan.freenode.net:6697

https://morgan.freenode.net:6697

FAILED: #-2146233087

System.IO.IOException: EndWrite failure ----> System.Net.Sockets.SocketException: The socket has been shut down

```

        at System.Net.Sockets.Socket.EndSend (IAsyncResult result) [0x0002d] in
/tmp/buildd/mono-3.0.1+dfsg/mcs/class/System/System.Net.Sockets/Socket_2_1.cs:2032
        at System.Net.Sockets.NetworkStream.EndWrite (IAsyncResult ar) [0x0002f] in
/tmp/buildd/mono-3.0.1+dfsg/mcs/class/System/System.Net.Sockets/NetworkStream.cs:346
--- End of inner exception stack trace ---
        at System.Net.Sockets.NetworkStream.EndWrite (IAsyncResult ar) [0x0003d] in
/tmp/buildd/mono-3.0.1+dfsg/mcs/class/System/System.Net.Sockets/NetworkStream.cs:348
        at Mono.Security.Protocol.Tls.RecordProtocol.EndSendRecord (IAsyncResult asyncResult) [0x00040] in
/tmp/buildd/mono-3.0.1+dfsg/mcs/class/Mono.Security/Mono.Security.Protocol.Tls/RecordProtocol.cs:721
        at Mono.Security.Protocol.Tls.RecordProtocol.SendRecord (ContentType contentType, System.Byte[] recordData) [0x0000b] in
/tmp/buildd/mono-3.0.1+dfsg/mcs/class/Mono.Security/Mono.Security.Protocol.Tls/RecordProtocol.cs:729
        at Mono.Security.Protocol.Tls.RecordProtocol.SendAlert (Mono.Security.Protocol.Tls.Alert alert) [0x00027] in
/tmp/buildd/mono-3.0.1+dfsg/mcs/class/Mono.Security/Mono.Security.Protocol.Tls/RecordProtocol.cs:625
        at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x00019] in

```

/tmp/buildd/mono-3.0.1+dfsg/mcs/class/Mono.Security/Mono.Security.Protocol.Tls/SslStreamBase.cs:98

https://morgan.freenode.net:6697

FAILED: #-2146233087

System.IO.IOException: The authentication or decryption has failed. ---> Mono.Security.Protocol.Tls.TlsException: The authentication or decryption has failed.

at Mono.Security.Protocol.Tls.RecordProtocol.ReadRecordBuffer (Int32 contentType, System.IO.Stream record) [0x00036] in /tmp/buildd/mono-3.0.1+dfsg/mcs/class/Mono.Security/Mono.Security.Protocol.Tls/RecordProtocol.cs:458

at Mono.Security.Protocol.Tls.RecordProtocol.InternalReceiveRecordCallback (IAsyncResult asyncResult) [0x0004b] in /tmp/buildd/mono-3.0.1+dfsg/mcs/class/Mono.Security/Mono.Security.Protocol.Tls/RecordProtocol.cs:355

--- End of inner exception stack trace ---

at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x0002a] in /tmp/buildd/mono-3.0.1+dfsg/mcs/class/Mono.Security/Mono.Security.Protocol.Tls/SslStreamBase.cs:100

</pre>

This means there still seems to be some caching involved, as the 2nd attempt does not fail like the 1st attempt...

01/19/2013 06:32 PM - Mirco Bauer

Disabling the session cache is not good enough to make turing.nullirc.net work, see here:

<pre>
meebey@redhorse:~/tmp\$ MONO_TLS_SESSION_CACHE_TIMEOUT=0 mono tlstest.exe https://turing.nullirc.net:6697 https://turing.nullirc.net:6697

https://turing.nullirc.net:6697

[Subject]

E=ms@nullirc.net, CN=turing.nullirc.net, OU=turing.nullirc.net, O=NullIRC, L=Dallas, S=Texas, C=US

[Issuer]

E=ms@nullirc.net, CN=turing.nullirc.net, OU=turing.nullirc.net, O=NullIRC, L=Dallas, S=Texas, C=US

[Not Before]

7/26/2009 6:16:04 AM

[Not After]

8/25/2009 6:16:04 AM

[Thumbprint]

9FF1725B5119B73CAD176BA545439BA78FD241FA

Valid From: 7/26/2009 6:16:04 AM

Valid Until: 8/25/2009 6:16:04 AM

Error #-2146762487: CERT_E_UNTRUSTEDROOT 0x800B0109

https://turing.nullirc.net:6697

FAILED: #-2146233087

System.IO.IOException: The authentication or decryption has failed. ---> Mono.Security.Protocol.Tls.TlsException: The server stopped the handshake.

at Mono.Security.Protocol.Tls.SslClientStream.SafeReceiveRecord (System.IO.Stream s) [0x00000] in <filename unknown>:0

at Mono.Security.Protocol.Tls.SslClientStream.OnNegotiateHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0

at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0

--- End of inner exception stack trace ---

at Mono.Security.Protocol.Tls.SslStreamBase.AsyncHandshakeCallback (IAsyncResult asyncResult) [0x00000] in <filename unknown>:0

</pre>

05/14/2015 09:18 AM - Mirco Bauer

Smuxi has now a FAQ entry dedicated to SSL issues, see here: <https://smuxi.im/faq/troubleshooting/linux-tls/>

05/14/2015 09:19 AM - Mirco Bauer

- *Target version set to 1.0*

Since disabling the SSL caching is an easy quick fix, Smuxi should do that by default. Smuxi is not making many SSL connections, thus this shouldn't be a performance issue.

05/21/2015 05:16 PM - Mirco Bauer

- *Status changed from New to Closed*

- *% Done changed from 0 to 100*

Applied in changeset commit:"a68dfb5fdf5fb425b2eef043dff753b8aebbdce".

Files

smuxi-local_engine_ssl_bug.txt	152.9 KB	01/19/2013	vith
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