Subject: WebSSL memory leak problem.
Posted by Oblivion on Sun, 16 May 2010 15:42:55 GMT
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Hi,

I've successfully installed the latest stable release (2361-lucid-i386) of upp via ubuntu "stable" ppa yesterday. But I'm getting heap leaks with the WebSSL package all the time.

I've also tried to use valgrind to inspect this problem, but due to some errors, all my attempts were unsuccessful:

Valgrind..
==4657== --xml=yes has been specified, but there is no XML output
==4657== destination. You must specify an XML output destination
==4657== using --xml-fd=, --xml-file= or --xml=socket=.
valgrind: Bad option '--xml=yes, but no XML destination specified'; aborting.
valgrind: Use --help for more information.
Parsing valgrind output..
Error parsing valgrind output

Any ideas?

Regards.

p.s. : I am using Kubuntu Lucid Lynx.

Subject: Re: WebSSL memory leak problem.
Posted by dolik.rce on Sun, 16 May 2010 16:59:40 GMT
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Oblivion wrote on Sun, 16 May 2010 17:42
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Hi Oblivion,

Glad to hear the PPA works

I can't help you with the memory leak, but I know how to fix the valgrind. The command line syntax was apparently changed lately. Quick fix (in ide/Valgrind.cpp): void Ide::Valgrind()
{
 if(!IsValgrind())
  return;

```
 static String ValgrindLogFile;
 if(IsNull(ValgrindLogFile)) {
  StringStream ss;
  CreateHostRunDir()->Execute("valgrind --help", ss);
  String txt = ss;
  if(txt.Find("--log-file-exactly") > 0)
     ValgrindLogFile = "--log-file-exactly=";
  else
     ValgrindLogFile = "--log-file=";
  if(txt.Find("--xml-file") > 0)  // Added
     ValgrindLogFile = "--xml-file="; // Added
 }
```
... But this requires recompiling theide... If you don't want to do that, I would recommend you to use nightly PPA. I believe someone will commit this or better fix in one or two days.

Best regards,
Honza

Subject: Re: WebSSL memory leak problem.
Posted by mirek on Sun, 16 May 2010 21:38:57 GMT
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dolik.rce wrote on Sun, 16 May 2010 12:59Oblivion wrote on Sun, 16 May 2010 17:42
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  if(txt.Find("--xml-file") > 0)  // Added
```

```
    ValgrindLogFile = "--xml-file="; // Added
 }
...
```

Patch applied...

Mirek

Subject: Re: WebSSL memory leak problem.
Posted by phirox on Mon, 17 May 2010 12:11:28 GMT
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I've posted about the WebSSL memory leak before. In short, it is this line:
CRYPTO_set_mem_functions(SSLAlloc, SSLRealloc, SSLFree);

If you comment it out there shouldn't be a memory leak warning anymore, even though it is actually still there.

For a permanent fix, all the correct openssl unload functions should be called. I will check it out myself later, but for those in a hurry; see http://www.openssl.org/support/faq.html#PROG13 for more information.

Edit: After reviewing the code, Ultimate++ actually unloads exactly according to documentation. The memory leak is 'known' and unfixed by the OpenSSL library itself, the above workaround is still the best patch IMHO.

Subject: Re: WebSSL memory leak problem.
Posted by Oblivion on Mon, 17 May 2010 15:10:13 GMT
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dolik.rce wrote on Sun, 16 May 2010 19:59Oblivion wrote on Sun, 16 May 2010 17:42
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Best regards,
Honza

Hello Honza,

I've switched to the nightly PPA, probably it'll be better that way.

By the way, I forgot to thank you for your efforts on putting the upp in a PPA

Nice Job!

Quote:
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Thanks for the information phirox, I'll check it asap.

Regards

Subject: Re: WebSSL memory leak problem.

Posted by dolik.rce on Mon, 17 May 2010 15:36:27 GMT
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Oblivion wrote on Mon, 17 May 2010 17:10I've switched to the nightly PPA, probably it'll be better that way.

By the way, I forgot to thank you for your efforts on putting the upp in a PPA

Nice Job!
Thank you, I'm glad to hear someone really uses it

And as is said on the download page: Because there is no backporting of bugfixes, the most stable code is the latest SVN (Which is just a few revisions ahead of nightly builds)

Honza

Subject: Re: WebSSL memory leak problem.
Posted by koldo on Mon, 17 May 2010 16:00:30 GMT
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phirox wrote on Mon, 17 May 2010 14:11I've posted about the WebSSL memory leak before. In short, it is this line:
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Hello phirox

This is a really old U++ bug ! .

You discovered it in 2008 and it is not solved yet.

I found the same bug some months ago as I posted here:
http://www.ultimatepp.org/forum/index.php?t=msg&goto=257 72&

It is an OpenSSL cleanup problem.

Other way to solve it would be to do this in Web/SSL/util.cpp:

```
INITBLOCK {
 Socket::Init();
 CRYPTO_set_mem_functions(SSLAlloc, SSLRealloc, SSLFree);
 SSL_load_error_strings();
```

```
 //SSL_library_init();  //SOLUTION TO MEMORY LEAK !!
}
```

Subject: Re: WebSSL memory leak problem.
Posted by dolik.rce on Mon, 17 May 2010 17:00:22 GMT
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Well, I'm not really no way expert in this, but I guess (based on the openssl FAQ link above) that adding EXITBLOCK {
    CRYPTO_cleanup_all_ex_data();
} should solve it as well. Or maybe using the safer functions ENGINE_cleanup() and CONF_modules_unload(), I didn't read the documentation nor did I test this.

BTW: Funny how many solution can exist to fix a single bug

Honza

UPDATE: Apparently I was wrong... This EXITBLOCK already exists, sorry for useless post

---

Subject: Re: WebSSL memory leak problem.
Posted by Sc0rch on Tue, 18 May 2010 05:41:02 GMT
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koldo wrote on Mon, 17 May 2010 23:00phirox wrote on Mon, 17 May 2010 14:11I've posted about the WebSSL memory leak before. In short, it is this line:
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 SSL_load_error_strings();
 //SSL_library_init();  //SOLUTION TO MEMORY LEAK !!
}
```

That's not work. Without "SSL_library_init();", SSL context cannot be created (SSL Context Error in result). I can't run the secured server without this line(

ENGINE_cleanup() - also not helps.

Another variants?

Subject: Re: WebSSL memory leak problem.
Posted by Sc0rch on Tue, 18 May 2010 05:46:00 GMT
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I noticed that in CONSOLE MT I have no memory leaks with Web/SSL at all. There are memory leaks with GUI MT.
hmmm =)

Subject: Re: WebSSL memory leak problem.
Posted by koldo on Tue, 18 May 2010 08:48:05 GMT
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Sc0rch wrote on Tue, 18 May 2010 07:46I noticed that in CONSOLE MT I have no memory leaks with Web/SSL at all. There are memory leaks with GUI MT.
hmmm =)

Hello Sc0rch

I dissent from your statement .

This program gets memory leaks...

```
#include <Core/Core.h>
using namespace Upp;
CONSOLE_APP_MAIN
{
```

}

The only packages it has are Core and Web/SSL.

This OpenSSL memory leak has been reported in forums for years (at least from 2003) and nobody seems to give an answer. There are only a few bytes lost and it is reported this leak does not increase with different calls to init and free functions.

The only fix for now is to comment SSL_library_init() line if it is not really required.

Subject: Re: WebSSL memory leak problem.
Posted by Sc0rch on Wed, 19 May 2010 16:07:01 GMT
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Sorry, it was my fault. I forgot to add waiting loop after thread initialization
I agree with phirox: the best option to deal with SSL leaks is to comment "CRYPTO_set_mem_functions(SSLAlloc, SSLRealloc, SSLFree);". No more notifications. My server with SSL connections works stable (hard tested).

Subject: Re: WebSSL memory leak problem.
Posted by rylek on Wed, 26 May 2010 10:00:51 GMT
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Hello there!

I'm afraid that commenting out CRYPTO_set_mem_functions doesn't remove the memory leaks, it just hides them because OpenSSL then uses standard C allocator instead of the one in U++. In a similar vein, getting rid of SSL_library_init() is in my opinion a bad idea either. Some time ago when debugging a https client using the Web/SSL package I also started to receive some memory leaks, but after recompiling an updated version of OpenSSL they disappeared.

In order to be able to debug this kind of leaks, a long time ago I added a simple memory allocation logging feature to Web/SSL (just set LOG_UPP_SSL_MALLOC to 1). The last time I was tracing the leaks, they seemed related to certain global tables allocated during the SSL library initialization (which might explain why removing the initialization call seemingly removed the problem). However, as I said, after recompiling the OpenSSL they disappeared altogether so I honestly didn't continue to pursue the problem.

Please also note that serious havoc would result from linking your application to OpenSSL compiled with a different build style (MT vs ST, shared vs static libraries). When recompiling

OpenSSL it is good to note which /M flag the make sends to the compiler (at least this holds when compiling under 32-bit MSVC 7.1, which is what I did). In any case if you fail to get rid of the leaks, I can at least try to post somewhere the compiled OpenSSL libraries (libeay / ssleay) which do work for me so that you can try them out. I hope the Web/SSL package is not discontinued, it's just that getting rid of memory leaks in code you didn't write is sometimes quite complicated. Which of course doesn't mean we should ignore them.

Regards

Tomas

Subject: Re: WebSSL memory leak problem.
Posted by koldo on Wed, 26 May 2010 10:19:35 GMT
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Hello Tomas

Quote:I can at least try to post somewhere the compiled OpenSSL libraries (libeay / ssleay) which do work for me so that you can try them out.

It could be great if you could put these libraries somewhere or you could tell us where we can find them or how we can build them the right way.

I have tried to do it but I get memory leaks compiling with different modes.

If they work with MSC and MinGW it would be great too.
