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## Making Connections to Facebook more Secure

October 31, 2014 at 4:30am 

It's important to us at Facebook to provide methods for people to use our site securely. People connect to Facebook in many different ways, which is why we have implemented HTTPS across our service, and Perfect Forward Secrecy, HSTS, and other technologies which help give people more confidence that they are connected securely to Facebook.

That doesn't mean we can't improve yet further.

Consider Tor: Tor challenges some assumptions of Facebook's security mechanisms - for example its design means that from the perspective of our systems a person who appears to be connecting from Australia at one moment may the next appear to be in Sweden or Canada. In other contexts such behaviour might suggest that a hacked account is being accessed through a "botnet", but for Tor this is normal.

Considerations like these have not always been reflected in Facebook's security infrastructure, which has sometimes led to unnecessary hurdles for people who connect to Facebook using Tor. To make their experience more consistent with our goals of accessibility and security, we have begun an experiment which makes Facebook available directly over Tor network at the following URL:

<https://facebookcorewwwi.onion/>

[ NOTE: link will only work in Tor-enabled browsers ]

### Facebook Onion Address

Facebook's onion address provides a way to access Facebook through Tor without losing the cryptographic protections provided by the Tor cloud.

The idea is that the Facebook onion address *connects you to Facebook's Core WWW Infrastructure* - check the URL again, you'll see what we did there - and it reflects one benefit of accessing Facebook this way: that it provides end-to-end communication, from your browser directly into a Facebook datacentre.

We decided to use SSL atop this service due in part to architectural considerations - for example, we use the Tor daemon as a reverse proxy into a load balancer and Facebook



Notes

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traffic requires the protection of SSL over that link. As a result, we have provided an SSL certificate which cites our onion address; this mechanism removes the Tor Browser's "SSL Certificate Warning" for that onion address and increases confidence that this service really is run by Facebook. Issuing an SSL certificate for a Tor implementation is - in the Tor world - a novel solution to attribute ownership of an onion address; other solutions for attribution are ripe for consideration, but we believe that this one provides an appropriate starting point for such discussion.


Over time we hope to share some of the lessons that we have learned - and will learn - about scaling and deploying services via the Facebook onion address; we have many ideas and are looking forward to improving this service. A medium-term goal will be to support Facebook's mobile-friendly website via an onion address, although in the meantime we expect the service to be of an evolutionary and slightly flaky nature.

We hope that these and other features will be useful to people who wish to use Facebook's onion address.

Finally, we would like to extend our thanks to Ms. Runa Sandvik and to Dr. Steven Murdoch of UCL for their kind assistance and generous advice in the development of this project.

*Alec Muffett is a Software Engineer for Security Infrastructure at Facebook London.*

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45 of 55



**Antony Lee** I am in ...  
20 hrs



**Paul Cresswell** Very good. Now all you need to do is withdraw your nose Messaging app.  
20 hrs ·  6




**Dan Saldana** me likes this  
20 hrs




**Antony Lee** you have just help to liberate the internet of China ....  
19 hrs



**Onat Yiğit Mercan** So, it means, you don't want NSA to waste time finding backdoors...  
19 hrs ·  2



**Vegard Pettersen** What are the ramifications for other Tor users' privacy, that now a few thousand more people are going to connect to Tor through browsers that have javascript enabled?  
19 hrs ·  3



**Siddharth Kulkarni** It's amazing. Sad that Google does not allow search through Tor.  
19 hrs



**Pit von Hausen** so that means i can share my illegal content without gettin charged?

18 hrs



**Johnny B. Branded** I've tried logging into the hidden service multiple times, and all that happens is I get my account locked, both on Tor and on the clear web.

18 hrs · 2



**Stephen Russell** Pretty impressive they would consider supporting Tor. I like it.

18 hrs



**Christopher Yocum** It doesn't work. I cannot seem to get past the fact that I am connecting from an unusual place then when I attempt to answer the security questions, it cannot show me pictures and will not let me use my security questions.

17 hrs



**Jago Hine** Awesome!

17 hrs



**Daniel Hagan** [Protect the Graph](#) - will FB be building a functional interface that doesn't require JavaScript?

The onion endpoint is nice, but I can't really do anything in it without enabling JS, which is a huge no-no in Tor land.

17 hrs · 10



**Cosmin R Roman** Nice work!

17 hrs



**Gee Faunk** very good work guys. now make a frontend that doesnt require javascript, as that eliminates any security protections one might have had using tor. still though, I am very happy about this and sincerely thank you

17 hrs · Edited · 2



**Jose Mendoza** Allow sign ups without a phone number or government ID.

17 hrs · 3



**Omar Ouaziz** Wooooooww !

16 hrs



**Elham Gheytauchi** Great Job.

16 hrs · 1



**Salvador Olguín** It's a TRAP!

16 hrs · 3



**Prosody Context** profound

15 hrs



**Emilio Esteban** There is already a "Facebook" on TOR. It's called "TorBook". The trouble is javascript in enabled. The whole point of Onionland is to be anonymous, right?

15 hrs · 1



**Drew Fustini** exciting, using it right now 😊

15 hrs



**Danilo Carvalho** For everyone who's freaking out about the onion address integrity, Tor is migrating for a full 260bit .onion address, chill.

Font: <https://gitweb.torproject.org/.../224-rend-spec-ng.txt> Section 1.2

14 hrs · Edited · 1



**Alex Brasileiro** Great!

14 hrs



**Mark Mason** How is it anonymous after you log in? Wouldn't the NSA or whoever still get your device signature and connect it to the user name? Using Tor sends up a flag to these creeps anyway and their first mission is to figure out who is using Tor and why so if you log into facebook you are just doing their work for them.

14 hrs



**Niko Steve**

14 hrs



**Joseph Blowkowski** It's unusable. It blocked my account because, naturally, when I used Tor, it showed me coming from a different IP address than the one I'm usually tracked to. Hey FB, you do know this will happen every time someone connects via Tor?

Then it wouldn't l... [See More](#)

13 hrs · Edited · 3



**JaNein Vielleicht** this all smells fishy to me. no one support this until they remove javascript atleast for tor users.

14 hrs



**Euell Ooluu** Uhhh.. the purpose of using Tor is to be anonymous.. which absolutely runs counter to FB's insistence that users only use their REAL NAMES. What gives FB, this is just more marketing BS, because I'd still be using my screen name if you were \*really\* interested in security and anonymity for your users.

13 hrs · 1



**Antony Lee** The only concerns now is loading instead of policy, we have millions flocking in ..... how many exit node can be run per amazon instance ? need some technology info. probably need to get some up in .sg & .co.jp site.

13 hrs · Edited



**David Walter** Great work guys! Zuck is the man!

13 hrs · 1



**Antony Lee** anyone read japanese ? [http://www.ntt.com/wideangle\\_security/images/sr20130310.pdf](http://www.ntt.com/wideangle_security/images/sr20130310.pdf)

12 hrs



**Sam Hunt** Manan Khanna

12 hrs



**Dylan Mulrooney** It's great to see this was actually implemented, bringing a lot of attention to the Tor network.

10 hrs · 1



**Waldo Alvarez** hell yeah!

9 hrs



**Achref Akremi** DON'T TRUST ANY ONE !!!

6 hrs



**Jose Mendoza** [Facebook Security](#)

- no phone no. during sign ups or government ids

- allow for m.facebookcorewwi.onion to work (yes you can actually hae subdomains in onion addresses and this may actually load your site faster)... [See More](#)

6 hrs · 1



**Amer Hanna** Do you know the Muffett man?

5 hrs



**Shem Badui** how about i2p ?

3 hrs



**Tom Karpniec** Does this serve any purpose at all other than to create a database of all the privacy-conscious users? (i.e. probably "terrorists" or "hackers") IMO if you use FB you may as well do it in the clear.

2 hrs



**Maxim Marusich** Interesting to see the response of China 😊

2 hrs



**Daniel Lo Nigro** [Tom Karpiniec](#) - I guess it provides the ability to access Facebook from countries that block it (such as China).

2 hrs · 1



**Tom Karpiniec** Daniel Lo Nigro - who from what I've read are at least as enthusiastic about blocking Tor

2 hrs · Edited



**Jose A. León** Will you create a new onion link to use with mobile phones:

<https://m.facebookcorewwi.onion?>

1 hr



**Michał Rydlikowski** Onion facebook page try to open sometimes content from non-onion addresses, I think that defeat the purpose:

Example-> <https://facebookcorewwi.onion/.../wrocl.../371662506325102/> loads <https://fbstatic-a.akamaihd.net/.../v2/yv/r/UL05z4uFkkB.png>

13 mins

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