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Blossom, Tor and touring the Internets

April 6, 2006

Update: The sites listed below to experiment with Blossom appear to be down. I've asked Roger and others for information on the status of the Blossom project and will post whatever I learn here. Sorry that I don't have any more information at this point in time (6/21/07)

[Roger Dingledine](#), one of the programmers behind the [Tor anonymization service](#), has been spending some time around [Berkman](#) lately, and I've had the excellent chance to learn more about the architecture behind Tor. (Tor is "the onion router" and is a piece of software that allows you to access web pages with a very high degree of anonymity. I've written about it in the past, and hope to write a more detailed guide to using Tor in the near future.)

Roger has made the point that Tor is much more than a high security anonymization system – it's a building block for other web tools as well. A great example is the [Blossom tool](#) being developed at Harvard by Geoff Goodell and others. Described as a "perspective access network", Blossom is designed to let you look at the internet from the perspective of other nodes on the net. It does this by routing your request for a webpage through a Tor node located in another country.

What does Google.com look like from Poland? You could get on a plane to Warsaw, or you could use Blossom to pretend to be in Poland. A [web interface to Blossom](#) makes this pretty easy to accomplish – choose an URL to visit and a Tor node to connect from (in this case, one of the three Polish nodes available.) You should (eventually) get directed to the Polish version of the Google homepage, google.pl. (I've had better luck with the Blossom tool by setting my proxy to cassandra.eecs.harvard.edu:8119 and [using this interface...](#))



This happens because you're presenting a Polish IP address to Google – Google uses a geolocation service to determine where this IP is and presents a localized version of their homepage. If you



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Verizon. Accessing via the browser routed through the Tor network by Blossom, webmasterworld.com sees me coming from 193.219.28.245, an IP address associated with [the Interdisciplinary Center for Mathematical and Computer Modeling at Warsaw University](#).



What's fascinating about this, from my perspective, is that ICM in Warsaw never decided to run a service to let people browse the web from their servers. They decided to become part of Tor, and let one of their computers help route anonymized traffic through their machine, or through their machine onto the public Internet. Blossom borrows the ability of Tor "exit nodes" to route traffic, ignores most of Tor's encryption capabilities and uses the growing Tor network to show a user in Massachusetts what the Internet looks like from Warsaw.

Other than being a nifty geek party trick, what's this useful for? Well, it's a fascinating way to check in on Internet filtering. There are at least three active Tor nodes in China – use Blossom to choose one of these computers as an exit node and you can surf the internet from China.

Accessed from [211.94.188.225](#), a computer controlled by [China Unicom](#), google.com redirects to the Chinese language version of google.com (not google.cn, as many have speculated it someday will.) Try to go to [zh.wikipedia.org](#), and you're in for a long wait, followed by an error message from the proxy server, telling you the domain name is inaccessible. This is a great example of China's non-transparent internet filtering at work – rather than presenting you with a page letting you know a URL is blocked, as the Saudis do, the great firewall simply blocks your request and lets you think the site is down, or simply doesn't exist.



My friends over at the Open Net Initiative have lots of techniques for testing how the Internet is filtered in different countries – this sometimes involves visiting those nations and testing from within the country, and sometimes involves using proxy servers in those countries from the US, Canada or UK. Blossom gives you the chance to replicate some of this research at home... or merely check whether reports of a site being blocked in a particular country are true.



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check if Blogger.com was blocked there... Unless someone opens a Tor node in UAE, we can't replicate [BoingBoing's reports of being blocked there](#).

Here's an interesting sense where Tor and Blossom might be at cross purposes. Blossom is most interesting (in my opinion) where local authorities have constrained access to the Internet. But if Tor registers exit nodes in those countries (as in China, where we know the Internet is heavily filtered), it becomes less useful to Tor users trying to access Internet content while maintaining their anonymity... if your exit node from Tor is in China, you're going to get a highly anonymized, filtered view of the Internet.

I made the argument a few weeks back that we're dealing with a world where it's [less possible to talk about "the internet" and more correct to talk about "the internets"](#) – Blossom's a quick ticket to a world tour of these internets.

16 thoughts on "Blossom, Tor and touring the Internets"

ROGER DINGLEDINE

April 14, 2006 at 11:23 pm

Hi Ethan,

I just ran across this article. Thanks for the write-up. Two quick notes though:

First, Tor is spelled "Tor", not "TOR". Perhaps this is a losing battle, but we'll keep trying. :)

Second, I don't believe that Blossom (the design) and Tor (the design) are at odds. You're right that the current Tor network aims for anonymity and reachability, so it's hard to sign up firewalled nodes without having some reachability



Ethan Zuckerman

You're right that part of Blossom's value right now leverages off the current Tor network. But Geoff has done some experiments setting up a big Blossom network via planetlab, so there are other ways. One fine option would be a hybrid network where Blossom users can use any node, but some Tor users would only use a subset. Many options.

ETHAN

April 15, 2006 at 8:52 am

Thanks for weighing in, Roger. So long as people hear that Tor stands for "The Onion Router", I predict they'll write it as TOR. I think you've got a losing battle on your hands until you lost the acronym.

I like the idea of alternative Tor networks – ones that act as subsets to optimize speed and ones that act as supersets to allow Blossom-like testing. To what extent is this possible in Tor today? Can I say "give me any exit node except those in China and Pakistan"?

KEVIN S.

January 7, 2007 at 1:44 am

I have been trying to use Blossom from China, but am unable to access the directory. I have emailed Mr. Goodell, but he has not responded. Do you (or any Mr. Zuckerman's readers) know of any way to check the status of the Blossom Directory aside from [here](#)? I always get a 404 when trying to access that website.

1

April 1, 2007 at 7:08 pm



Ethan Zuckerman

I've tried to install blossom and use it with Tor, but I do not know much about computers and there is no exe file within blossom distribite archive which can be downloaded from

<http://afs.eecs.harvard.edu/~goodell/blossom/src/blossom-current.tar.bz2>

Is blossom only for Lynux ?

ETHAN

April 2, 2007 at 1:01 am

Hi there – I'm out of the country right now and can't check the Harvard site... but it's certainly possible that it's gone down in the past year. I will check and repost about Blossom (and about some larger Tor/Torpark issues) in the next week or so.

1

May 2, 2007 at 2:13 pm

It is me again. Thanks for your quick post. One more thing. Is Blossom only for Lynux or it can be installed on Windows XP SP2. There is no support on blossom home page. I can not figure it out how to install Blossom on Windows.

MARCOS

May 18, 2007 at 12:51 am

Installing Blossom on Windows is just a matter of extracting its files into a directory. In order to run it, though, you must have the Python and Perl programming languages installed.

A different Windows XP question: In order to get blossom.pl to run (and, therefore, have the interface for which I installed Blossom in the first place), is it necessary to be running a web server? This would be SO much easier under Linux, but I'm stuck on Windows XP now, and have no idea the proper way to call up blossom.pl so it will actually run, unless having a web server (Apache, or maybe even the one that comes with Windows) is also necessary.



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May 19, 2007 at 2:01 pm

I am so glad that you answer me. This is I think the only place in the web where people are discussing blossom. Thank you again.

Is it really necessary to install Pearl program language too?

I have installed only Python and I did not manage to get blossom running mainly because I do not know how.

By the way I do not have a blossom.pl file

Here is a screenshot http://www.picvalley.net/u/48/11930_974.JPG
of all the files I got. The black came out after I started blossom.py

I've read that blossom can be used as a controller for Tor with the ability to point an exit nodes by country for TOR

Has anyone managed this under windows?

RAM

June 18, 2007 at 6:23 pm

Hi,

It seems that I am unable to access the blossom sites

<http://serifos.eecs.harvard.edu/cgi-bin/blossom.pl?proxy=1>

<http://afs.eecs.harvard.edu/~goodell/blossom/src/blossom-current.tar.bz2>

Are they down? If yes.. can anyone point me to the url where I can download blossom or share the source the file with me.

Thank You



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and running – will post when I learn more.

LISNLISN

June 21, 2007 at 6:42 am

the url to download blossom is invalid now.could u pls give me another url where download this software?i have been searching for a long time and with no results.thanks!

LISNLISN

June 22, 2007 at 5:58 am

good news!

i have found Blossom:i saw a blog tagged Blossom and i asked the blogger for Blossom,he send it to me.it's the linux edition,though.i seems that i have to install a virtual machine.everyone who needs it ,contact me with cutelisin@gmail.com.if you have windows edition,tell me either.

WESLEY

July 15, 2007 at 6:42 pm

Just came across this article while writing up a comparison between Anonymizer.com and the Tor network. Anyone interested in Blossom, will, I think, also be interested in <http://www.pickaproxy.com> which is being built on top of Tor to allow users to “geospoof” their cyber presence – in other words, to pick whichever geographic location they wish to appear to be in. RSS feed is available at <http://feeds.feedburner.com/pickaproxy>.

LISN

July 18, 2007 at 6:24 am



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Pingback: [Mutant Palm](#) » [Blog Archive](#) » [Scheer Chutzpah?](#)

COLM

June 24, 2008 at 10:37 pm

hey .. this sounds very interesting and also over my head at the same time.. i am currently an irish citizen living in canada and all my favourite programs that would normally watch on rte.ie especially the gaelic sports are available from island of ireland only...

is there any simple free website / download that will geospoof my ip address to that of ireland.. fro this purpose..

i would be very grateful .. (its championship season!)

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